PD-ABE-391

U N C L A S S I F I E D

AGENCY FOR INTERNATIONAL DEVELOPMENT

Washington, D.C. 20523

PROJECT PAPER

South Pacific Regional

Commercial Agricultural
Development 879-0025

Dated: December 20, 1991

U N C L A S S I F I E D

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE: A (A = Add, C = Change, D = Delete) — Amendment Number: ____ — DOCUMENT CODE: 3

2. COUNTRY/ENTITY: REGIONAL DEVELOPMENT OFFICE/SOUTH PACIFIC

3. PROJECT NUMBER: 879-0025

4. BUREAU/OFFICE: ASIA — 04

5. PROJECT TITLE (maximum 40 characters): COMMERCIAL AGRICULTURAL DEVELOPMENT

6. PROJECT ASSISTANCE COMPLETION DATE (PACD): MM 12 DD 31 YY 96

7. ESTIMATED DATE OF OBLIGATION (Under 'B.' below, enter 1, 2, 3, or 4)
A. Initial FY 92 B. Quarter 2 C. Final FY 96

8. COSTS ($000 OR EQUIVALENT $1 =)

A. FUNDING SOURCE	FIRST FY 92 B. FX	C. L/C	D. Total	LIFE OF PROJECT E. FX	F. L/C	G. Total
AID Appropriated Total						
(Grant)	(600)	(400)	(1,000)	(3,000)	(3,000)	(6,000)
(Loan)	( )	( )	( )	( )	( )	( )
Other U.S. 1.						
Other U.S. 2.						
Host Country						
Other Donor(s)						
TOTALS	600	400	1,000	3,000	3,000	6,000

9. SCHEDULE OF AID FUNDING ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE 1. Grant	2. Loan	D. OBLIGATIONS TO DATE 1. Grant	2. Loan	E. AMOUNT APPROVED THIS ACTION 1. Grant	2. Loan	F. LIFE OF PROJECT 1. Grant	2. Loan
(1)	ARD	220				1,000		6,000	
(2)									
(3)									
(4)									
TOTALS						1,000		6,000	

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each): 014 | 031 | 055 | 075 | 079 | 140

11. SECONDARY PURPOSE CODE

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code	COOP	LAB	TECH	TRG	ENV	BF
B. Amount	40%	10%	10%	10%	10%	20%

13. PROJECT PURPOSE (maximum 480 characters)

TO INCREASE THE VALUE OF COMMERCIAL AGRICULTURAL EXPORTS TO NICHE MARKETS

14. SCHEDULED EVALUATIONS
Interim MM 06 YY 95 | MM YY | Final MM 12 YY 96

15. SOURCE/ORIGIN OF GOODS AND SERVICES
[x] 000 [ ] 941 [x] Local [ ] Other (Specify) 879

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a ____ page PP Amendment.)

THE RDO/SP ACTING CONTROLLER CONCURS WITH THE METHODS OF FINANCING, PAYMENT VERIFICATION AND AUDIT PRESENTED HEREIN.

(Donald K. Shannon) (Date)

17. APPROVED BY
Signature: John B. Woods
Title: John B. Woods, REGIONAL DIRECTOR
Date Signed: MM 12 DD 09 YY 91

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION
MM DD YY

AID 1330-4 (8-79)

ACTION MEMORANDUM FOR THE REGIONAL DIRECTOR, RDO/SP

FROM : Sharon Fee, Agricultural Development Officer SFee

SUBJECT : South Pacific Regional Commercial Agricultural Development Project (879-0025) - Authorization

Problem: Your authorization is required for a grant of $6 million for the South Pacific Regional Commercial Agricultural Development Project. It is planned that up to $1,000,000 will be obligated in FY92.

Discussion: The Commercial Agricultural Development (CAD) Project is the fourth and last project promised as a U.S. Presidential initiative at the 1990 "Honolulu Summit" between President Bush and Pacific island leaders. It serves the President's vow "to enhance economic growth through private sector development, emphasizing agricultural and marine resources" in the South Pacific.

The project also responds to the substantial slow down in Pacific island export growth, particularly in the agricultural sector, in the 1980's, which has been accompanied by poor investment and economic growth performance. Traditional bulk commodities, particularly copra, have been hard hit. The terms of trade of these bulk commodities, compared with the price of imports, has moved significantly against Pacific island exports. Most seriously affected are the smaller island economies which are heavily dependent on coconut products, the price of which has halved during the 1980's.

It has become clear to Pacific island countries that they must diversify their agricultural exports toward higher value commodities produced largely by small holders, supported by commercial exporters, processors and industry companies. Agricultural diversification is supported at the policy level, with horticultural crops and spices for export prominent in the development plans of virtually all island countries. In addition, South Pacific governments' pronouncements have been universal in their endorsement of the private sector as the engine of economic development and the vehicle to expand exports. At the same time, these countries have important, inherent comparative advantages in the production and marketing of many horticultural and other niche commodities. These stem from the region's tropical climate, southern hemisphere location, relatively pest-free and unpolluted environment, and the linkages with tourism.

Based on the advantages outlined above, a modest trade has developed, mainly to Australia, New Zealand, North America and, more recently, to Japan. Yet overall export diversification performance has been below expectations. Lack of a continuous supply of high quality produce has proved to be a major constraint to the growth of high value horticultural exports from the Pacific islands. Contributing factors have been the adverse impact of direct government involvement in disinfestation facilities, inadequate legal and institutional environment, inadequate infrastructure support, lack of adequate market information, limited management capability, and land availability and tenure problems.

CAD will increase the value of agricultural exports to niche markets (1) strengthening commercial exporting enterprises and (2) improving product export competitiveness. Commercial exporting enterprises will be strengthened by privatizing parastatal and government agribusiness activities, improving organizational and operational aspects of enterprises and identifying business expansion opportunities. Product export competitiveness will be improved by establishing industry standards, improving the policy and regulatory environment, changing pre- and post-harvest practices, introducing quarantine treatments, introducing new processing technologies, researching commercial problems and opportunities and distributing information to enterprises.

Implementation Strategy: To accomplish the project's goals and objectives, seven person years of long-term technical assistance (TA) - an agribusiness advisor located in Fiji and a marketing advisor stationed at USP, Alafua, -- complemented by four person years of long-term local TA and approximately 40 person months of short-term TA will be provided. Training, both local and off-shore, and commodities will also be included. The project will be implemented under three mechanisms: (1) a Cooperative Agreement with the University of the South Pacific; (2) a PASA with the USDA; and (3) a contract with a private U.S. company.

A draft PIO/T for the PASA with USDA will be sent to the Regional Contracting Officer as soon as possible after Project authorization. The total estimated cost for one year of PASA implementation is $95,000. The PASA is the first planned implementation action to be initiated as technical assistance under the Project and may be expected as early as February 1992, subject to funds availability. The research and development necessary to establish an acceptable quarantine treatment will take approximately three years. Therefore, training in the development of protocols must commence immediately after PASA funding becomes available.

A draft PIO/T for the second major implementation action--contracting for a private sector technical assistance contractor to supply two long term technicians, the Agribusiness Specialist and the Marketing Advisor--will also be submitted to the Regional Contracting Officer soon after project authorization to allow competitive procurement action to be completed and contractor mobilization to take place this fiscal year. To fund this contract for one calendar year, $335,000 have been reserved from funds initially to become available.

The Cooperative Agreement with the USP will be the last of the major project TA activities to be initiated. A sum of $30,000 will be reserved from initially available Project funding to finance the first graduate assistant to work under the Marketing Advisor. Finally, a sum of $210,000 will be reserved to fund a PSC Project coordinator for a one year period including related office expenses, who will be based in Suva.

Local Cost Financing

Local Cost financing under this Project is authorized to the extent set forth in Handbook 1B, Chapter 18, paragraphs 1(c) (2)-(6) as detailed in the attached Project Authorization. Additional local cost or financing of non-U.S. source goods or services, as necessary, shall be the subject of ad hoc transactional waivers to be issued by the Director, RDO/SP pursuant to procedures set forth in Handbook 1B, Chapter 5.

Project Review: The Project Identification Document (PID) for the CAD project was approved by AID/W on December 11,1990. RDO/SP was authorized to develop a Project Paper (PP) and you were given authority to authorize the Project (State 011845 dated January 12, 1991). The PP was reviewed by RDO/SP on December 6, 1991. The review concluded that the PP represents a project which is technically, financially, economically, socially, institutionally and environmentally sound and feasible. It was also concluded that the project adequately addresses the issues raised during the AID/W PID review. A few issues were raised with the PP and all recommended modifications have now been made to the paper.

Congressional Status: The project was summarized on page 534 of the FY92 Congressional Presentation only in the amount of $700,000. A Technical Notification will be required to fund the $1,000,000 planned for FY1992 under this Authorization. Since funds are not

currently available to fund any obligations under this Authorization, you are requested to approve this authorization subject to the availability of funds.

Recommendation: That you authorize the Commercial Agricultural Development Project by signing the attached Project Authorization (Tab A) and the Project Paper Facesheet (Tab B).

Attachments:
A: Project Authorization (Tab A)
B: Project Paper (Tab B)

Clearance:
PROG:KMDahlgren
ARD:JOsborn (draft)
CONT:DKShannon
ASIA/DR/TR:ARHurdus (draft)
GC/ASIA:GBisson 12/17/91

PROJECT AUTHORIZATION

NAME OF COUNTRY	:	South Pacific Regional
NAME OF PROJECT	:	Commercial Agricultural Development
NUMBER OF PROJECT	:	879-0025

1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Commercial Agricultural Development Project (the "Project") for the South Pacific Region involving planned obligations of an amount not to exceed Six Million United States Dollars ($6,000,000) in grant funds over a five-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 finance foreign exchange costs and, as specifically authorized below, local currency costs of the Project. The planned life of the Project is five years from the date of initial obligation.

2. The Project consists of technical and other assistance to improve the quality and increase the value of agricultural exports by (1) strengthening commercial exporting enterprises and (2) improving product export competitiveness.

3. The project implementation agreements, including contracts, cooperative agreements and memoranda of cooperation, 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. <u>Source and Origin of Commodities, Nationality of Services:</u>

Commodities financed by A.I.D under the project shall have their source and origin in the United States (A.I.D. Geographic Code 000), except as A.I.D. may otherwise agree in writing or as otherwise provided in paragraph b., below.

Except for ocean shipping, the suppliers of commodities or services shall have the United States as their place of nationality, except as A.I.D. may otherwise agree in writing, or as otherwise provided in paragraph b., below. Ocean shipping under the project, except as A.I.D. may otherwise agree in writing, shall be financed only on flag vessels of the United States.

b. Local Cost Financing.

Locally financed procurement involves use of project funds to finance the procurement of goods and services supplied by local businesses, dealers or producers, in any country of the A.I.D. South Pacific Region (A.I.D. Geographic Code 879), with payment normally being in the currency of said countries.

All locally financed procurements must be covered by source/origin or nationality waivers as prescribed in Handbook 1B, Chapter 5, with the following exceptions:

(1) Locally available commodities of U.S. origin, which are otherwise eligible for financing, if the value of the transaction is estimated not to exceed the local currency equivalent of $100,000 (exclusive of transportation costs).

(2) Commodities of geographic code 935 origin if the value of transaction does not exceed $5,000, as prescribed in Handbook 1B, Chapter 5, paragraph 5B4c(2).

(3) Professional services contracts estimated not to exceed $250,000.

(4) Construction services contracts estimated not to exceed $5,000,000.

(5) The following commodities and services which are available only locally:

(a) Utilities including fuel for heating and cooking, waste disposal and trash collection;

(b) Communications --telephone, telex fax, postal and courier services;

(c) Rental costs for housing and office space;

(d) Petroleum, oils and lubricants for operating vehicles and equipment;

(e) Newspapers, periodicals and books published in the countries of the Region; and

(f) Other commodities and services (and related expenses) that, by their nature or as a practical matter, can only be acquired, performed, or incurred in Regional countries, e.g. vehicle maintenance, hotel accommodations, etc.

d. Assistance recipient selection

Based upon the attached Handbook 13, Chapter 2 justification, I hereby approve the limiting of Requests for Application for the implementing Cooperative Agreement solely to the University of the South Pacific.

John B. Woods
Regional Director

12-20-91
Date

Clearance:

DShanon, CONT
KDahlgren, PROG
JOsborn, ARD
GBisson, GC/Asia 12/17/91
SFee, ADO

UNITED STATES GOVERNMENT

memorandum

DATE: December 18, 1991

REPLY TO ATTN OF: Sharon A. Fee, ADO

SUBJECT: Justification for limiting cooperative agreement application

TO: John B. Woods, Regional Director

According to Handbook 13, Chapter 2, paragraph 3b, competition is not required when the award recipient has exclusive or predominant capability, based on experience, specialized facilities or technical competence, or based on an existing relationship with the cooperating country or beneficiaries.

The University of the South Pacific, as the only regional agricultural research institute of higher learning is exclusively qualified to provide the links to commercial agricultural required by the Project.

AID's ten years of assistance to the Institute of Research, Extension and Training for Agriculture (IRETA) have strengthened the institute to the point where it is able to conduct research on industry - identified problems, prepare the quality standard grading manuals and video tapes required by commercial exporters, and disseminate marketing information to the agribusiness entities.

During the course of our assistance to IRETA, an Agricultural Information Network (AIN) has been set up. The AIN office has satellite links to major U.S. and Pacific Island Nations and has an extensive research library. It has the capability of producing audio-visual aids for agribusinesses and the IRETA newsletter will serve as a source of commercial agricultural information.

In addition, the Agricultural Liaison officers stationed in nine USP countries will provide the means to disseminate marketing information to agribusinesses, not linked to national extension on research organizations.

I do therefore certify that USP (and, by extension, IRETA) has exclusive capability, based both on experience, specialized facilities, technical competence, and on existing relationships with our cooperating countries to carry out the activities of the proposed Cooperative Agreement.

ADO:SAFee 12/18/91

Our Ref: SPRAD 06

Clearance:
GC/Asia:GBisson: 12/18
Chron: Reading File

OPTIONAL FORM NO. 10
(REV. 1-80)
GSA FPMR (41 CFR) 101-11.6
5010-114

ACRONYMS

ADB	Asian Development Bank
ADO	Agricultural Development Office
A.I.D.	(U.S.) Agency for International Development
AIN	Agriculture Information Network
ALO	Agricultural Liaison Officer
APHIS	Animal and Plant Health Inspection Services (USDA)
ARS	Agricultural Research Service (USDA)
CAD	Commercial Agricultural Development (RDO/SP Project)
COP	Chief of Party
CCRI	Cocoa and Coconut Research Institute (in PNG)
CEMA	Commodity Export Marketing Authority (in Solomon Islands)
EEC	European Economic Community
EDB	Ethylene Dibromide
ENBP	East New Britain Province (in PNG)
FAO	Food and Agriculture Organization
FIMCO	Friendly Islands Marketing Cooperative (in Tonga)
FFGEA	Fiji Fresh Ginger Exporters Association
FFPEA	Fiji Fresh Produce Exporters Association
FOB	Free on Board
GRA	Graduate Research Assistant
HTFA	High Temperature Forced Air
HWI	Hot Water Immersion
HWT	Hot Water Treatment
ha	hectares
IEE	Initial Environmental Examination
IPM	Integrated Pest Management
IQC	Indefinite Quantity Contract
IRETA	Institute for Research, Extension and Training for Agriculture (USP-Alafua in Western Samoa)
KG	Kinna Gillbanks Ltd (PNG)
MARC	Market Access and Regional Competitiveness (RDO/SP Project)
MOC	Memorandum of Cooperation
MOU	Memorandum of Understanding
MPI	Ministry of Primary Industries & Cooperatives (in Fiji)
NGIP	New Guinea Islands Produce Company Ltd.
NMA	National Marketing Authority (of Fiji)
NZ	New Zealand
OICD	Office of International Cooperation Development (USDA)
PASA	Participating Agency Service Agreement
PD&S	Project Development and Support
PEP	Profitable Environmental Protection (RDO/SP Project)
PID	Project Identification Document
PIDP	Pacific Islands Development Center (East-West Center)
PIMAR	Pacific Islands Marine Resources (RDO/SP Project)
PIO/T	Project Implementation Order/Technical
PNG	Papua New Guinea
PNGGA	Papua New Guinea Growers Association
PNGSGA	Papua New Guinea Spice Growers Association

PP	Project Paper
proag	project agreement
PSA	Plantation Support Association (in Vanuatu)
PSC	Personal Services Contract
QT	Quarantine Treatment
RAP	Regional Agribusiness Project (ASIA/DR/TR)
RFFP	Regional Fruit Fly Project (SPC/FAO)
R&D	Research and Development
RCO	Regional Contracting Office
RDO/SP	Regional Development Office/South Pacific
RFP	Request for Proposals
SSA	Social Soundness Analysis
SPC	South Pacific Commission
SPRAD	South Pacific Regional Agriculture Development (RDO/SP Project)
TFP	Tropical Food Products Manufacturing (Fiji) Ltd.
UHT	Ultra High Temperature
UPNG	University of Papua New Guinea
U.S.	United States
USA	United States of America
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
USDO	United States Development Office
USG	United States Government
USP	University of the South Pacific
WSTEC	Western Samoa Trust Estates Corporation

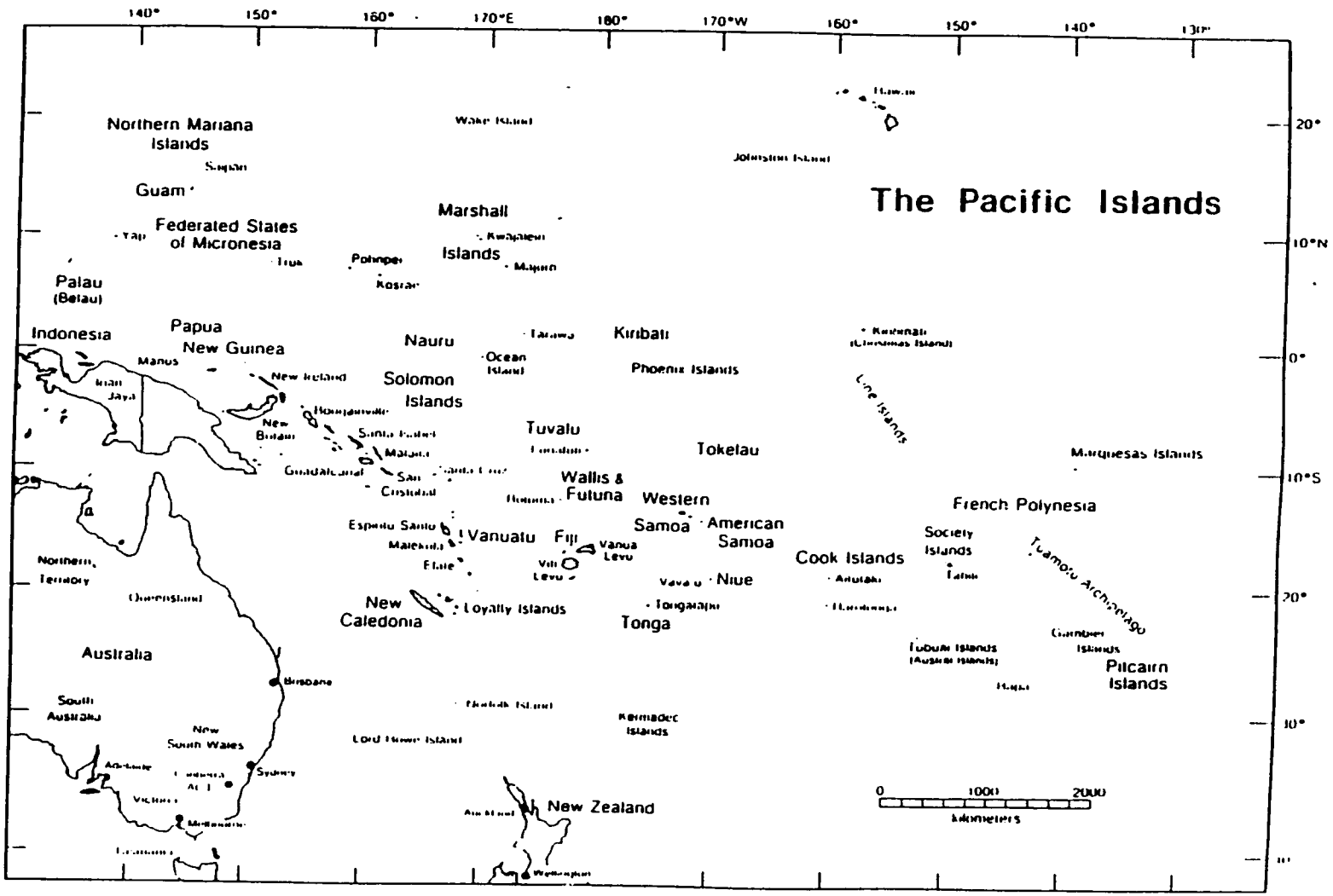
EXECUTIVE SUMMARY

The terms of trade have moved strongly against traditional bulk agricultural export from Pacific islands necessitating diversification towards higher value products. Market demand for high value exports is growing and presents a significant opportunity for economic growth. But South Pacific products are not available and/or competitive, due to a lack of quality control, problems with continuity of supply, and limited access to some lucrative markets because of quarantine restrictions.

The Commercial Agriculture Development (CAD) Project is a six million dollar, five year multi-country effort. It has two approaches to increasing the value of agricultural exports to niche markets. (1) Commercial exporting enterprises will be strengthened by privatizing parastatal and government agribusiness activities, improving organizational and operational aspects of enterprises and identifying business expansion opportunities. (2) Product export competitiveness will be improved by establishing industry standards, improving the policy and regulatory environment, changing pre-and post-harvest practices, introducing quarantine treatments, introducing new processing technologies, researching commercial problems and opportunities and distributing information to enterprises.

Fiji can take immediate advantage of new high value export opportunities and thus will be the initial hub of CAD's regional activities. A long-term agribusiness advisor will be stationed in Suva and will coordinate assistance to regional agribusinesses from there. In PNG, CAD's main focus will be on assisting selected agribusinesses and in developing a regional management training facility, run for and by the private sector. A marketing advisor will be stationed at USP-Alafua in Western Samoa to initiate a regional marketing network and market research and to assist agribusiness enterprises in Western Samoa. Quarantine work will be associated with the South Pacific Commission's fruit fly project in Fiji. Research on treatment protocols will be conducted initially in Fiji and later extended to other countries.

By the end of project the quality and value of fresh produce exported from Fiji, Western Samoa, and Tonga will have increased (ginger at least by $1 million, fruit and vegetables by $2 million, and root crops by $1 million). There will be an increase in high value sales to tourists. Root crop, spice, and nut exports from Vanuatu and indigenous nut exports from the Solomon Islands will begin. Commercial and non-chemical quarantine treatment and other technologies will have been disseminated, and a regional management training capability based in Papua New Guinea will have been established.


The Pacific Islands
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170°W
160°
150°
140°
130°
20°
10°N
0°
10°S
20°
30°
Northern Mariana Islands
Guam
Federated States of Micronesia
Palau (Belau)
Indonesia
Papua New Guinea
Marshall Islands
Nauru
Kiribati
Solomon Islands
Tuvalu
Tokelau
Wallis & Futuna
Western Samoa
American Samoa
Vanuatu
Fiji
Niue
Tonga
New Caledonia
Loyalty Islands
Cook Islands
French Polynesia
Society Islands
Tuamotu Archipelago
Marquesas Islands
Pitcairn Islands
Phoenix Islands
Line Islands
Australia
Northern Territory
Queensland
South Australia
New South Wales
Victoria
Brisbane
Sydney
New Zealand
Kermadec Islands
Lord Howe Island
Norfolk Island
Wake Island
Johnston Island
Hawaii
Manus
New Ireland
New Britain
Guadalcanal
San Cristobal
Espiritu Santo
Malekula
Efate
Viti Levu
Vanua Levu
Tongatapu
Tahiti
Rarotonga
Tubuai Islands (Austral Islands)
Gambier Islands
Niue
Ocean Island
Tarawa
Kwajalein
Majuro
Ponape
Kosrae
Truk
Yap
Saipan
Rotuma
Kaiwatai (Christmas Island)
Anutaki
Aitutaki
Palmerston
Auckland
Wellington
Melbourne
Adelaide
Canberra
Darwin
Irian Jaya
0
1000
2000
kilometers

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Annex A: PID Approval Cable
B: Logical Framework
C: Statutory Check List
D: The Economic Performance of Pacific Island Countries.
E: Expanding Horticultural and Niche Commodity Trade Between the pacific Islands and the Pacific Rim.
F: Quarantine Treatment Technology Transfer to the Pacific Islands.
G: Institutional Analysis
H: Technical Analysis
I: Economic Analysis
J: Social Soundness
K: Environmental
L: Privatization of Ginger Processing
M: NGIP Background Paper
N: CAD and MARC Project Coordination

I. SETTING AND PROJECT RATIONALE

A. "Honolulu Summit"

The Commercial Agricultural Development (CAD) Project is a tangible response to the 1990 "Honolulu Summit" between President Bush and Pacific island leaders, where the President announced "four additional Agency for International Development (A.I.D.) development assistance programs to enhance economic growth through private sector development, emphasizing agricultural and marine resources....." Three of these projects have been authorized and implementation has began: Market Access and Regional Competitiveness (MARC), Pacific Islands Marine Resources (PIMAR) and Profitable Environment Protection (PEP). CAD will complete the four project package.

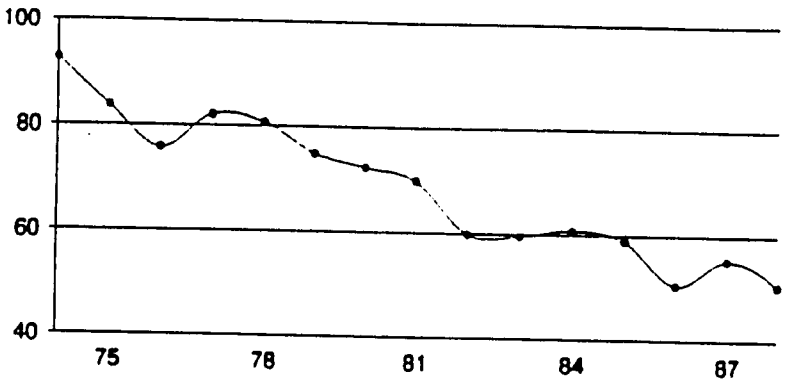
B. The Need to Increase the Value of Agricultural Exports

It is now widely established that although the economic performance of the Pacific islands was satisfactory during the 1970's, performance during the 1980s has been dismal (See Annex B). There has been a substantial slow down in island export growth in the 1980s (particularly in agriculture). This slow down has been accompanied by poor investment and growth performance, both absolutely and relative to other developing countries of similar size. A comparative analysis suggests that structural weaknesses in Pacific island economies need to be overcome. CAD aims to contribute in a practical way to this process by assisting export growth and diversification.

While the Pacific islands may have a "natural" comparative advantage in the production of traditional bulk commodities such as copra, these alone cannot provide the basis for sustained development in the future. Over the last two decades the terms of trade on these bulk commodities compared with the price of imports have moved significantly against Pacific island exports (See Annex D). Most seriously affected are the smaller island economies that are heavily dependent on coconut products, the price of which has halved in real terms during the 1980s. This point is highlighted in Figure 1.

Figure 1

Figure 1: Tongan Coconut Oil Prices 1974-1988 (five year moving averages, deflated by the import component of the consumer index)



It is vital for the Pacific island economies, as part of their long term adjustment strategy, to diversify their exports toward commodities with more favorable production and demand characteristics. For the agricultural sector, where the vast majority of the population is still employed, this requires diversification toward higher value products.

The availability and distribution of land means that high value production will need to come from semi-commercial small-holders and small plantations. As Hawaiian and Tongan experience has shown small farms, if well managed and directed, can afford major advantages in the production of crops such as papaya or vanilla which require intensive management. Overall, the structure of Pacific islands agriculture is such that the development of export industries is best served by producers supported by commercial exporters and processors.

C. Opportunities for High Value Product Export Diversification

The need for agricultural diversification is recognized at the policy level, with horticultural crops and spices, and with increased value added for traditional commodities, all prominent in the development plans of island countries. These new products are often of minor importance in international trade, tending to find a small market niche in one or more of the Pacific rim countries. Yet they can have a significant impact on a small island economy. Examples of such commodities from the region include papaya (the Cook Islands' major export earner), ginger (Fiji's third major agricultural export earner after sugar and copra), vanilla and squash (Tonga's two major export earners), and taro and coconut cream (Western Samoa's largest export earners). The high unit value of these commodities means that significant industries can be built on relatively small land areas, a prime consideration in the Pacific islands where the availability of suitable land often is a major constraint to development. These commodities can also sustain relatively high labor intensities and yet remain viable.

In varying degrees countries of the South Pacific have important, inherent advantages in the production of horticultural and other niche export commodities. These stem from the region's climate, southern hemisphere location, relatively pest-free and unpolluted environment, and the linkages with tourism. These factors are presented in Annex E and discussed briefly below:

- The isolation of the islands has meant that they have been essentially free from major pests and diseases. This enviable quarantine status has sometimes given Pacific island producers access to markets from which their competitors are excluded. However, some pests do exist and access to some markets is now threatened because of the antiquated treatment facilities being operated by government departments and by changes in allowable treatments. The immense economic cost, in terms of potential income foregone, of not maintaining and enhancing an island country's quarantine is now starting to be recognized by the region's policymakers and is essential to maintaining one of the region's comparative advantages .

- Located in the southern hemisphere, the Pacific islands have the potential to be off-season suppliers for a range of horticultural commodities. For example, because ginger can be harvested only in the first half of the year in the northern hemisphere, Fiji has been able to supply a market niche in North America. Similarly, for the Japanese squash market, the period from November to early January is one of short supply and relatively high prices which coincides with the prime production period for the Pacific islands. May - November corresponds with the cold season in New Zealand and offers a

market for temperate climate crops that can be grown during the winter in the islands. In the highlands of Papua New Guinea, a rare combination of altitude, latitude, rainfall and fertile soil provides a unique set of conditions for a range of floriculture and other horticultural products. Pacific islands also provide ideal growing conditions for certain nuts and spices which have been undersupplied on the world markets.

- Pacific island horticultural commodities have duty free access to major markets. Producers with air links have the opportunity to competitively sell fresh tropical produce to the urban markets of Sydney, Melbourne, Auckland, Tokyo, Guam and Honolulu, which have combined populations in excess of 15 million and are within three to six hours flying time. Furthermore, these cities include up to half a million loyal Pacific islander consumers, as well as Asian populations who provide substantial markets for specialty products such as root crops.

- Growth in Pacific island tourism is bringing with it substantial opportunities for horticultural development. Hawaii's papaya and floriculture industries vividly illustrate the potential when tourism creates outward air freight capacity at reasonable cost. Similar opportunities are developing for the Cook Islands and Fiji, and more recently Vanuatu, Western Samoa and Tonga. The establishment of an international airport in Papua New Guinea's East New Britain Province would open up the lucrative Japanese market for fresh produce exports. For some commodities, tourism can provide an important domestic base around which an export industry can be built, as illustrated by Hawaii's macadamia nut industry. Exports via the "suitcases" of tourists represent the major market for this product. The Cook Islands, Fiji, Tonga and Vanuatu are trying to establish markets for specialty coffee processing using the tourist market as a base, in much the same way that Hawaii's Kona coffee industry has been developed. Fiji and Vanuatu's fledgling black pepper industry could be developed along the same lines. The indigenous ngali nut of the Solomon Islands (or nagai nut in Vanuatu) could follow the same kind of development as the macadamia nut in Hawaii.

D. An Improved Policy Environment for Export Growth and Diversification

A quite dramatic shift is occurring in the policy environment in the Pacific islands. Government pronouncements and recent development plans have been universal in their endorsement of the private sector as the engine of economic development and as the

vehicle to expand exports.

The private export orientation in the agricultural sector has been specifically supported by the adoption of measures such as:

- The reduction or elimination of input subsidies and tariffs that have encouraged extremely inefficient import substitution activities;

- The loss of monopoly status or abolition of some parastatal marketing boards (e.g., the Commodities Board in Tonga and the Produce Marketing Division in Western Samoa). Privatization options are being considered for others (e.g., the Fiji National Marketing Authority (NMA)). Papua New Guinea announced an "Economic Package" in June 1990 to spur domestic and foreign investment;

- The encouragement of industry operated and financed extension and research (e.g., Papua New Guinea coffee and cocoa, and Fiji ginger);

- The acceptance in principle of privatizing quarantine treatment facilities (e.g., Cook Islands and Fiji);

- The facilitation of land availability to commercial agriculture (e.g., the privatization of Western Samoa Trust Estates Corporation (WSTEC) lands on long term smallholder leases); and

- The commencement by Papua New Guinea and the Solomon Islands of land registration programs that will facilitate the long term leasing of customary land.

The policy reforms have been most comprehensive in Fiji where the 1989 mini-budget introduced a new export led strategy. This provided for the gradual deregulation of the economy and the elimination of the import substitute production policies that had hampered development since the early 1980's. These reforms were designed to encourage domestic resource mobilization, productive resource use, increased public sector efficiency, and the promotion of private sector activities, especially in export production. With the implementation of the fiscal policy reforms announced in November 1991, Fiji will present the type of outward looking economic environment necessary for sustained economic development. Papua New Guinea and Western Samoa have also instituted a similar package of reforms under Asian Development Bank (ADB) agricultural program loans.

The dynamism of the various island nations' policy reforms provides an excellent opportunity for the CAD project to reinforce the political will of the region's governments and to contribute to the further economic development of the South Pacific. USAID, via

CAD, is strategically placed to assist the private sector in responding to these reforms and to help to ensure that they work.

E. The Constraints to Increasing the Value of Agricultural Exports

Based on the advantages outlined above, a modest trade has developed, mainly to Australia, New Zealand, North America, and more recently to Japan (See Annex B). Yet the overall export diversification performance has been below expectations. Marketing, which includes quality and continuity of supply, and not markets per se, has proved to be a major constraint to the growth in high value horticultural export development from the Pacific islands. Contributing factors have been the adverse impact of direct government involvement in marketing, inadequate institutional and infrastructure support, excessively high air freight charges, lack of marketing information, and in many cases problems associated with land availability and tenure. These constraints are discussed in detail in Annex E. In this environment private investment has been slow to materialize, and management and marketing expertise has not been developed.

Some of the specific constraints that CAD will attempt to ameliorate are presented briefly below.

1. Poor quality and continuity of supply: For high value exports, quality and continuity of supply are the hallmarks of success, even more important than price competitiveness. Attempts have been made to develop export industries based on small exporters securing supplies from farmers in an informal, ad hoc fashion, without any quality standards being imposed. In other situations parastatal marketing bodies have tried to develop fresh produce exports. Both approaches have failed to achieve the quality and continuity of supply demanded by the market. The economic analysis has shown that the gains from improving quality can be extremely high (See Annex I). With the high costs for freight and packaging that must be met regardless of quality, even a modest increase in the price received in the export market can have a dramatic effect on net returns to the industry. CAD response: establish industry-wide market driven standards, change practices that affect quality, and work with government on the policy environment to ensure that industry can enforce these standards.

2. Adverse impact of direct government involvement: Government and statutory agency involvement in produce export marketing has been lackluster and probably has had a negative influence on long term agricultural exports. A series of case studies recently undertaken by the Pacific Islands Development

Program (PIDP) show government agencies to be particularly inept in handling fresh produce export. The case of the government operated fumigation facility at Fiji's international airport illustrates the point.

> "In 1989, for two months at the apex of the papaya flush, it (the fumigation facility) was unserviceable while waiting for minor repairs by the Public Works Department. This situation caused chaos for the papaya and other horticultural export industries situation and further undermined Fiji's reputation as a reliable supplier. These facilities continue to be unreliable."
>
> Source: Fresh Fiji Papaya: The Do's and Don'ts of Export Development, Eaton C.S. 1989.

With industry operating these facilities, government will no longer be the focal point for criticism when the facilities break down or are not operating properly. The export industry becomes responsible for its own destiny and has a direct vested interest in making things work.

Industry operation of quarantine treatment facilities and government certification is a component of all successful horticultural industries worldwide. This is now recognized by the Fiji government. CAD response: provide organizational and operational assistance and training for privatization of commercial export businesses and activities and quarantine facilities.

3. Inadequate infrastructure support: The key infrastructure needs for fresh produce exports are air cargo capacity at reasonable rates and post-harvest treatment facilities.

- Air cargo capacity currently is insufficient to allow for the development of large industries. However sufficient capacity already exists to establish a significant industry in the context of a small Pacific island economy and this capacity will expand with the expected growth in tourism. A brief review of air cargo capacity is presented in the attached economic analysis (Annex I). However, freight rates and capacity coordination are major problems. CAD response: provide information to industry and governments to enhance their bargaining position with airlines, in collaboration with MARC, as part of their regional policy dialogue.

- Quarantine treatment throughout the region is undertaken in obsolete fumigation facilities operated by government departments (see the example in section E 2). Ethylene

dibromide (EDB), the fumigant used for fruitfly treatment has, or is in the process of being deregistered for all major markets. Thus it is urgent that alternatives be found if the Pacific islands are to continue to export, let alone approach the export potential of these products. CAD response: carry out research and technology transfer on non-chemical treatments in the Pacific islands; train quarantine treatment operators and certifiers; establish quarantine protocol; and establish a commercially operated treatment facility (all by USDA).

4. Management: In terms of entrepreneurial and management experience, Pacific island farmers, by and large, are ill- equipped to make the transition to modern commercial export orientated agriculture. While the traditional extension arrangements have been adequate for copra and stable semi-subsistence production systems, they have proved to be unsatisfactory in the promotion of crop intensification and high value export diversification policies. The traditional Pacific island plantations gave no attention to training at any level. They operated on minimal technical input, with the labor force not expected to know anything other than how to wield a bush knife and harvest crops. Furthermore, there were no training institutions geared toward providing the necessary skills for modern management. The advent of new high yielding varieties, the demands for quality produce and the need for export diversification has meant that comparatively sophisticated management, supported by a stable labor force with necessary skills, is required. CAD response: improve the organizational aspects of enterprises and, provide management training programs.

5. Land availability and tenure: Large areas of land are usually not available for new agricultural export ventures because of prevailing smallholder production systems, customary land tenure arrangements, and in some cases physical land shortages. The outright purchase of land is seldom an option and leasing opportunities are limited to situations were customary land has been legally registered. The inability to use land as collateral has been a major constraint in obtaining credit. CAD response: CAD does not expect to have any direct impact on land constraints other than to encourage ongoing programs of land registration which open up land for leasing. However, the project has been designed with the prevailing land constraints as a given. Overseas investment in new land development will not be sought whereas joint venture partners in processing and export marketing will be encouraged. The emphasis is on intensive crops which have relatively low land requirements and on activities that increase the incomes of farmers *in situ*. CAD will facilitate the establishment of producer-owned companies which will permit the flow of bank credit to growers who can't use land as collateral.

6. Inadequate regional institutional support for commercial agriculture: The research and extension orientation of the ministries of agriculture, and the teaching curriculum and research agenda of the regions agricultural colleges and universities, are not geared to the needs of the commercial agricultural sector. Furthermore, there are no training institutions geared to provide necessary skills in modern management required for successful export agriculture. CAD Response: provide support to the University of the South Pacific (USP) to re-orient itself to commercial agriculture, especially in its research and outreach programs, and assist NGIP in PNG to develop a sustainable regional private sector management training capability.

7. Lack of marketing information: There is sufficient information in most South Pacific countries on how to grow crops to achieve maximum yields. However, there is too little essential information available on produce market enterability requirements. CAD response: publish quality control manuals for root crops, fruits and vegetables, and nuts and spices so as to improve the marketability of the products in specific markets.

8. Inadequate legal and institutional environment: Pacific island exporting industries, with the exception of Papua New Guinea's major commodities, do not have the capacity to establish and enforce quality and grading standards. Self-regulation is necessary if these industries are to prosper. CAD response: work with industries and governments toward the adoption of industry established and regulated quality and grading standards; advise on legislation needed to support this effort.

F. A New Approach to Agricultural Development:

Despite numerous policy pronouncements from donors, external assistance has done little to accelerate private sector development in Pacific island agriculture. At worst, some cases past donor project assistance has actually weakened the position of the private sector by requiring the direct involvement of government agencies in production and marketing activities (See Annex E). CAD will break away from this tradition by working directly with agribusinesses and commercial industry associations to foster agricultural development through increased high value crop exports.

II. PROJECT DESCRIPTION

A. Goal and Purpose

The goal of the project is to increase economic growth in the agricultural sector, based on private enterprise development.

The purpose of the project is to increase the value of agricultural exports to niche markets. This purpose is in complete accord with the Regional Development Office (RDO)/South Pacific (SP)'s recently approved Regional Strategy Update of November 1991. The value of exports will be increased through improvements in quality, continuity of supply, and marketing linkages. CAD is also directed at enhancing the capability of the private sector to respond to the improved policy environment that has been evolving in most South Pacific nations.

B. Overview

The private sector organizations which will be the focus of this project are those businesses with sufficient producer ownership or participation to result in producers realizing a significant portion of the benefits earned by the industry. The term "enterprises" used in this PP includes producer-owned companies, cooperatives, and industry associations.

An illustrative list of the producer businesses now in existence or likely to be formed (indicated in quotes) during the life of the project with which CAD might deal includes:

Producer-Owned Companies

- New Guinea Island Produce Ltd. - fine flavor cocoa and other produce.
- Tropical Food Products (TFP) (Fiji) Ltd. (in privatized form) - processed ginger.
- Papua New Guinea, Fresh Produce Development Company - fresh produce from the Highlands.
- "Fiji Cocoa and Vanilla Ltd." (May be formed by privatization action).
- "Solomon Islands Nuts Ltd." (a potential opportunity for a ngali nuts industry and company to form).

Cooperatives

- Friendly Islands Marketing Cooperative (Tonga) Ltd. - vanilla and other produce.
- Lomaivuna Marketing Cooperative (Fiji) Ltd. - immature ginger for processing and other produce.
- Tafea Cooperative (Vanuatu) Ltd. - potential for expansion into root crops and spice marketing.
- "Savai'i Banana Grower Cooperative (W. Samoa) Ltd." (government is promoting the formation of a cooperative).

Industry Associations

- Fiji Fresh Ginger Exporters Association (FFGEA).
- Fiji Fresh Produce Exporter Association (FFPEA)
- Syndicate D'Agricole - an umbrella organization for a number of Vanuatu industry associations.
- Vanuatu Plantation Support Association (PSA) - management support and possibly pepper marketing.
- Papua New Guinea Spice Growers Association (PNGSGA).
- "Western Samoa Taro Exporters Association" (potential for this to be formed).
- "Fiji Cut Flower Exporters Association" (potential for this to be formed).

In part, the CAD project is designed to build on the experiences learned from the A.I.D funded and successful Friendly Islands Marketing Cooperation Project in Tonga (See Annex G). However, whereas the FIMCO project involved an intensive amount of technical assistance to build a business from scratch, the CAD project will usually work with more established enterprises. In some cases this will include assistance to transform an existing association into a business that focuses on improving the quality and profitability of exports. In others it may be related to assisting a government owned business or activity to become privatized.

The project has two broad components composed of nine activities: the first component is concerned with improving enterprises, and the second component with improving products.

Component A: Strengthening commercial exporting enterprises

1. Privatizing government and parastatal export marketing operations and the operation of quarantine treatment facilities.

2. Improving organizational and operational aspects of enterprises.

3. Identifying business expansion opportunities.

Component B: Improving product competitiveness

1. Establishing industry standards.

2. Changing pre- and post-harvest practices.

3. Introducing new quarantine treatments.

4. Introducing new processing technologies.

5. Researching commercial problems and opportunities.

6. Distributing information to enterprises.

C. Component A: Strengthening Commercial Exporting Enterprises

1. Privatising parastatal and government agribusiness activities

Two types of privatization activities will be addressed by CAD: export marketing businesses and the operation of quarantine treatment facilities.

a. Export marketing businesses

CAD's long term advisors will provide privatization policy advice and short term advisors will provide specialized assistance in situations where viable grower-owned agribusinesses can replace government-owned operations. Of particular interest will be those situations where a grower-owned company could make substantial improvements in the existing government-owned operations through increased production, quality improvements and cost reductions.

The government of Fiji have expressed interest in privatizing three commercial activities. These are expected to be the initial

focus of CAD. Privatization actions in other countries for other products will take place in the later years of the project as identified and requested.

The processed ginger industry. All young ginger processing (brining, syruping and crystallizing) and marketing is currently undertaken by Tropical Food Products (Fiji) Limited, which is 100% owned by the National Marketing Authority (NMA), which itself is 100% owned by government. The objective is for an orderly transition of this parastatal company to a profitable grower-owned company. Notes on how this privatization could proceed are presented in Annex L.

Cocoa marketing. The NMA has the only license to export Fiji's cocoa. CAD's help to facilitate privatization of the cocoa industry might include a short term consultant from the successful cocoa industry in PNG. This person would provide advice on the structuring of the privatized business, marketing quality standards and enabling legislation.

The vanilla industry. A significant portion of the industry is supported through the curing and marketing activities of the Ministry of Primary Industries (MPI). Proper harvesting and marketing of vanilla is essential if a successful industry is to be developed. Much of the vanilla is grown in the same areas as cocoa, sometimes by the same farmers. Cocoa and vanilla might be efficiently marketed by a single grower-owned business.

b. Privatization of quarantine facilities.

Installation of appropriate quarantine treatments for fresh produce which is operated by private industry will be a major output of the CAD project. The private sector operation of high temperature forced air (HTFA) treatment facilities will entail a fundamental change in the role of government from "operator" to "certifier". This is expected to produce major benefits to both industry and government. The industry will then have control and responsibility for proper operation and maintenance of treatment facilities. The shift of responsibility may well spell the difference in the development of successful industries. CAD will provide organizational and operational technical assistance and training to assist in the privatization of quarantine facilities and operations. The initial emphasis will be on Fiji but, depending on funding, will involve other countires.

2. Improving Organisational and Operational Aspects of Enterprises

a. Organizational and operational advice and assistance to enterprises

The project will provide the following inputs to selected enterprises: (i) technical assistance by the long term expatriate agribusiness advisor, the two local management resource persons, and short term specialized help as needed; (ii) a limited amount of office equipment and quality control equipment; and (iii) management training at NGIP in PNG, regional workshops, and study tours. Some of the enterprises which might be assisted include:

In Fiji with the privatized cocoa marketing and ginger processing industries. Assistance will be required in the establishment of new by-laws, operating procedures, and central services (purchasing, marketing and accounting).

In Fiji with the fresh ginger exporting industry. The Fiji Fresh Ginger Exporters Association has been working to improve the quality and thereby the price for Fiji's fresh ginger, e.g. establishment of minimum grading standards and prices for export ginger, the establishment of a self-assessment program to fund a field extension advisor who works with the growers, and the provision of financing for growers.

As part of the CAD program to improve ginger quality and sustainability, the FFGEA has indicated a willingness to take the following steps:

- bringing in the growers as equity owners of the export businesses;
- increasing the self-assessment to provide for funding of a second field extension officer;
- establishing export grades for fresh ginger;
- considering the export of Fiji's ginger under a single label; and
- working more closely with the banks so as to access additional funding.

In Fiji with the Fiji Fresh Produce Exporters Association (FFPEA). This association operates primarily as an industry spokesperson. However, as a part of the CAD project they are expected to acquire and operate the HTFA quarantine treatment facility which the project will finance. In addition, they expect

to undertake some quality control and field directed quality improvement for which CAD may provide some short term TA support activities. All of this will require that they reorganize to operate as a business. CAD advisors will help FFPEA with the drafting of by-laws and operating policies.

In Vanuatu with Syndicate D'Agricole. This farmers' association currently has over 300 members covering a number of industries and has a small farm supply business. They are interested in expanding into marketing operations for non-traditional export crops such as vanilla and yams, and in expanding their farm supplies business. They are also expecting to establish industry sub-groups to represent each of the major activities of their members. These moves will entail a major shift from an organization dependent upon voluntary labor to a business with paid employees. The project inputs will help facilitate these changes. CAD may also provide assistance to some of the Syndicate D'Agricoles member associations such as the Plantation Support Association (PSA) as the government has requested it to enter into black pepper marketing.

In Solomon Islands with ngali nuts. In the latter part of this project, organizational and operational assistance may be provided to help establish a producer-owned ngali nut industry in the Solomon Islands (also possibly in PNG and Vanuatu) if a simple nut cracker can be designed under activity five of component B below.

In PNG with New Guinea Island Produce Ltd. This is a well established and large (by Pacific island standards) producer owned company that is involved in farm management, processing, and marketing. Cocoa is NGIP's main product, for which it has developed a superior field and processing quality control system which obtains a significant price premium. The company has also diversified into other products and activities.

There is considerable potential in the East New Britain Province (ENBP) for NGIP to expand into tropical fruits. Trials of Hawaiian "Sunrise" papaya have been planted by NGIP. These have produced encouraging results, although disease problems will need to be overcome before major commercial development can proceed. CAD may provide NGIP with a short term horticultural specialist to facilitate development of an ENBP tropical fruit industry and short term technical assistance in papaya and guava processing once a UHT coconut cream facility has been established. CAD may later work with other export industry groups in the Province, namely the Papua New Guinea Growers Association (PNGGA) and the Papua New Guinea Spices Association (PNGSGA). If additional funding becomes available CAD will look to producer enterprises in other regions, such as the Papua New Guinea Fresh Produce Development Compnay in the Highlands.

In Western Samoa with the taro industry. Taro is Western Samoa's most important agricultural export. The marketing advisor working with USP at the Alafua Campus will have as a primary objective working with the taro exporters to form an industry association. The association, with assistance from the CAD advisor, would also be expected to address quality standards, pest and disease problems and marketing. The association would become the conduit for focusing and directing USP's taro research, including the problems associated with the introduction of the new improved variety "Alafua Sunrise".

b. Regional training capability operated by the private sector.

The objective is to establish within the region training programs in commercial agricultural management and marketing which are provided by the private sector. NGIP has a potential and interest in becoming a regional training center. The justification for utilizing NGIP is presented in Annex M. The expectation is that this will be a commercially sustainable venture, and that future participants (or their sponsors) will pay sufficient fees to cover the cost of the program and to provide an adequate return to NGIP. It is also expected that the training will provide substantial credit towards a diploma in agribusiness by the USP or the University of Papua New Guinea (UPNG).

The project would provide the following inputs to NGIP to build up this training capability: technical assistance, financing for curriculum preparation, and facilities upgrading. After the capability is established, the project's contractor will enter into a sub-contract with NGIP to present an eight-week training program for management personnel from other enterprises in PNG and the South Pacific.

As a crucial part of the training program there will be follow-up assistance provided by NGIP and CAD staff, directed at working with the participant's enterprise.

The Courses: The following courses will be developed and presented by NGIP with CAD funding and technical support. They will be specific "hands on, how to do it", courses of the type normally presented by businesses for their own employees.

- The Cocoa Industry - Production management, smallholder services, quality control, input supplies, processing and marketing. This course will also highlight diversification in the context of a coconut/cocoa economy. This first course, which will be sponsored twice by CAD, is expected to become a core program that NGIP will continue to offer on its own, at least

annually. The format is expected to serve as a model for the subsequent courses.

- The Spice and Nut Industry - Securing supplies, quality control, processing, and marketing. This will be the second course sponsored by CAD and will be for participants from businesses involved in the production and marketing of spices and nuts for exports. Core resource material will be spice and nut quality control manuals that will be produced under CAD by USP-Alafua. The marketing coordinator will be a resource person for this course.

- Root Crop Exporting- Securing supplies, quality control, processing and marketing. Participants will be private sector persons from businesses involved in the production and marketing of root crops for export. The course will utilize the root crop quality control manual produced under CAD by USP-Alafua and will be supported by resource persons.

If additional funding becomes available, a fourth course for fresh produce exports will be supported. It is expected that the venue for this course will be Fiji, the largest exporter of fresh produce. It will also be held to coincide with the introduction of the HTFA treatment facility in Fiji.

3. Identifying Business Expansion Opportunities

Since the CAD and MARC projects will assist private enterprise in the agricultural sector they will be complementary as follows:

- CAD is designed with a primary focus of helping industry-owned agribusinesses to overcome organizational and quality control problems, leading to increased quality and value of exports.

- MARC is designed to work with businesses after they demonstrate the potential or size to access foreign capital, technology, information or markets. While MARC will also work in the agricultural sector, it has a more general mandate that also covers non-agricultural export industries.

Both CAD and MARC personnel will keep each other fully informed of their project activities so as to avoid possible conflicts. MARC and CAD will work together on such areas as: identifying opportunities for business expansion; changing the policy and regulatory environment; and distributing information to enterprises.

Some illustrative examples of possible areas of cooperation in identifying business expansion opportunities include:

Ginger puree: Fiji is currently exporting reject ginger to the West Coast of the United States of America (USA) to be processed into ginger puree. If ginger puree develops a significant market it may be appropriate to process the puree in Fiji. CAD staff would work on the project formulation with MARC providing assistance on identification of overseas investors.

Flowers: An example of an activity that could go from MARC with later CAD involvement might be in the cut flower export industry which is in its infancy in Fiji. In this instance MARC might provide assistance in locating investors and markets and in negotiating freight rates to facilitate development of the industry. However, as the industry grows the exporters might seek assistance from CAD to increase their supply of flowers from smallholder.

Ngali nuts: The CAD project will work to develop a low cost nut cracker. Should this be successful and the market continue to look promising, MARC and CAD might work together by helping local businesses to access the overseas processing, packaging, promotion, marketing and capital necessary to develop the industry.

Organic coffee: PNG is currently exporting coffee in bean, roasted and ground form. A couple of the larger firms, which work with networks of smallholder, are attempting to break into the overseas organic export market. To do so, among others, they need to establish their "organic" credentials internationally, and then to identify feasible niche markets. CAD services could provide the information and expertise needed to inform them of U.S. certification requirements for meeting "organic" labeling criteria in the U.S. and to determine if, e.g., Australian "organic" criteria could be accepted in the U.S. or Pacific Rim markets. This CAD assistance could also include technical assistance on post harvest handling and packaging requirements which must be met for the crop to be labeled "organic" in the U.S. Once the product is up to "organic" standard within PNG, MARC could become active in identifying niche markets and providing U.S. business contacts needed to effectively market the organic coffee in the U.S.

Kukui nuts: In Hawaii kukui nuts, that are processed into premium priced body oil, are in short supply. Kukui grows wild in Tonga and other Pacific islands. There is scope for developing a processing and marketing joint venture with Hawaii that would require CAD and MARC involvement.

D. COMPONENT B : Improving Export Competitiveness of Products.

1. Establishing Industry Quality and Grading Standards

A major focus of CAD is to work with exporting industries in the region to obtain better returns through the adoption of better quality control and grading standards. The CAD marketing advisor will work with the USP-Alafua Institute for Research, Extension and Training for Agriculture (IRETA) to publish three export marketing manuals for commercial industry, covering root crops, fruits and vegetables, and nuts and spices.

The manuals will help to emphasize that quality control and marketing begins on the farm. However, it is not likely to have a significant impact on existing industries until it is followed up with strong efforts to get industries to adopt new practices -the subject of the next two activities. The manuals will be sold at an affordable price to help pay for the cost of preparation and printing.

CAD will also provide technical assistance and training to enterprises in the following export industries to improve their quality control, grading and marketing:

Fiji: Ginger, cocoa, vanilla, papaya, and fresh vegetables.

Western Samoa: Taro and possibly bananas.

Similar opportunities exist in other countries and there may be need for CAD assistance later, if requested, depending on the availability of funding.

Papua New Guinea: Spices, and possibly fresh produce.

Vanuatu: Yams, kava, pepper, squash, vanilla and, nagai nuts.

Solomon Islands: Ngali nuts, and probably yams.

Tonga: Vanilla, squash, kukui nuts and fresh produce.

The CAD long term advisors will be working with industries and governments toward the adoption of industry established and regulated quality and grading standards. The three USP manuals will provide a basis for all of the above work.

Fiji has requested specific policy assistance from CAD in the preparation of enabling legislation for the ginger, fresh produce

and cocoa industries to establish and enforce quality and grading standards. Similar advice is being sought by Vanuatu for the future development of a fresh produce export industry.

2. Changing Pre- and Post-Harvest Practices to Improve Quality

Once industries have adopted quality and grading standards, implementation of the standards will be by CAD advisors helping enterprises to work with the farmers to insist that strict practices be adopted for export produce and to improve the post harvest practices from the farm to the overseas market.

Examples of some of the market driven requirements that must be met for some crops are:

Site selection - e.g. for fruit fly host crops, other fruit fly host plants must not be in the vicinity.

Site preparation - e.g. in the ginger industry the desired size of the marketable product determines the spacing of the plants.

Seed selection - the market usually determines the varieties of seeds, that may be used.

Planting date - this is determined by backing up from when the produce is needed in the market and is not determined by when the farmers believe they can achieve maximum yields. (e.g. squash to Japan).

Introduction of integrated pest management (IPM) and other environmentally sound pest control methods - to meet pesticide residue requirements of importing countries.

Harvesting - both the date and the time of day (to avoid heat build-up) will be determined by market considerations.

Transportation and packing conditions - minimum conditions must be met for most markets.

Some other market driven post-harvest standards are: inspection and grading; quarantine treatment; cooling and holding requirements; and packaging materials.

These factors will be highlighted in the USP quality control manuals, and in the quality standards CAD will help industries establish.

3. Introducing Quarantine Treatments

Quarantine treatment (QT) technology transfer under CAD will emphasize HTFA treatment for fruit flies but will also consider other appropriate treatments, such as hot water immersion (HWI) for nematodes in root crops, and for improving the quality and shelf life of bananas.

CAD will facilitate the transfer of technology in two stages, (See Annex F for details):

- Stage 1: The immediate priority is for a concerted research program to test and certify HTFA units under the fruit fly regimes prevailing in the different Pacific islands. In Fiji there is now sufficient information available on the species of fruit flies present, their distribution, host range, and quarantine importance to importing countries thanks to the South Pacific Commission (SPC)/Food and Agriculture Organization (FAO) Regional Fruit Fly Project (RFFP). It will be a year before Tonga will be in this position, and probably at least two years before Western Samoa can begin researching QTs. Vanuatu, which unfortunately is not part of the RFFP, has just initiated its own fruit fly collection program. With some assistance from CAD, Vanuatu should be in a position to commence QT research for fruit flies towards the end of the project period. However, some work with HWI treatment for yams is expected at an earlier stage.

As QT research and development studies are completed, the data will be submitted for review by the regulatory agency in each country targeted for export. Furthermore, statistics required to show quarantine treatment efficacy differ among countries. Thus in the first year of the project a United States Department of Agriculture (USDA)-Animal and Plant Health Inspection Services (APHIS) official will be brought to Fiji, Tonga and Western Samoa to identify quarantine problems and acceptable research data and quarantine research statistics for export commodities and quarantine treatments. These visits, where possible, will be coordinated with regulations personnel from Australia, New Zealand and possibly Japan.

- Stage 2: With importer certification of treatment facilities obtained, the next step is to train local people in the use of the technology. This process will commence in Fiji. CAD will provide assistance in meeting the capital cost of a treatment facility including initial technical support (TA and training) for the export industry to operate these facilities.

Industries will be required to develop a cost recovery plan through which exporters will pay the real costs of operating and replacing the QT equipment: this is to ensure that the equipment is maintained in good running order, that treatments follow prescribed quarantine protocols, and that they meet fruit quality

standards.

Research will be carried out on HWI treatment for nematodes in yams under CAD. Should HWI be proven successful it would open up the potential for a significant increase in yam exports, particularly from Vanuatu to Australia. If this is the case and should funding permit, CAD will follow steps similar to those being followed for introduction of the HTFA treatment.

Training for both stages will be provided through study tours to Hawaii and by in country training. A regional workshop on quarantine treatments is planned for the end of the project period. All training will be directed at both the private sector "doers" and government "certifiers."

4. Introducing New Processing Technologies

Two needs have initially been identified by industries in the region where relatively low cost new processing technology equipment would greatly benefit the industry. Other technologies may be identified during the course of CAD.

Taro washer: Countries importing taro from the Pacific islands (New Zealand and Australia) and potential customers (the USA) all require that the taro be free of dirt. It is extremely difficult to meet these standards with the present hand cleaning methods and under the pressure of time to meet shipping schedules.

Some work has been done in Hawaii on the design of a taro washer. The CAD project may finance additional design work to meet the needs of the Samoan taro industry. Should this prove successful CAD may also finance the manufacture of a washer for placement with an appropriate industry enterprise in Western Samoa.

Since both Tonga and Fiji export sizeable amounts of taro, they may adopt the taro washer once it is developed and proven.

Ngali nut cracker: The ngali (canarium) nut is an almond shaped nut found throughout the Pacific that has been identified to have considerable niche market export potential. The shell is, however, extremely hard to crack. To date no mechanical means of assisting the cracking process has been developed. While the tree is common throughout the Pacific, the best varieties are found on the densely populated islands of the Solomon Islands and Vanuatu.

Once a cost effective nut cracker is developed under CAD, the project will promote its introduction as described in the organizational and operational assistance (See section C2).

5. Research on Commercial Problems and Opportunities

a. Market research

This activity is a central focus of the MARC project with which CAD will link. Beyond broad market identification and market intelligence studies, more detailed market and marketing development assistance is needed for selected products. These studies will be largely confined to situations in which an existing product is available to be tested in the market, so that practical assistance in packaging and promotion may be provided.

The following are examples of industry identified market studies:

- specialty markets for Pacific island coffees, including the prospects for developing a jointly promoted South Pacific coffee pack;
- the development of niche and tourist markets for spices;
- the markets and marketing of indigenous nuts from the Pacific islands; and
- the herbal market and marketing of kava.

b. Industry focused research

During the design of CAD, industry leaders often pointed out problems and opportunities which require time to study. In most cases these problems and opportunities have not been addressed by government or university research programs, even though the requirements are often quite modest. Currently, however, there is a lack of a mechanism for incorporating commercial industry needs into the USP's research agenda. To create this mechanism and to help reorientate the research agenda, CAD will support graduate research assistants to carry out research on industry identified problems and opportunities.

The hiring of graduate research assistants (GRAs) to conduct the industry identified research projects serves the two-fold purpose of removing industry identified barriers to marketing, and of bringing researchers into the commercial sector. These contacts will be important to their future employment in the region.

USP has already begun to reach out to industry through organization and support of industry identified and sponsored workshops and training sessions. The facilities at Alafua provide an adequate setting for bringing industry people together to work in areas such as marketing and quarantine requirements. The project will capitalize on these facilities by sponsoring workshops which contribute to the goal of increasing the value of

agricultural exports.

6. **Distributing Information to Enterprises and Producers**

The CAD project, in response to a USP proposal, will finance the following information dissemination efforts by USP:

- the reorientation of both the agriculture information network and the Agricultural Liaison Office (ALO) system toward commercially viable export crops as opposed to their traditional emphasis on food crops;
- the drafting and publishing of quality control manuals for high value niche products (detailed in Section 2a above entitled Establishing Industry Standards); and
- the sponsoring of workshops which focus on commercial agriculture.

CAD will provide a long term marketing specialist coordinator to assist USP in this very important reorganization of activities and emphases. The preparation of and implementation of the export quality manuals will provide an initial focus for these activities. The marketing coordinator will also have an outreach orientation and work with export industries throughout the region. The outreach program will include responsibility to work with enterprises on the development and marketing of several Western Samoan commercial crops. This will be in addition to the role of the outreach workers in instruction (in seminars), institution building, and working with graduate and other students towards an emphasis on commercial agriculture marketing issues.

Support to the ALO system will be based on the ALOs establishing contacts with industry, and the establishment of a two-way flow of information which will be the basis for selecting research areas and for the production of a marketing information network. These activities will be specifically related to project goals and objectives. This is a departure from A.I.D.'s previous assistance to the ALO network, which provided full-time salaries and living expenses, and it is essential to the sustainability of the project. The Sustainablilty Assessment by the University of Maryland consultant to the South Pacific Regional Agriculture Development (SPRAD) project pointed to the need for countries to begin to support the ALOs if the system was to continue beyond the life of the project. The countries are now starting to realize the economic benefits of this system, and the larger countries now provide funds to cover salaries.

E. Project Outputs

Prior to the conclusion of the project, the following outputs will be achieved:

(1) Quality standards will be established and adopted by industry for root crops, fruits and vegetables, spices and ginger;

(2) Several export industries and commercial activities now in the public sector will be privatized and at least five associations involved in the export of agricultural produce or products will be strengthened;

(3) Technical packages including more sustainable production methods for ginger will be in operation and new agro-processing equipment will be installed in commercial enterprises;

(4) Quarantine treatment will be researched, and equipment purchased and operated by the private sector; and

(5) The research agenda at USP will be influenced by industry.

(6) The value of agricultural exports increased as a result of project.

The main contractor will be responsible for monitoring these activities and recording progress in quarterly reports.

F. Project Inputs

To accomplish the goals and objectives set forth above the project will supply seven person years of long term technical assistance, complemented by four person years of long term local technical assistance and approximately 40 person months of short term technical assistance. The marketing advisor will be stationed at USP Alafua, and the agribusiness advisor will be located in Fiji. All will be supplied and supported by the prime contractor.

Short term technical assistance will be provided by (1) the prime contractor in areas of specialty, which include ginger quality improvement, processing equipment design, market studies, marketing, curriculum development, and organizational and policy advice; and (2) through the USDA Participating Agency Service Agreement (PASA) in areas such as design of quarantine equipment, establishment of quarantine protocols, quality standards development, and quarantine certification.

The training input includes regional study tours and workshops and NGIP management training of enterprises by the private sector. No long term training is to be funded by the project.

The project will fund the preparation of quality control manuals and market studies, applied research and special pre-feasibility reports, both under the USP grant and the prime contract.

Commodities, financed by the project include (i) quarantine treatment equipment purchased by USDA, including HTFA prototypes and computer monitoring equipment; (ii) some equipment for quality improvement and processing, together with computers for selected enterprises; and (iii) office equipment and supplies for the prime contractor field personnel.

III. IMPLEMENTATION PLAN

Overview: The project will be implemented by three organizations: (1) the USP under a cooperative agreement (grant); (2) the United States Department of Agriculture (USDA) under a Participating Agency Services Agreement (PASA) with USDA Office of International Cooperation and Development (OICD); and (3) a U.S. private contractor under a direct A.I.D. contract. In addition, the SPC/FAO Regional Fruit Fly Project will be collaborating in Quarantine Treatment research. USAID Regional Development Office (RDO)/South Pacific (SP) monitoring and management will be performed mainly by a Personal Services Contractor (PSC) based in Suva, facilitated by RDO/SP's branch office located in Port Moresby, Papua New Guinea (PNG) for activities in PNG. Most funds will be obligated by these contracts and agreements. RDO/SP will enter into non-obligating memoranda of cooperation (MOCs) with the countries where the project will be most active.

A. Major Implementation Actions:

1. Grant to the University of the South Pacific: A.I.D. will execute a cooperative agreement with USP in Suva, Fiji, to carry out the activities described in the project description section; e.g. producing quality improvement manuals, carrying out research, carrying out an information dissemination program, and converting its ALO network towards the support of commercial agricultural activities. The agreement will be based on a proposal from USP dated November 1991, but will not include all activities proposed by USP. The cooperative agreement will be executed by the A.I.D. Regional Contracting Office (RCO) in Manila, based on a Project Implementation Order/Technical (PIO/T) prepared by the RDO/SP.

USP, through IRETA on the USP Campus at Alafua in Western Samoa, is uniquely qualified to provide these inputs because it already is doing agricultural research, preparing information for distribution to the ministries of agriculture, and operating the ALO network in nine countries. By involving IRETA in the project and providing inputs to assist IRETA in changing its orientation to commercial agriculture, the project obtains these inputs at a lower cost and in a more cost effective manner than if these inputs were obtained from outside the region. In addition, the project also strengthens the capacity of a regional organization to continue to provide these services after the project ends. This overcomes one of the constraints described in the project rationale section.

Since the contractor will provide the long term advisor (marketing coordinator) to work with IRETA, the USP inputs will, in effect, be supervised or coordinated by this advisor.

2. PASA with USDA: Under a Participating Agency Service Agreement with USDA, OICD will provide technical assistance, training, collaborative research and commodities in support of the CAD project. The Agricultural Research Service Tropical Fruit Fly and Vegetable Research Laboratory in Hilo, Hawaii will be the key provider of necessary research, design, etc.

The research phase will be done in coordination with the SPC/FAO-funded RFFP, and undertaken at the Fiji MPI research station at Koronivia. Before the site is selected for the quarantine plant, an appropriate enterprise in Fiji must be selected for the operation of the plant on behalf of all fresh produce exporters of Fiji. RDO/SP or USDA will enter into an agreement with the association regarding its responsibilities, eligibility of usage, fees or other revenue earning aspects, etc..

Sections 621 (a), 632(b) and 635(b) of the Foreign Assistance Act authorizes A.I.D. to use the resources of another United States Government (USG) agency when these resources (a) are particularly or uniquely suitable for such technical assistance; (b) are not competitive with private enterprise; and (c) can be made available without undue interference with domestic programs (HB 12, paragraph 1B3b(2)(a)).

ARS is the only organization doing research on new quarantine procedures to replace chemical procedures which are not acceptable for exports to the U.S. The ARS has indicated a willingness to provide these project inputs which are not available from the private sector.

The PASA will be executed by the RCO based on a PIO/T to be prepared by RDO/SP.

3. Contracting: About one half of all project inputs are to be provided by a U.S. contractor. The direct A.I.D. contract will be negotiated and awarded following standard competitive contracting procedures which will be open to U.S. private firms, universities and non-profit organizations. RDO/SP will prepare a PIO/T which the RCO will use as the basis for preparing an RFP. The technical proposal will be evaluated by a team nominated by RDO/SP and appointed by the RCO. The contractor's field personnel will be logistically self-sufficient; i.e., neither RDO/SP nor the U.S. embassy will provide any logistical support, although a limited amount of logistical support will be provided by USP for the marketing coordinator and by the participating enterprises.

4. Memorandum of Cooperation: A non-obligating MOC (sometimes called Memorandum of Understanding or MOU) rather than a project agreement will be signed with each country receiving substantial project inputs (including Fiji, Western Samoa, Papua New Guinea and Vanuatu) to establish the country's agreement for the project to work in that country.

The MOC will represent the government's written agreement on a number of points which are standard provisions in a project agreement (proag); e.g., country contributions, approval to operate in the country, relief from duties and taxes, participation of the government, etc. It also would describe the general magnitude and type of inputs to be provided to the country rather than the line item budget that is common in proags. It should not be necessary to amend the MOU during the life of the project since it is not an obligating document, unless there should be a radical change in the program for the country. However, RDO/SP intends to consult with the governments regularly on progress of implementation and plans for the subsequent year.

RDO/SP is using this instrument for the MARC project and the Fiji component of the PIMAR project. This approach is similar to that used by many A.I.D./Washington centrally funded projects whereby funds are obligated by A.I.D. through a direct contract, but a MOU is signed with each country where the project is to operate independent of a bilateral project.

5. Memorandum of Understanding: Whenever a substantive amount of assistance is to be provided to a single enterprise, either RDO/SP or the contractor will sign a MOU with the enterprise that would describe the following: purpose of assistance, type and quantity of assistance, time period, responsibilities and contributions of the recipient enterprise, and how assistance will be provided. Where appropriate, and as identified in the Environmental Report (Annex K), the MOU will include a substantive agreement to support environmentally sound pre- and post-harvest treatments. The MOU is to serve two purposes: first to insure planning, and second to record the understanding and agreement of the parties.

6. Contracting for PSC for RDO/SP Monitoring: RDO/SP will use project funds for a PSC to provide project management, monitoring and coordination services. Due to the critical shortage of office space in the RDO/SP office facilities in Suva, RDO/SP will use project funds to rent suitable office facilities, hire a secretary and purchase office furniture and equipment as needed so the PSC can work outside the RDO/SP office building. The desirable arrangement, if it can be worked out, would be for the PSC to share office facilities and support services with either the CAD contractor's long term advisor or the MARC long term advisor to be based in Suva.

7. Work Plans: Within two months after the cooperative agreement is signed with USP, USP, in collaboration as necessary with RDO/SP, will prepare a preliminary overall work plan for carrying out all the activities of the agreement. USP will prepare a more refined work plan within two months after the marketing coordinator arrives at Alafua. Thereafter, the USP will update the work plan annually. The workplans will be submitted to RDO/SP for approval.

Within two months after a contract is signed with a U.S. organization, the contractor's Chief of Party (COP) will prepare an overall work plan for the life of the contract and a detailed work plan, including a budget, for the first year of the contract. The overall work plan will be updated annually when the new year's detailed work plan is prepared. The work plans will be submitted to RDO/SP for approval.

8. Pre-Implementation Meeting: After the contract has been awarded and the contractor's two long term advisors are in the field, RDO/SP will arrange a pre-implementation meeting to (a) brief all parties on the project design and implementation plans; (b) discuss activities that might be carried out by the project; (c) exchange information on commercial agricultural opportunities; and (d) plan the cooperation and coordination of the private sector, the governments and the implementing entities, and the MARC project. The meeting would include the RDO/SP PSC coordinator, the MARC project officer, the contractors two long term advisors, and representatives from USP and USDA, as well as regional and local organizations as appropriate. The costs of the meeting would be paid from project funds to the extent that costs are not covered from the contract or agreements.

9. Bumpers and Lautenberg Amendments:

(a) The Bumpers Amendment: Section 521 (b) of the annual Foreign Operations, Export Financing, and Related Agencies Appropriations Act (A.I.D. Appropriations Act) restricts the use of certain foreign assistance funds for agricultural export activities which would have a "significant impact" on the export of U.S. agricultural commodities.

This restriction is not likely to affect the project as it is directed toward increasing the value of exports rather than increased production or entering new markets. Since the niche market products which might otherwise compete with U.S. producers have growing seasons different from the U.S. growing seasons, these products are not likely to compete with U.S. exports. The major markets for island produce is Australia and New Zealand which are not significant markets for U.S. horticultural exports.

In addition, it is unlikely that the volume of exports from any one country or all countries of the South Pacific of any given product would be of sufficient volume to have a "significant impact" on U.S. exports. For example, Cook Islands exported only about $250,000 of papaya in 1988, and Fiji exported about $3.7 million of ginger in 1990. These numbers indicate that the level of production in the South Pacific is so low that even if the region should export to a third country an agricultural product that competed directly with U.S. exports, the export would not have a significant impact on U.S. exports.

(b) The Lautenberg Amendment: Section 521(c) of the annual A.I.D. Appropriations Act prohibits A.I.D. funds from being used for the study and establishment of export facilities in competition with U.S. exports of import-sensitive articles, including textile and apparel articles, footwear. Since the project concerns agricultural products for niche markets and not any of the "import-sensitive" articles, the Lautenberg Amendment would not effect the project implementation.

10. Coordination with MARC: The RDO/SP Market Access and Regional Competitiveness Project (MARC - 879-0018) promotes trade and investment in the South Pacific countries with emphasis on the U.S. markets. MARC's primary focus is on markets and investments in general but is not limited to agricultural products, while CAD's focus is on the quality of production of agricultural exports. The two projects complement each other so coordination by the RDO/SP project officers and by the implementing entities is essential for full success of both projects. The two project officers will exchange information regularly. Periodic meetings, such as the pre-implementation meeting described above, will promote coordination. If the CAD and MARC long term advisors based in Suva could share the same office facilities along with the CAD PSC coordinator, cooperation by these parties would be greatly facilitated.

11. Minority Contracting: Due to the nature of the project, three different organizations will be providing project inputs. It is not feasible to require minority contracting in the cooperative agreement with USP or in the PASA with USDA. Due to the size and nature of the contract for other project inputs, it is not desirable to limit the competition to minority firms. However, the usual requirement of at least 10% subcontracting will be a

requirement in the Request For Proposals (RFP) for the competition.

12. Evaluation: RDO/SP will contract with people, either through an Indefinite Quantity Contract (IQC) firm or individuals by PSC to make two evaluations of the project. The nature of the evaluations is described in Section III E .

B. **Responsibilities**:

1. USP: USP will be responsible for providing the inputs to carry out the major implementation actions (See section III) which will be described in detail in the cooperative agreement. USP will also provide office space and local support for the long term marketing advisor to be based in Alafua, Western Samoa. These will be described in more detail in the cooperative agreement. USP will be responsible for changing the orientation of its IRETA in Alafua towards commercial agriculture to such an extent that IRETA can continue to provide its services with funding (in whole or in part) by the users after the project ends. USP is expected to participate in project coordination efforts with other project entities as appropriate.

2. USDA: USDA is to provide the project inputs (discussed in section II F) which will be described in detail in the PASA, and to assist the countries (both government and private sector exporters) to meet U.S. quarantine regulations. USDA is expected to coordinate its workplan with the SPC/FAO fruit fly project and to assist the South Pacific private sector in establishing quarantine treatments.

3. Contractor: The contractor, in providing the project inputs described elsewhere, is expected to coordinate its work with USP, USDA, and the MARC project personnel. The contractor field staff must be logistically self-sufficient; i.e., RDO/SP will not be providing any logistical support. However, USP will provide office facilities for the marketing coordinator based in Alafua. The commercial agribusiness advisor, based in Suva, will be the contractor's COP for its field operations. The COP is expected to maintain a close working relationship with the RDO/SP staff and the other entities involved with project implementation.

The contractor will designate a home office person to serve as coordinator or backstop officer to provide the usual U.S.-based support functions.

4. Producer Enterprises The organizations receiving substantial assistance will sign a MOU with either RDO/SP or the contractor as described in A.5 above. The responsibilities and contributions of the organizations will vary widely, depending on

the ability to contribute, needs, etc., e.g., one organization might provide local transportation, an office and secretarial support for a short term advisor, while another may be able to provide only the time of counterparts. The project must be flexible in what will be required from the recipient organizations.

5. Governments: The MOC would indicate the government's commitment to the project principles and its willingness to cooperate with project implementation. The MOC would designate a government's authorized representative for the project activities in the country that involve the government. All governments would arrange for customary duty free import privileges, assistance with clearing personal and official effects through customs, and issue necessary permits and visas for all official travel. When project personnel and a government have agreed on privatization or policy reform needs, the government would be expected to cooperate in carrying out the privatization of commercial activities and in making appropriate policy and regulatory reforms.

6. RDO/SP: It is expected that the PSC currently working in the RDO/SP Agriculture and Fisheries Office in Suva, with Project Development and Support (PD&S) financing for project design, will continue working for RDO/SP as project coordinator under the project funding. The PSC will work under the supervision of the USD Agricultural Officer, who will be the project officer. RDO/SP will prepare PIO/Ts for the RCO to carry out the competitive contracting process, to award a cooperative agreement with USP, and to enter into a PASA with USDA.

The RDO/SP project officer, in cooperation with the project coordinator, the contractor, and the MARC project officer will prepare criteria for an organization's eligibility for assistance, approve the MOU with that organization, approve all international travel funded by the project, and the annual work plans.

The branch office of RDO/SP in Port Moresby, Papua New Guinea in the person of its Assistant Regional Director will have daily A.I.D. management oversight on CAD project implementation, cooperation with the PNG private sector and the government, and contractor performance in Papua New Guinea.

C. Coordination

To aid in coordination, of the various project activities and with MARC components, a project review committee will be established. Quarterly implementation meetings will be held in Fiji with the following representatives invited:

RDO/SP	Project Coordinator (CAD)
MARC Representative	Prime Contractor (COP)
SPC Representative	USDA Representative
USP IRETA Director	Private Sector Representative

The role of the project review committee will be to review work plans, to discuss implementation problems and recommend solutions, and to review quarterly progress reports of contracting entities.

The project coordinator and the project officer will be responsible for coordination with other donors involved in assistance to commercial agriculture and in ensuring close cooperation with the Asia and the Research and Development (R&D) Bureau agribusiness projects.

D. Schedule of Initial Major Events:

The proposed schedule of initial events are:-

December 31, 1991	-	Project Paper (PP) completed, project authorized.
	-	Draft PIO/T for PASA with USDA completed and sent to RCO in Manila to negotiate the PASA.
January, 31, 1992	-	Draft PIO/T for cooperative agreement with USP sent to RCO in Manila to negotiate the grant.
	-	Draft PIO/T for competition for direct A.I.D. contract sent to RCO for issuance of RFP.
February 28	-	RFP released by Manila.
March 15	-	PASA with USDA executed, funds obligated.
	-	MOCs signed with governments of Fiji, PNG.
March 30	-	Closing date for proposals. Grant with USP executed, funds obligated.
May 30	-	Work plan for USP agreement approved.
	-	Work plan for USDA PASA approved.
June 30	-	MOC signed with governments of W.Samoa, Vanuatu.
August 31	-	Contract awarded and funds obligated. Mobilization of Contractor begins.
September 30	-	Contractor's two long term advisors arrive at their posts.
October 15	-	Pre-implementation meeting.

An indicative list the project's country components and intended year of implementation are presented in Table 1.

Table 1: **Indicative Country Component Summary And Intended Years Of Implementation**

	STRENGTHENING COMMERCIAL EXPORTING ENTERPRISES	IMPROVING PRODUCT EXPORT COMPETITIVENESS
FIJI	**Organizational and Operational Assistance** - FFGEA (Ginger) (Y1) - TFP (Processed ginger) in privatized form (Y2) - FFPEA (Fresh Produce) (Y3) **Privatization** - Ginger processing (Y1) - Cocoa and vanilla marketing (Y2) **Participation in MGIP Training** - Cocoa (Y2) - Spices (Y3) - Root crops (Y4) - Fresh produce* **Business Expansion Opportunities** Possibilities - Processed ginger - Floriculture - Fruit puree	**Quality Standards** - Ginger (Y2) - Cocoa (Y2) Fresh produce (Y3) - Spices (Y4) **Field Quality Improvement** - Ginger (Y2) - Fresh produce **Quarantine** - USDA/APHIS (Y1) - USDA/ARS (Y1) - Training (Y2) - HTFA Cert. (Y3) - HTFA Commerc. (Y4) **Research and Studies** - USP-Ginger (Y2) - Specialty coffees* - Spices* **Industry Study Tours** - Ginger (Y1) - Floriculture* - Fresh produce* - Spices*
PNG	**Organizational and Operational Assistance** - MGIP (Training) (Y2) - PNGSGA (Spices)* - Highland fresh produce* **Participation in MGIP Training** - Cocoa (Y2) - Spices (Y3) **Business Expansion Opportunities** Some possibilities for East New Britain - UHT coconut cream (Y1) - Fresh and processed fruit (Y2)*	**Quality Standards** - Quality and marketing manuals - Root crops (Y2) - Spices (Y3) - Fresh produce (Y4) **Research and Studies** - Specialty coffees* - Spices* **Industry Study Tours** Spices*

* Depends on project receiving additional funding

WSAMOA

Organizational and Operational Assistance
- Taro growers (Y2)
- Bananas growers (Y3)

Participation in NGIP Training
- Cocoa (Y2)
- Root crops (Y4)
- Fresh produce*

Quality Standards
- Root crops (Y2)
- Fresh produce (Y3)

Quarantine
- USDA/APHIS (Y1)
- USDA/ARS (Y2)
- Training (Y3)
- HTFA Cert.*
- HTFA Commer.*

New Processing Technologies
- Taro washer (Y2)
- HWT bananas*

Research and Studies
- USP industry studies (Y2)

Industry Study Tours
- Bananas (Y2)

VANUATU

Organization and Operating Assistance
- Syndicate Agric (Y2) (incl. PSA)

Participation in NGIP training
- PSA manager (Y2)
- Spice (Y3)
- Root crops (Y4)
- Fresh produce*

Quality Standards
USP Manual
- Root crops (Y2)
- Spices (Y3)
- Fresh produce (Y3)

Quarantine
- USDA/APHIS (Y1)
- USDA/ARS (Y2)
- Training (Y2)
- HWT Cert. (Y3)

New Technologies
- Yam hot water treatment (Y3)
- Nut cracker (Y3)

Research and Studies
- Fruit flies study [a] (Y2)
- USP industry research (Y3)
- Speciality* coffee markets
- Spice markets*

Industry Study Tours
- Fresh produce*
- Spices*

a) A funding source is being sought

SOLOMON ISLANDS

Organizational and Operational Assistance

Possibilities
- Ngali nut export company*
- Other groups (Y4)

Participation in NGIP Training
- Cocoa business (Y1)
- Spices (Y3)
- Root crops (Y4)

Quality Standards

USP Manual
- Root crops (Y2)
- Spices (Y3)

New Technologies
- Ngali nut cracker (Y3)
- Yam H/T*

Research Studies
- USP industry research
- Ngali nut market study*

Industry Study Tours

- Nuts*

TONGA

Organizational Operational Assistance

- FIMCO for quarantine equipment*
- Kukui nuts*

Participation in NGIP Training.

- Spices (Y3)
- Root crops (Y4)
- Fresh produce*

Quality Standards
USP Manuals

- Root crops (Y2)
- Fresh produce (Y3)

Quarantine

- USDA/APHIS (Y1)
- USDA/ARS (Y1)
- Training (Y2)
- HTFA Certification*
- HTFA Commercialization*

New Processing Technologies

- Taro washer (Y3)

Research and Studies

- USP industry studies (Y3)
- Specialty coffee market studies*
- Kukui nuts

Industry Study Tour

- Fresh produce*

IV. COST ESTIMATES AND FINANCIAL PLAN

A. Cost Estimate

1. Long Term Technical Assistance

The project will finance two long term technical assistants: Agribusiness Advisor (Fiji) and Marketing Coordinator (Alafua, Western Samoa) at $200,000 each per annum during the project period. These costs reflect a typical costing situation in Fiji and Western Samoa and they are comparable with other RDO/SP experience and American PSCs in the South Pacific.

The costs include salary, overhead, all the usual allowances and differentials plus per diem. Office space will be provided by the USP for the Marketing Coordinator. The Project Coordinator and the Agribusiness Advisor, both located in Fiji, are expected to share office space.

2. Long Term Local Technical Assistants

Long term management resource persons will be hired locally by the prime contractor for four person years at $50,000 per person year, spread over the first three years of the project period. The costs cover salary, overhead, local travel and per diems and associated expenses. Of the two management resource persons hired, the first will be based in Fiji and the second in Vanuatu.

3. Short Term Technical Assistance

This cost estimates 20 person months for both the contractor and the PASA. The contractor will supply approximately 17 months of expatriate TA (at $25,000/month) and three months of local TA (at $12,000/month). The amount for the PASA is $20,000 per month. These amounts are all inclusive (i.e. salary, overhead, travel, per diem, etc.), based on recent contracts in the South Pacific.

4. Training

Management training: This training consists of four two-month courses in commercial management to be provided by NGIP in PNG at a cost of $540,000. One objective of the project is to build up a regional training capability in enterprise management. Therefore, this cost element includes both (a) strengthening the training capability of NGIP, e.g. curriculum preparation, training materials, facilities upgrading, equipment, and non-NGIP resource persons; and (b) actual costs of the four courses, e.g., course presentation costs, and participants' travel and per diem costs,

less a cost-sharing contribution per participant to be determined by the forthcoming Mission order.

Study tours: This cost consists of sending a total of 25 people to USDA's quarantine facilities to examine quality control and export standards in Hawaii, at an estimated cost of $3,500 per person (includes USDA direct costs for arranging the study tours, air fares, per diems, and miscallenous travel expenses). The participants are expected to share in the costs at a level to be determined by the forthcoming Mission order.

Workshops: Two workshops will be conducted at USP at a cost of $30,000 each (includes rental of facilities and administrative costs plus partial costs of the participants' airfares and per diems). The participants are expected to share in their personal costs at a rate to be determined by the forthcoming Mission order.

5. Research/Information

Marketing research, development of quality control manuals and special reports will be conducted under a USP grant. The estimated budget of $520,000 covers the cost of hiring eight graduate research assistants for two years at an estimated cost of $12,000 per year (includes tuition fees, travel costs, per diem, and in some cases specialist supervision allowances and purchase of minor equipment), preparation of three marketing manuals, production of two or three videos, and strengthening of ALO network links to the commercial sector.

Funds from the sale of manuals will be used to reduce the cost of subsequent manuals. The manuals will be used as part of the course materials and sold to the interested enterprises, public sector institutions and book stores.

6. Commodities

a. Prototype Machinery: A major component is the design and installation of a HTFA treatment facility by USDA. This cost includes design, purchase of materials, and the assembly of the prototype in Fiji (note: training of personnel in the operation of the facility is included in the short term technical assistance to be provided by USDA and in the training study tours mentioned above). The total of the QT commodities component is $350,000. This cost is based on information from the USDA in Hawaii. These treatment facilities will be operated by the private sector and the costs of maintenance and repairs (including depreciation costs) are expected to be covered by the users. Some of the cost of

installation and ancillary equipment will also have to be met by the private sector. The schedule of charges levied is to be worked out between the prime contractor and the associations operating the equipment. The commodities line item also includes $120,000 for the design and construction of taro washer and nut cracker prototype machines.

b. Other Commodities: $80,000 in funds have been included to provide for the quality control equipment and financial monitoring system for some of the enterprises receiving extensive assistance from the project. Office equipment such as computers, furniture and related material for Fiji and Western Samoa offices is estimated at $40,000.

7. Office/Support Staff

$135,000 is budgeted for office costs including rents and related costs in Suva and Apia, and a secretary/accounts clerk in Suva.

8. Coordinator

A PSC advisor, hired at a cost of $200,000 per year for a period of five years, is to be based at the RDO/SP office. The advisor will monitor and coordinate the activities of the project, and assist the RDO to oversee the management of the prime contract, the USP grant and USDA quarantine treatment activities. This person will also provide technical project services. The costs include salary, considerable allowance for travel, overhead, and all the usual allowances and differentials, and reflect the typical costing situation in the South Pacific (comparable with other RDO/SP experience and American PSCs).

The Project Coordinator is expected to share an office space with the prime contractor's Fiji-based advisor.

9. In recognition of the probability that the Asia Bureau Regional Agribusiness Project (RAP) will be authorized in late FY92, and will provide complementary services to those of the CAD project, buy-ins to RAP are anticipated and will come from the "RDO/SP Monitoring" line item in the budget presented in "Table 5."

10. Host Country and Private Sector Contributions

The standard 25% country contribution is not required by this project since it is a regional project, and it is not directed towards any specific country. Therefore, a formal assistance relationship with each country will not be established through a

grant agreement. In addition, the CAD team will work directly with the private sector enterprises.

However, the private sector will contribute towards the cost of the project services by paying a portion of the expenses associated with market research and promotion, training, workshops, seminars, some of the cost of quarantine equipment and quality control. Since the project will be working with profit- making organizations, it is reasonable to expect some of them to share in the costs of some of the inputs.

The USP will provide an estimated in-kind contribution in the form of office space, support for the marketing coordinator at Alafua Campus, and the use of classroom and other research facilities plus the ALO network that is already in existence.

11. Contingency

An allowance of 5% of the costs is set aside for contingencies. A 4% flat rate is allowed for inflation. This amount is regarded as adequate since a number of the inputs are of such a nature that costs can be reduced during the later years of the project period (i.e., management training, processing prototypes, number of publications, duration of study tours, research at USP, etc.).

B. Financial Plan

1. Contractor

Three contract agreements will be executed; one with the prime U.S. private contracting firm; a second under a cooperative grant agreement with USP; and a third under a PASA Service with the USDA.

a. Prime Contractor

It is anticipated that about one half of the project input will be provided by one U.S. contractor, awarded on a competitive basis, under USAID direct contract. It is likely that the contract will be awarded to a relatively large commercial firm experienced with working for the U.S. government, including A.I.D. The financial competence of the contractor to safeguard project funds and provide satisfactory accountability would be a factor in the evaluation of proposals. Quarterly progress reports would include financial data for monitoring the expenditure and status of funds.

Reimbursement to the contractor would be made monthly by checks issued by United States Development Office (USDO) in Bangkok after RDO/SP has reviewed and approved the monthly voucher and supporting documents. No advances would be made if the contractor is a profit-making firm.

b. USP Cooperative Agreement Grant

The USP, a regional educational institution, has received grants worth $12 million over the past 10 years from AID under the SPRAD project. Therefore it is familiar with AID's financial responsibility and reporting procedures. In addition to internal audits, the USP financial records are annually audited by a private auditing firm.

Even though no A.I.D initiated audit has been conducted for the SPRAD project, an evaluation in 1990 did indicate that the A.I.D. funds are being properly managed and utilized. In addition, the quarterly progress reports submitted by the USP appear to be sound in the management and allocation of A.I.D. funds. The RDO/SP controller's office is also in the process of conducting an assessment of the SPRAD project.

The CAD project is to be included in the annual audits and copies of the annual audits are to be provided to the RDO/SP. Funds have been included in the project budget for audit and evaluation of the USP grant. A mid-term evaluation will be carried out.

Quarterly advances and liquidations will be done based on quarterly progress reports, including financial data submitted by the USP. The RDO/SP Project Officer and Controller will review the progress reports before approving any advance of funds.

c. PASA - USDA

A Participating Agency Service Agreement will be signed with the USDA. A percentage (to be determined) of the total contract will be advanced for each line item following negotiations between A.I.D. and USDA. On submission of vouchers and procurement documents, the A.I.D Controller will review and certify payments following administrative approval by the Project Officer.

2. Audits and Evaluations

Primary responsibility for project and contractor audit is with the Regional Inspector General's Office in Singapore. Funds are included in the budget for three independent external audits by private firms (two audits for the contractor and one for the USP grant) as needed during the life of the project. The budget a

includes funds for two formal evaluations. RDO/SP will contract and pay directly for the evaluation.

3. RDO/SP Monitoring

RDO/SP will pay directly the Project Coordinator assisting the USDA Project Officer by checks issued by USDO Bangkok.

4. Justification for Local Cost Financing

a. Although the two long term advisors are expected to be Americans under contract with a US contractor, a number of costs are local by nature (local meaning South Pacific region). These include travel within the South Pacific Region since no American Flag Carriers are available, housing and utilities, per diem, office costs, furniture and equipment, and educational allowance. The best estimate is that this will constitute 35% of the cost of each Advisor.

b. All the costs for the local technical assistants are expected to be local with some minor overhead costs by the contractor.

c. Only per diem and the cost of travel within the region will be local.

d. Most of the training costs are local, since management training will be provided in PNG under a local sub-contract, except for some of the technical assistance and resource persons, plus the overhead of the contractor. Travel for the study tours will be on non-U.S. Flag Carriers and both the workshops will be held within the region and require local travel, services and supplies.

e. The Cooperative Agreement to USP is expected to finance only local costs. A justification for requesting applications only from USP is expected to be approved in the project authorization.

f. A small portion of the costs of the prototype machinery will be for the local services and commodities only available locally; example, a building for the heat treatment plant.

g. Nearly all of the office supplies, overhead and support staff will be local with the exception of some office equipment.

h. Approximately 60% of the monitoring and coordination costs will be local, comprising housing and utilities, office costs, regional travel, per diem and other allowances.

i. Part of the costs of evaluation would be local; e.g., travel within the region and per diem.

j. Audits probably will be done by local accounting firms as the contracts would be too small to be given to U.S. firms ($20,000 each).

k. Since about 50% of the costs for all budget items are local costs, the same ratio is applied to the contingency and inflation allowances.

Table 2: BUDGET SUMMARY ($000)

ITEMS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
1. LTTA -7 PY	200	400	400	300	100	1400
2. LTLTA - 4PY	25	100	75			200
3. STTA	40	300	262	180	80	862
4. TRAINING	95	180	215	180	30	700
5. RESEARCH/INFORMATION	30	210	190	90		520
6. COMMODITIES	70	110	350	60		590
7. OFFICE/SUPPORT STAFF	15	30	30	30	30	135
8. COORDINATOR	165	200	200	200	200	965
9. EVALUATION			50		30	80
10. AUDIT	30				30	60
11. CONTINGENCIES (5%)	34	77	89	52	25	277
12. INFLATION (4%)	25	59	68	40	19	211
TOTAL	729	1666	1929	1132	544	6000

NOTES

1. Under long term technical assistance, a Marketing Coordinator (Alafua) and an Agribusiness Advisor (Suva) will be hired.

2. Local long term technical assistant at $50,000 per year will support two advisors, one each based in Fiji and Vanuatu.

3. Under both PASA-USDA and Prime Contractor, short term technical assistance will be provided.

4. Training includes management, study tours and workshops for quarantine treatment commercial agribusiness and marketing. The subcontract to NGIP and sponsorship of participants is included under management training.

5. University of the South Pacific will implement this activity under a cooperative grant agreement.

6. The PASA-USDA will supply and install a High Temperature Forced Air (HTFA) unit for Fiji and through the Prime Contract, other processing prototype equipment will be identified and installed in the region.

Table 3: DETAILS OF THE BUDGET SUMMARY ($000)

ITEMS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
1. LTTA -7PY	200	400	400	300	100	1400
Marketing Coord.	100	200	200	100		600
Agribusiness Advisor	100	200	200	200	100	800
2. LTLTA - 4PY	25	100	75			200
Fiji TA	25	50	25			100
Vanuatu TA		50	50			100
3. STTA	40	300	262	180	80	862
PASA -20PM	40	100	100	80	80	400
Contractor -17PM		175	150	100		425
- 3PM (LOCAL)		25	12			37
4. TRAINING	95	180	215	180	30	700
Management	70	155	160	155		540
Study Tour	25	25	25	25		100
Workshop			30		30	60
5. RESEARCH/INFO DIS.	30	210	190	90		520
GRA Program	10	95	90	5		200
Marketing Manuals		45	40	35		120
Videos		20	20	20		60
ALO network	20	50	40	30		140
6. COMMODITIES	70	110	350	60		590
Quarantine Treatment						
-research	30	40	20			90
-commercial unit/ shipping			260			260
Processing Prototype		40	40	40		120
Quality Control & Acct. equip for Ass.		30	30	20		80
Off. Equip.-FJ&WS	40					40
7. OFFICE/SUPP. STAFF	15	30	30	30	30	135
8. MONITOR/COORD	165	200	200	200	200	965
9. EVALUATION			50		30	80
10. AUDIT	30				30	60
11. CONTINGENCIES (5%)	34	77	89	52	25	277
12. INFLATION (4%)	25	59	68	40	19	211
TOTAL	729	1666	1929	1132	544	6000

TABLE 4 : IMPLEMENTING & FINANCING METHODS

Item No.	Contract/Activity	Implementing Method	Financing Method	Estimated Cost ($000)	Contract Method
I.	INSTITUTIONAL CONTRACT				
	A. Technical Assistance	PIO/T	Direct Pay	2062	A.I.D.
	B. Training	PIO/T	Direct Pay	540	A.I.D.
	C. Commodities	PIO/C	Direct Pay	240	A.I.D.
II.	PASA				
	A. Technical Assistance	PIO/T	Direct Pay	400	PASA
	B. Training	PIO/T	Direct Pay	100	PASA
	C. Commodities	PIO/C	Direct Pay	240	PASA
	D. Research	PIO/T	Direct Pay	90	PASA
	E. Services	PIO/C	Direct Pay	20	PASA
III.	COOPERATIVE AGREEMENT				
	A. Training	PIO/T	Direct Pay	60	COOP AGRMT
	B. Research	PIO/T	Direct Pay	240	COOP AGRMT
	C. Publications	PIO/T	Direct Pay	180	COOP AGRMT
	D. Services	PIO/T	Direct Pay	100	COOP AGRMT
IV.	MONITOR/COORD/RAP				
	A. Technical Assistance	PIO/T	Direct Pay	965	A.I.D.
	B. Services	PIO/T	Direct Pay	135	A.I.D.
V.	EVALUATION/AUDIT	PIO/T	Direct Pay	140	A.I.D.

TABLE 5
PROJECT BUDGET BY CURRENCY
(US$000)

	FOREIGN EXCHANGE	LOCAL COSTS	TOTAL
1. Technical Assistance			
Long term - Expat	1,000	400	1,400
Long term - Local	50	150	200
Short - Term	662	200	862
Sub-total	1,712	750	2,462
2. Training			
Management	100	440	540
Study tours	50	50	100
Workshops		60	60
Sub-total	150	550	700
3. Research/Publication		520	520
4. Prototype Machinery	400	70	470
5. Commodities	80	40	120
6. RDO/SP Monitoring	400	700	1,100
7. Evaluations	50	30	80
8. Audits	0	60	60
9. Contingency	140	140	280
10. Inflation	104	104	208
TOTAL	3,036 0	2,964 0	6,000

V. EVALUATION PLAN

Two reviews will be conducted during the course of the project. The first, a midterm evaluation by an external team in year three of the project, will review both USP's progress toward objectives in their cooperative agreement and the performance of the contract team.

The review of USP's contribution is especially critical because USP's inputs are product-based, and thus a radical change from their more traditional institution building role in SPRAD. The second phase of USP's grant will be based on the midterm team's evaluation of the usefulness of USP's outputs. Special attention will be paid to the quality and usefulness of the quality control manuals, commercial videos, and information supplied to industries; the success of linkages established by ALO's between commercial industry and USP; and the quality and usefulness of industry identified technical packages produced by the research assistants under the guidance of project-supplied TA. Based on the successful and timely completion of the tasks as described in the cooperative agreement, USP's grant will be extended to the fourth and fifth years of the project.

The commercial contractor will be evaluated at the same time and all project inputs will be assessed. Inputs, in terms of technical assistance, commodities and training, are carefully related in the project logframe to the magnitude of outputs. These are to be verified by project quarterly reports.

A final review to assess project impact will be carried out in year five. Both of these evaluations will be performed by a team of independent advisors and funded by the project's monitoring and evaluation line items.

Both the midterm evaluation and the final project review will focus on progress toward achieving end of project status (EOPS) as outlined in the logframe.

Monitoring: Trip reports, quarterly meetings, and quarterly implementation reports form the basis of the project's internal monitoring system. The contractor is charged with monitoring and reporting on:

1) The quality and value of produce exported from target countries with special emphasis on target crops as listed in the logframe and in the Missions' November 1991, Strategy Statement.

2) The increase in high value exports via sales to tourists as reported by agribusiness entitites.

3) Any increases in foreign investment activities in the agricultural sector with an emphasis on target crops and countries.

4) The results of quarantine treatment research protocol development, and treatment commercialization.

5) The progress of technology transfer activities.

6) The progress in developing private sector management training capability.

7) The progress in establishing industry grading and quality standards.

8) Results of policy and privatization work.

Baseline data for high value exports are included in annexes B, E, and J of the PP. The contract team will build in the information now available by collecting both export and tourist sales data. This information is avaiable from the ministries of agriculture and statistical departments, but needs to be updated and supplemented by discussions with exporters and with statistics from importing countries.

Particular attention will be paid to the contractor's ability to include women beneficiaries in the implementation of the project's activities. Per the recommendation in the social soundness analysis (SSA), all project data accumulated by the contract team and reported in quarterly reports will be disaggregated where feasible by gender and country of origin. The evaluation will confirm the usefulness of such efforts.

VI. SUMMARY OF ANALYSES

The various analyses have included a number of recommendations which, were incorporated in the design of the project.

The Institutional Analysis (Annex G) was undertaken by the former Managing Director of the Friendly Island Marketing Cooperative of Tonga. In the six years from 1986-1991 FIMCO, with A.I.D. assistance, has grown from a $300,000 to a $3,000,000 a year business with 1,800 producer members. It is now 100% Tongan owned and managed and is expected to continue to prosper. Management was the key to this transition. The CAD project is structured to provide the same kind of assistance to other Pacific island nations. By building on the experience gained in Tonga and by working with more established industries and enterprises it was concluded that CAD could achieve similar results in a shorter time

frame at less cost per enterprise.

The Social Soundness Analysis (Annex J) made a series of recommendations which will be incorporated into the workplan of the prime contractor. CAD's emphasis on in situ farmers, producer-owned companies, and high-value crops integrated into traditional production system was highlighted in the SSA. The SSA concluded that this emphasis indicates a sensitivity to traditional land tenure/land use patterns that augurs well for the success of the project. It was recommended that social soundness analysis be incorporated into management training curriculum development; that the contractor's quarterly implementation reports record the status of participation of women beneficiaries; and that the monitoring of crop specific land use practices be included in both project monitoring and curriculum development efforts.

The Economic Analysis (Annex I) concluded that improving the quality of high value exports can lead to substantial economic benefits relative to the cost incurred - particularly in the case of an existing industry. There is considerable scope for improving the quality of Pacific island produce exports and there are significant price premiums to be obtained from these efforts. Since the high cost of freight and handling have to be met regardless of the quality of the produce, therefore most of the benefit of improved quality will accrue to exporters. Projected increases in sales can be achieved within existing freight capacities.

The Technical Analysis (Annex H) considered alternative approaches to achieving the goal and purpose of the CAD Project. It was concluded that it was appropriate to focus on exporting businesses that have sufficient producer ownership. Such enterprises provide the greatest scope for replication and spreading of the benefits of the project. Further efforts to improve marketing, grading and quality control have been most successful with producer-owned and controlled businesses. The essential difference between such successful industries and similar efforts in the Pacific islands in the past through government-owned and directed marketing boards lies in the establishment of a strong proprietary interest in the grower-owned and directed businesses.

The Pacific islands must be brought into the mainstream of QT methods if they are to continue to export high value horticultural exports. CAD's collaborative approach utilizing the unique capability of the USDA/ARS represents the only feasible way to proceed. By involving the USP in CAD and providing inputs to assist IRETA in changing its orientation toward commercial agriculture, the project obtains these inputs at a lower cost and in a more effective manner than if these inputs were obtained from outside the region. In addition, the project also strengthens a regional organization's capacity to continue to provide these services after the project ends.

The use of NGIP in management training is similarly justified compared with alternative approaches considered and forms the basis of a unique training opportunity in the South Pacific; i.e., training by private sector entrepreneurs for private sector growers and exporters.

The Environmental Report. On the recommendation of the Asia Bureau environmental officer, a local firm was hired to review the current production practices of the major high value crops which have been targeted under CAD. The purpose of this study was to recommend to the design team areas where CAD can assist in the promotion of environmentally sound production practices.

CAD is not a "production" project per se; the projected increase in value of the targeted produce will come primarily from increased quality. However the project cannot ignore the possibility that more lands will be brought under cultivation or that production will be intensified as profitability to producers is increased. Indeed, this is a predicted and welcome "spread effect" of a successful agribusiness. The responsibility of the implementation team is to ensure that environmentally sound production practices are encouraged.

The consultant concentrated on fresh ginger production and made the following recommendations:

1. Demonstration of sustainable ginger growing. Demonstrations should be of sufficient size to be widely appreciated by both farmers and government that ginger can be grown continuously on undulating ground, thereby reducing erosion.

2. Monitoring. The CAD project should include a monitoring program to ensure that the objective of shifting the ginger industry to a sustainable footing is not sacrificed or overridden by other objectives of the project which may inadvertently encourage unsustainable practices.

3. Reviews and Termination. Periodically the monitoring should be reported in the form of a review, at which time if it is concluded that the industry is not co-operating in the move to a sustainable production base, then the CAD assistance should be terminated.

These recommendations will be incorporated into the letter of agreement with the FFGEA and monitored by the contracting team, using short term assistance when required.

These principals will also be followed in the agreements with all agribusinesses with which the project will be working, i.e.

sustainable production practices must be adopted for those crops where production practices or the use of biocides are hazardous to the environment.

Coordination of CAD with the SPC Biological Control project will also be done by the project coordinator to ensure that biocontrol is initiated where possible and reported in the contractor's quarterly reports.

VII: INITIAL ENVIRONMENTAL EXAMINATION (IEE)

See attached

Revised

INITIAL ENVIRONMENTAL EXAMINATION

Project Location	:	South Pacific
Project Title	:	Commercial Agriculture Development (CAD)
Project Number	:	879-0025
Life of Project	:	FY1992 - FY1997
Funding	:	$6.0 million
Prepared by	:	Sharon A. Fee Agricultural Development Officer

The Commercial Agriculture Development (CAD) Project is a six million dollar, five year project which will provide management assistance to producer-owned commercial enterprises and assist exporters to develop and market a competitive product.

To achieve the purpose of increasing the value of agricultural exports, the project will fund seven person years of long term expatriate expertise focussed on providing agribusiness and marketing advice; four years of regional technical assistance which will concentrate on the development of local management skills, and forty person months of short term expertise, aimed at improving quarantine and quality control to ensure the competitiveness of agroproducts.

The components are funded approximately as follows:

	000's
Technical assistance to commercial industry associations	2.5
Training and Studies	1.2
Commodities	.6
Coordination and Monitoring	1.1
Contingencies and Inflation	.6
	6.0

Because the components of the project involve primarily the provision of technical assistance, training, controlled experimentation studies, analyses and information transfer, the mission is requesting a categorical exclusion under Handbook 3, appendix 2D, paragraph 216.2(c).

While CAD is not an agricultural production project per se profitability increases may cause new lands to be brought under cultivation or the intensification of production of land already under cultivation.

At the suggestion of the Bureau environmental officer, the mission contracted for a study to be done during the PP design which would summarize the production practices currently being used to raise the crops targeted by CAD and to recommend improved techniques where applicable. This study has been completed and (Annex K) of PP and the recommendations have been incorporated into the PP.

Several mitigating practices have been identified in the PP and will now be included in CAD. These practices will actually enhance the physical environment in which high value crops are grown, and in the case of quarantine practices, of the physical environmental as a whole.

They are:

A) Each agribusiness with which the project is working will sign a Memorandum of Cooperation which includes a section on the introduction of IPM and/or other environmentally sustainable production packages where applicable.

B) The implementation of this agreement will be the responsibility of the agribusiness associations themselves; CAD will assist where funds permit.

C) Progress will be monitored by the main contractor and reported quarterly.

Several quarantine and treatment protocols to be introduced under CAD in lieu of current chemical treatments will have a salutary effect on the environment. These include:

A) The replacement of chemical quarantine treatments with electrically powered hot air quarantine treatments for papaya and other fruits.

B) The introduction of hot water dips for disease control in fruits and vegetables in lieu of chemical treatments.

C) The replacement of Fruit Fly Chemical Spraying techniques with baiting techniques to reduce chemical applications.

Other agroprocessing equipment to be designed and introduced under CAD will have a neutral effect on the environment these are:

A) A taro washer to remove soil from root crops.

B) A manually operated ngali nut cracker.

Great potential exists for the introduction of improved, environmentally safe and sustainable practices in the South Pacific. While it is beyond the scope of CAD's limited resources to develop biocontrol practices, the project will coordinate closely with both the GTZ Biological Control project and FAO's Fruit Fly project. These two projects have a mandate to work with government through the South Pacific Commission while CAD represents a unique opportunity to transfer new technologies directly to the private sector through the associations with which it works. On this basis, a categorical exclusion is recommended.

Environmental Action Recommended: Negative Determination

Mission Agricultural Development Offficer : Signature: Sharon A. Fee

Date: December 2, 1991

Regional Director's Concurrence : Signature: John B. Woods (Signed)

Date: December 2, 1991

Approved Bureau Environmental Officer : Signature: Molly Kux

Date: December 20, 1991

Approved by telephone

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AGENCY FOR INTERNATIONAL DEVELOPMENT

Washington, D.C. 20523

PROJECT PAPER

ANNEXES A-N

South Pacific Regional

Commercial Agricultural Development 879-0025

Dated: December 20, 1991

SV

ANNEX A

ACTION: AID INFO: EXEC

VZCZCVA0046
PP RUEHVA
DE RUEHC #1845/01 0120908
ZNR UUUUU ZZH
P 120906Z JAN 91
FM SECSTATE WASHDC
TO AMEMBASSY SUVA PRIORITY 1232
BT
UNCLAS SECTION 01 OF 02 STATE 011845

LOC: 35 639
14 JAN 91 0052
CN: 51489
CHRG: AID
DIST: AID

JAN 15 1991 SUVA

ACTION	INFO
	DIR
	ASST DIR
	PROG
	RDO
	CONT
	ADMIN
	REG PROG
	FMD
	PLD
	PHN
	FM 1
	[illegible]
	[illegible]
	[illegible]
	[illegible]
	[illegible]
	[illegible]
FILE	
DUE DATE	1/18
ACTION TAKEN	

AIDAC

E.O. 12356: N/A
TAGS:
SUBJECT: SOUTH PACIFIC COMMERCIAL AGRICULTURE DEVELOPMENT PROJECT (879-0025) AID/W PID REVIEW

1. THE SUBJECT PID WAS REVIEWED IN AID/W ON DECEMBER 11, 1990. THE PROJECT REVIEW COMMITTEE CONSISTED OF REPRESENTATIVES OF TR, A, PD, GC, FPM, AS WELL AS PPC. IN TOTAL 17 ISSUES AND 6 CONCERNS WERE DISCUSSED WITH MISSION REPRESENTATIVES KIRK DAHLGREN AND LOUIS KUHN. ALL OF THESE ISSUES AND CONCERNS WERE RESOLVED AT THE MEETING. AS A RESULT, THE MISSION IS AUTHORIZED TO PROCEED WITH PP DEVELOPMENT AND PROJECT AUTHORIZATION. AUTHORITY IS HEREBY DELEGATED TO THE DIRECTOR, RDO SOUTH PACIFIC FOR A FY 92 INITIAL OBLIGATION.

2. THE FOLLOWING PP PREPARATION GUIDANCE RESULTED FROM THE REVIEW:

A. THE COMMITTEE ENCOURAGES THE MISSION TO PROFIT FROM LESSONS LEARNED BY THE AGENCY FROM OTHER, SIMILAR PROJECTS. SPECIFICALLY, THE MISSION SHOULD INVESTIGATE THE SUCCESSES/PROBLEMS ENCOUNTERED BY THE TROPICAL FRUIT

FOR WINDWARD ISLANDS PROJECT MANAGED OUT OF RDO/C. THIS COMPLEX PROJECT INVOLVES A LARGE NUMBER OF ISLAND COUNTRIES AND HAS HAD APPROXIMATELY FIFTEEN MONTHS OF IMPLEMENTATION EXPERIENCE.

B. PROJECT INPUTS: THE PP SHOULD IDENTIFY ALL REQUIRED INPUTS AND THEIR RELATIONSHIP TO PROJECT OUTPUTS. SPECIFICALLY, THE PP SHOULD INCLUDE AN IDENTIFICATION OF NON-PROJECT INPUTS (I.E. THOSE OF OTHER DONORS AND PRIVATE SOURCES OF INVESTMENT, INCLUDING THOSE THROUGH THE MARC PROJECT, (879-0018) REQUIRED TO ACHIEVE PROJECT SUCCESS. THE COMMITTEE UNDERSTOOD FROM THE PRESENTATION BY MISSION REPRESENTATIVES THAT SOURCES OF COMMERCIAL AND OTHER CREDIT ARE READILY AVAILABLE IN THE REGION, INCLUDING THOSE FOR COMMERCIAL AGRICULTURAL PRODUCTION, PROCESSING AND MARKETING, AND THAT A MORE FULL ANALYSIS OF CREDIT AVAILABILITY HAS BEEN UNDERTAKEN AS PART OF THE MARC PP DESIGN. IT IS RECOMMENDED THAT THE CAD PP ALSO ADDRESS THIS QUESTION. THE COMMITTEE NOTED FROM

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THE PRESENTATION THAT THERE IS SUFFICIENT AIR CARGO SPACE AVAILABLE FOR SUBSTANTIALLY INCREASED EXPORTS, EVEN WITHOUT THE EXPECTED INCREASES IN TOURISM, BUT RECOMMENDS THAT THE MISSION SPECIFY IN THE PP THE AIR CARGO PROJECTIONS THAT WILL BE USED IN THE PP ECONOMIC ANALYSIS. QUALITY STANDARD TESTING IS ALSO A CRITICAL INPUT TO THE SUCCESS OF AN EXPORT ORIENTED FOOD-PRODUCT PROJECT. THE PP SHOULD IDENTIFY THE ADEQUACY OF TESTING SERVICES AVAILABILITY AND THE MECHANISM FOR QUALITY CONTROL ASSURANCE.

C. COST RECOVERY: THE MISSION SHOULD EXAMINE EVERY OPPORTUNITY TO RECOVER COSTS FOR SERVICES PROVIDED. THERE ARE TWO OBVIOUS CHANNELS: (1) FROM TECHNICAL ASSISTANCE PROVIDED TO FOR-PROFIT FIRMS OR ASSOCIATIONS, AND (2), FROM DRY HEAT TREATMENT (DHT) UNIT SERVICES. THE PID IS UNCLEAR ABOUT WHICH ASSOCIATION/ORGANIZATION WOULD BE GRANTED THE DHT'S, BUT IT IS RECOMMENDED THAT COST RECOVERY BE PURSUED THROUGH SALE OF THE UNITS AFTER THE PILOT TESTING AND CERTIFICATION PERIOD HAS ENDED.

D. POLICY REFORM: THE COMMITTEE COMMENDS THE MISSION'S PLANS FOR POLICY INTERVENTIONS, INCLUDING SUPPORT FOR OTHER DONOR REFORM EFFORTS. THE MISSION SHOULD CLEARLY IDENTIFY IN THE PP LINKS BETWEEN CAD PROJECT ASSISTANCE AND EXPECTED POLICY REFORMS BY HOST GOVERNMENTS. THE MISSION SHOULD BE SPECIFIC ABOUT THE ROLE OF OTHER DONORS IN ANY REFORM STEPS, AND HOW DISBURSEMENT OF USAID FUNDS AND/OR OTHER INCENTIVES WILL BE CONDITIONED

UPON POLICY REFORM PERFORMANCE. ALSO IDENTIFY THE EXTENT TO WHICH USAID WILL ENTER INTO POLICY DIALOGUE WITH HOST GOVERNMENTS.

E. MARKET ANALYSIS: THE PID STATES THAT PERFORMANCE PROBLEMS LIE MAINLY WITH SUPPLY, NOT DEMAND. THIS IDEA SHOULD BE MORE FULLY EXPLORED AND SUPPORTED. THE PP SHOULD INCLUDE A THOROUGH ANALYSIS OF MARKET DEMAND FOR TARGETED HORTICULTURAL COMMODITIES (TAKING INTO CONSIDERATION THE EXTENT OF POTENTIAL USE OF SUBSTITUTE COMMODITIES), PARTICULARLY THOSE CROP/PRODUCTS FOR WHICH THERE HAS BEEN A PROVEN RECORD FOR SOUTH PACIFIC PRODUCERS (I.E. TARO, GINGER, PAPAYA, MANGO AND VANILLA). FOR PRODUCTS WHICH HAVE NO PROVEN RECORD, AN ANALAYSIS OF IMPORT COUNTRY TRADE RESTRICTIONS SHOULD BE INCLUDED. THERE ALSO SHOULD BE SOME ANALYSIS OF EXPECTED SUSTAINABILITY OF MICRO-NICHE COMMODITIES (E.G. KAVA, ORGANIC/NATURALLY-PRODUCED FOODS AND SPECIFIC VEGETABLE CULTIVARS). THE COMMITTEE BELIEVES THAT

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PROJECT FEASIBILITY SHOULD NOT HINGE UPON THE SUCCESS OF MICRO-NICHE CROP/PRODUCTS WHICH MAY LACK DEPENDABLE MARKETS. NORE SHOULD IT HINGE UPON THE CROP/PRODUCTS IN MARKETS WHICH MAY PROVE TO HAVE LOW ABSORTIVE CAPACITY DUE TO LOW DEMAND ELASTICTICS. THE COMMITTEE ALSO RECOMMENDS THAT THE PP TEAM INCLUDE A PERSON WITH AGRIBUSINESS DEVELOPMENT SKILLS.

F. PERFORMANCE MONITORING: THE COMMITTEE RECOMMENDS THAT SOME SPECIAL PROVISION BE DESIGNED INTO THE PROJECT TO TRACK PERFORMANCE. INDICATORS OF EXPECTED PERFORMANCE SHOULD BE DESIGNATED IN THE PP. THE MISSION IS ENCOURAGED TO DELEGATE SOME DATA COLLECTING RESPONSIBILITIES TO PARTICIPATING PROJECT INSTITUTIONS OR A SEPARATE INSTITUTION. A SEPARATE PROJECT COMPONENT FOR MONITORING WOULD BE ONE APPROACH. USE OF PROJECT FUNDS FOR THIS PURPOSE MAY BE NECESSARY.

G. WSTEC: IF A PRODUCER-OWNED MARKETING AND IMPUT SUPPLY COMPANY IS DEEMED TO BE THE MOST EFFECTIVE PROJECT PROVIDER OF INPUTS AND MARKETING SERVICES, THE MISSION SHOULD ENSURE THAT WSTEC NOT BE STRUCTURED IN SUCH A WAY AS TO BE DEPENDENT UPON THE WESTERN SAMOA GOVERNMENT FOR TECHNICAL OR FINANCIAL SUPPORT, THEREBY POSSIBLY COMPROMISING THE INDEPENDENCE, EFFICIENCY AND SUSTAINABILITY OF ITS OPERATIONS. PLEASE IDENTIFY IN THE PP THE SOURCES OF FINANCING FOR THE COMPANY AND EVALUATE THE CONDITIONS NECESSARY FOR ITS FINANCIAL SUSTAINABILITY. THE MISSION IS ADVISED TO LIMIT THE

NUMBER OF PPODUCER ASSOCIATIONS THAT WILL RECEIVE PROJECT ASSISTANCE AND TO AVOID INVOLVEMENT WITH PARASTATALS (E.G. MARKETING BOARDS).

H. GENDER ANALYSIS: THE COMMITTEE NOTES THE OPPORTUNITY THAT CAD WILL PRESENT FOR WOMEN'S PARTICIPATION IN BUSINESS ACTIVITIES. IT IS RECOMMENDED THAT THE MISSION CONSIDER EMPLOYING FOR THE PP DESIGN A SOCIAL SCIENTIST WITH SKILLS IN GENDER-DISAGGREGATED ANALYSIS OF CONSTRAINTS AND OPPORTUNITIES. THE OUTCOME OF SUCH ANALYSIS WOULD BE REFLECTED IN THE PROJECT PERFORMANCE MONITORING AND EVALUATION PLAN. (FYI: THE PPC/WID OFFICE MAY HAVE FUNDS AVAILABLE FOR SPLIT FUNDING WITH THE MISSION FOR THIS PP SOCIO-ECONOMIC ANALYSIS.-END FYI.)

I. ENVIRONMENTAL: APRE/DR/TR RECOMMENDS THAT THE IEE CITE A CATEGORICAL EXCLUSION UNDER SEC. 216.2 (C) (2) AS THE REASON FOR NO FURTHER ENVIRONMENTAL ANALYSIS. PLEASE FAX REVISED IEE TO BUREAU ENVIRONMENTAL OFFICER, MOLLY KUX FOR APPROVAL AND RETURN TO MISSION VIA FAX. IN ADDITION, THE COMMITTEE RECOMMENDS THAT THE PP TEAM ADDRESS METHODS, INCLUDING INTEGRATED PEST MANAGEMENT, FOR DISCOURAGING INCREASED PESTICIDE USE RESULTING FROM THE ANTICIPATED INCREASED PRODUCTION OF HIGH VALUE HORTICULTURAL CROPS PROPOSED IN THE PID. ALSO, FOR ORGANIC PRODUCTS PROPOSED FOR EXPORT, IT WOULD BE USEFUL TO RESEARCH EMERGING U.S. AND EEC

STANDARDS/CERTIFICATION REQUIREMENTS WHICH S.P. COUNTRIES MIGHT HAVE TO MEET AS WELL AS EXISTING FDA REQUIREMENTS REGARDING PESTICIDE RESIDUES.

J. MORTAGE: THE COMMITTEE NOTES THE EXISTING LARGE USAID PROGRAM MORTGAGE. HOWEVER, THE PRESENTER ADVISED THAT USAID IS CONSIDERING SHIFTING CAD'S PLANNED AUTHORIZATION TO FY 1992 IN LIGHT OF REDUCED OYB LEVELS IN FY 1991. THE COMMITTEE URGES THE MISSION TO REVIEW ALL DECISIONS REGARDING CAD AND OTHER PROJECT ACTIONS IN LIGHT OF SCARCE BUREAU RESOURCES, USAID'S MINIMAL PIPELINE AND THE EXISTING LARGE PROGRAM MORTGAGE.

K. WITH THE ABOVE GUIDANCE TAKEN INTO CONSIDERATION, THE MISSION IS AUTHORIZED TO PROCEED WITH PP DESIGN AND IS HEREBY DELEGATED AD HOC AUTHORITY TO SIGN THE ASSOCIATED PROJECT AUTHORIZATION IN AN AMOUNT NOT TO EXCEED SIX MILLION DOLLARS, WHICH INITIAL OBLIGATION IN FY 92.

L. AS AGREED WITH RDO REPRESENTATIVES, MISSION WILL SUBMIT REVISED PID, INCLUDING APPROVED, REVISED IEE, FOR OFFICIAL APRE/DR/PD FILES. PLEASE ADVISE SUBMISSION DATE. BARTHOLOMEW
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ANNEX A

RDO Response to Issues raised in the PID Approval Cable (State 11845)

Responses are queued to questions raised (reftel):

Para 2A

WINDWARD Islands Project Evaluation was not available at the time of PP design, however, the following related projects were examined for reference to CAD:

Final Report of the United States Agricultural Development Corporation "Technical, Commercial and Financial Feasibility Studies of Agribusiness Projects" (Grant No. DPE-2002-G-SS-5069-00)

Evaluation of the High Impact Agricultural Marketing and Production Project (Project No. 538-0140)

Chemonics Int. Consulting Div. Proposal to Provide Technical Assistance for the West Indies Tropical Produce Support Project (PRP No. 638-101631)

Proexag "Building a prosperous Non-Traditional Agricultural Export Industry in LDC's: The Key to Success"

Para 2B

Credit availability - see Project Description, Fiji Fresh Ginger Industry, Institutional Analysis for Tonga Vanilla Industry. A component of CAD (expanding business opportunities) deals directly with credit availability. Industry-owned companies are utilized as a means of getting credit to farmers who can't offer land as collateral. Air cargo access is dealt with directly in Economic Analysis (Annex 1).

Para 2C

Cost Recovery - For technical assistance - it would not be appropriate to seek cost recovery from the fledgling businesses with which CAD will be working for Technical Assistance.

The DHT unit will be a self sustaining entity. Operational maintenance will be carried by the Fiji Fresh Produce Association based on fees levied to customers. The Association will also pay for site preparation and

installation costs of the unit. Only one commercial unit will be established using project funds.

Para 2D.

Policy reform - The role envisioned for CAD in policy reform is primarily in the transition from parastatal to private sector businesses for several parastatals listed in the Project Description. Other areas of policy reform intersections will be practical implementation steps such as the introduction of quality grading standards and the privatization of quarantine treatment facilities USAID has already begun policy dialogue with several Host governments since the arrival of the Commercial Agricultural Advisor in July of 1991. These efforts will be intensified under CAD.

Para 2E

Market Analysis - The primary emphasis CAD is on increasing quality and reliability of supply in order to increase the value of products already being marketed. Possibilities for expansion of Pacific Island Nations into known markets and for the introduction crops are discussed in Annex E.

Para 2F

Performance monitoring: This is under Contractor's Scope of Work.

Para 2G

WSTEC - Assistance to WSTEC has been deferred pending resolution of problems in privatization (See Annex H).

Para 2H

Gender Analysis - This issue is raised in the Social Soundness Analysis (Annex J) and resolved via quarterly reports by the commercial contracting firm.

Para 2I

Environmental: Issues raised at the PID review plus other potential environmental problems with high value horticultural crops have been investigated in the Environmental Report (Annex K). A revised IEE has been submitted.

CAD LOGICAL FRAME WORK

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATIONS	ASSUMPTION FOR ACHIEVING OUTPUT TARGETS
PROGRAM OR SECTOR GOAL	**MEASUREMENT OR GOAL ACHIEVEMENT**		
Economic growth which sustains the environment and is based on private and community enterprise.	1. Increased economic growth 2. Increased net foreign exchange. 3. Increased income of rural families and business.	1. Agriculture census results 2. National accounts 3. Trade statistics 4. Social accounting models for Fiji, Tonga, Vanuatu, and Western Samoa.	1. The Pacific islands maintain a comparative advantage in horticultural and high value export commodities. 2. World recession not excessive effect markets.
PURPOSE	**END OF PROJECT STATUS**	**MEANS OF VERIFICATION**	
To increase the value of agricultural exports to niche markets.	1. The quality and value of produce from Fiji, Western Samoa and Tonga increases (ginger exports increased by $1 million, fresh produce exports increased by $2 million and root crops increase by $1 million). 2. Increased high value exports via sales to tourists. 3. Root crops and spices exports begins from Vanuatu. 4. Indigenous nut exports begins from Vanuatu and the Solomon Islands. 5. Non-cocoa agri-business activities of New Guinea Island Produce increase.	1. Project quarterly reports, evaluation and monitoring. 2. Importer and market surveys of relative prices. 3. Trade statistics. 4. Volume of lending for investment in project assisted activities. 5. Volume of lending for investment in project assisted activities.	1. Private sector responds to the opportunities created in the project assisted activities. 2. There is no dramatic negative change in the policy and investment environment. 3. There is no dramatic shift in market conditions and access. 4. Commercial industry focussed research activities are successful. 5. The commercial sector successfully adopt new quarantine treatment techniques. 6. Farmers and agribusiness adopt quality and grading standards. 7. Commercial industry associations are receptive to new ways of doing business. 8. Management capability is enhanced. 9. There is normal hurricane activity.

ANNEX B

CAD LOGICAL FRAME WORK

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATIONS	ASSUMPTIONS FOR ACHIEVING OUTPUT TARGETS
OUTPUTS			
Strengthened Commercial Exporting Enterprises	**MAGNITUDE OF OUTPUTS**	Project reports, evaluations, and monitoring.	1. Cultural factors do not substantially inhibit the private sectors involved in entrepreneur and commercial activities. 2. Industries adopt the necessary quality standards for successful export. 3. The private sector actively participates in the management training project and are willing and able to adopt management improvements. 4. Government is willing to privatize cocoa marketing and ginger processing operations. 5. Reproduction of high quality products possible. 6. Tourism growth continues.
1. Parastatal agri-businesses activities privatized. 2. Industry association established as commercial exporting and farmer support businesses. 3. Businesses expand export operations and develop new products. 4. Regional private sector training capability established.	1. At least two export industries privatized. 2. Five or more associations stronger as businesses. 3. Two new products developed and three existing products expanded. 4. One self-financed training program operating. 5. Manuals (root crops, fruit and vegetables and spices) prepared distributed and adopted by at least two industries).		
Improved Product Export Competitiveness.			
5. Quality and grading standards adopted by industries. 6. USDA developed quarantine treatments commercially adopted. 7. Other technologies introduce (.eg. hot water, treatment for root crops, a washer for taro). 8. Technical packages adopted (e.g. environmentally sustainable ginger production. 9. USP research agenda reorientated to the commercial sector.	6. At least one commercially operated hot forced air treatment facility is operating. 7. At least one other technology package adopted. 8. At least one technical package adopted. 9. Six or more industry initiated research projects completed.		

ANNEX B

CAD LOGICAL FRAME WORK

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATIONS	IMPORTANT ASSUMPTIONS
INPUTS:	Type of Input — AID / HOST, in (000)		
A.I.D.: XXXXX	1. Techn. Assistance — US$000		
	LT - 7 PY — 1,400		
HOST GOVERNMENT: XXX	LT (local) - 4 PY — 200		
	ST - 40 PM — 860		
	2. Training — 700		
	3. Studies and Research — 520		
	4. Commodities — 590		
	5. Office Support — 135		
	6. Coordinating/Monitoring — 965		
	7. Evaluation/Audit — 140		
	8. Contingencies — 490		
	6,000		

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Status and prospects for some horticultural and other high-value niche commodity exports from the Pacific islands.

Commodity	Current status	Growth prospects	Growth constraints and requirements
FIJI			
Ginger - Fresh	Mature industry based on North American market (fob value approximately F$2.5 million).	Modest in medium term with improvements in quality and marketing arrangements. Real value could double over the next decade.	. Quality needs to be improved. * . Institutional reform in industry required. **
- Processed Immature	Long-standing industry that has experienced recent expansion in exports to Japan (fob value around F$2.0 million).	Substantial if Japanese market can be stabilized. A sizable market is available in the EEC and U.S.	. Consistent high quality required. ** . Capital investment in processing. ** . Privatizing of processing and marketing. * . Management upgrading. **
- Puree	Some off-grade mature ginger sold to Hawaii-based buyer for processing in California.	Fresh convenience products a rapidly expanding market in U.S. Fiji has large percentage of off-grade, mature ginger and the prospect of producing ginger puree.	. Technology and capital investment. ** . Foreign investor or joint venture partner probably required. **
Papaya and other fresh produce	Industry in place for a number of years and given high priority in government development plans. However, achievements to date have been disappointing (fob value around F$150,000).	Market prospects outstanding, initially in Australia and eventually in Japan.	. Antiquated post-harvest facilities operated by government a major weakness. * . Export quality standards need to be established and enforced. * . Improved industry organization required to ensure improved marketing. **
"Off-season" export and hotel vegetables	Small but encouraging private sector involvement in the Nadi area.	Excellent if quality standards can be maintained and projected growth in tourism materializes.	As with papaya.

* CAD involvement
** Possible CAD involvement

Status and prospects for some horticultural and other high-value niche commodity exports from the Pacific islands (cont.).

Commodity	Current status	Growth prospects	Growth constraints and requirements
FIJI (cont.)			
"Organic" cocoa	Cocoa processing (powder and butter)in Vanuatu for "organic" (no fertilizer and chemicals) chocolate presents promising prospect for Fiji's low productivity cocoa industry. Fiji's own developed confectionery industry provides some interesting possibilities for chocolate products, which also could involve ginger.	If Vanuatu's venture is successful, Fiji could follow suit-either selling "organic" beans to Vanuatu or establishing downstream processing venture.	. Viability of the organic cocoa market still to be proven. . Development in Fiji cocoa industry constrained by inefficient government marketing monopoly and poor standards of dry bean processing. ** . Industry privatization with appropriate regulation required. *
VANUATU			
Root Crops	Well-developed traditional industry. Export backloading opportunities now exist with Air Vanuatu flights to Brisbane, Auckland and Melbourne.	Particularly good for yams due to superior quality and storability. Taro would face stiff competition from W. Samoa and Tonga. $2 million in root crops exports might be reached over the next decade, particularly if the expected growth in tourism is realized to provide backloading capability.	. Significant air freighting depends on anticipated introduction of 767 by Air Vanuatu. . Improved southbound shipping necessary but not anticipated in the near future. . Quarantine treatment for nematodes. *
Kava	Well-established traditional crop. In recent years the substantial domestic commercial industry has been based on urban "nakamal" (kava salons). Vanuatu is looking to establish a major export industry based on herbal and pharmaceutical markets.	Vanuatu has widest range of commercial cultivators in the Pacific. A technology now exists to produce soluble kava for a "ginseng" type product. If the herbal and pharmaceutical markets can be realized potential exists for establishing a multi-million dollar industry.	. Considerable and skilled effort will be required to develop significant herbal beverage market (promotion and packaging will be critical). ** . Supply expansion to be carefully managed due to cultural sensitivities to traditional crop.

* CAD involvement
** Possible CAD involvement

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Status and prospects for some horticultural and other high-value niche commodity exports from the Pacific islands (cont.).

Commodity	Current status	Growth prospects	Growth constraints and requirements
VANUATU (cont.)			
"Organic" bulk commodities			
- Cocoa	Vanuatu-based entrepreneur with proven export marketing record installed cocoa processing machine directed at "organic" chocolate (no fertilizer and chemicals).	Cocoa suited to Vanuatu farming systems. The smallholder-based industry produces around 2,500 tonnes and continues to grow despite low world prices. The quality is good. A production base for this venture thus exists. If successful, the value of cocoa exports which currently stands at around US$2 million could double.	. Processed organic product will need to be produced and market tested. . Extent and requirements of organic market need to be determined. **
- Coffee	Coffee-processing project being proposed by Tanna Coffee Dev. Co. It will be directed at "organic" exports and high value packaged cocoa for the tourist market.	High value processing expected to offer longer term viability to Vanuatu's small but troubled coffee industry. With expanding tourism Hawaii's Kona coffee has become the model for Vanuatu. Coffee generates farm value sales of around $7 million in Hawaii.	. Product will need to be market tested. ** . Vertically integrated private investment needs to be attracted to the venture. **
Black pepper	Government sponsored a series of pepper development projects. Farm production has been disappointing; however, superior quality pepper has been grown in a number of more remote areas. The crop is suitable for smallholder villages.	Pohnpei pepper industry experience showed that the world market for gourmet pepper is undersupplied. Vanuatu has the additional advantage of being able to build industry development around supplying a growing tourist market. Vanuatu's labor supply situation is far better than that of Pohnpei. A $2 million industry over the next decade seen as a realistic objective.	. Industry organization lacking. * . Intensive extension effort required. . Private sector involvement in processing and marketing required. *
Vanilla	Government expected Vanuatu to develop Tongan scale vanilla industry. The French horticulturist from the Tongan industry was brought to Vanuatu. Performance to date has been disappointing. Disease has affected plantings on the major islands of Efate and Santo.	Thrives in certain microclimates - particularly Malakula. Thus, if well-managed a significant industry could be developed. A$1 million export industry over the next decade would seem to be a reasonable target.	. Careful site selection necessary. . Industry organization focussed on extension and marketing. **

* CAD involvement
** Possible CAD involvement

Status and prospects for some horticultural and other high-value niche commodity exports from the Pacific islands (cont.).

Commodity	Current status	Growth prospects	Growth constraints and requirements
TONGA			
Vanilla	Tonga's most important agricultural export industry, having surpassed both coconuts and bananas. The value of vanilla exports currently is around T$2.5 million annually.	Production base of industry firmly established, marketing largely in private sector hands. The value of exports could be expected to double over the next decade (assuming vanilla prices remain reasonably firm).	. Establishment and enforcement of standards. ** . Consolidation of exporting in hands of one or two industry based exporters.
Squash	Substantial export industry supplying the seasonal niche in Japanese market. The value of exports for 1990-91 season was T$1.9 million.	Mature T$3 million export industry would be a reasonable expectation if industry is consolidated.	Current rapid expansion needs to be foregone for consolidation, which requires: . increasing the yields and profitability of existing farmers. . improving quality, with particular emphasis on post-harvest handling. . improved coordination of marketing arrangements.
Root crops	Recently, a steady growth in root crop (taro and yam) exports, principally to NZ. The official value of these exports stands at T$8 million (likely to be significantly underestimated).	Industry has sound production and market base for sustained growth. Thus, the real value of exports could be expected to double over the next decade.	. Transportation constraint to expanding North American market.
Kukui nuts	Used as a traditional body oil. The nut is found in abundance in Tonga and Fiji.	Kukui nut oil held an exclusive high value product in Hawaii. Insufficient kukui nut trees available to meet the demand. Pacific Islands seen as an alternative supply source for nuts and possible oil.	. More information required on quality of oil produce from Tongan nuts. ** . Simple processing technology suitable for island. ** . Hawaiian joint venture partner. **
SOLOMON ISLANDS			
Ngali nuts	Government wishes to promote the export of this exotic tropical rain forest product. Some small trial shipments to Australia have been made.	The delicate flavor has high value and niche market potential.	. A simple low cost cracker. * . Packing and promotion. ** . Private sector involvement and exporting. **

* CAD involvement
** Possible CAD involvement

Status and prospects for some horticultural and other high-value niche commodity exports from the Pacific islands (cont.).

Commodity	Current status	Growth prospects	Growth constraints and requirements
WESTERN SAMOA			
Taro	Major export earner and region's largest exporter. Prior to hurricane Ofa the value of exports officially stood at WS$6 million (likely to be underestimated).	Exports growing rapidly since 1987. The market is under-supplied and Western Samoa is a low-cost producer that is well-located relative to major markets. A reasonable expectation over next decade is WS$15 million.	. Transportation a constraint to expanding North American market. . Exporters' Association required. **
Bananas	Major export industry in 1960s, government wishes to re-establish with involvement of private exporter. A successful trial shipment has been made.	Soil and climatic conditions excellent. New Zealand currently imports around 50,000 tonnes. A 10% market share is achievable with superior taste and close proximity to market.	. Major quality-related marketing problems to be overcome, particularly with respect to field practice and quarantine. **
COOK ISLANDS			
Papaya	Major agricultural export industry, fob value around NZ $0.5.	Auckland papaya market saturated, cannot profitably be expanded. Australia offers a large market if tourist-driven air links are created.	. Export quality standards need to be established and enforced. ** . Air cargo links to other markets. . Introduction and operation of new generation of post-harvest treatment facilities. **
"Organic" coffee	Small coffee industry being developed.	Market basis exists for development in tourism sector and high-value gourmet coffee markets in U.S. and elsewhere.	. Substantial investment in marketing (particularly packaging and promotion required). **
PAPUA NEW GUINEA			
Organic and speciality coffee	By far the largest coffee industry in region with 54,000 tonnes (K88m) exported in 1990. The industry has a dynamic private sector and strong institutional structure.	Good prospects said to exist for quality PNG arabica coffee in U.S. speciality coffee markets. Scope also exists for South Pacific coffee pack in which PNG coffees would have a central place.	. Industry geared to supplying bulk markets in Europe. . Segment of the industry needs to focus on speciality markets and make substantial investment in marketing. **
Spices			
Floriculture	No floriculture industry.	Highlands provide unique combination of altitude and latitude for floriculture and horticulture development. This would not be a niche development and would require major investment in support infrastructure.	. Development would have to be large and profitable enough to justify dedicated air freighting. . Development would require substantial agribusiness investment and expertise. **

* CAD involvement
** Possible CAD involvement

5C(2) - ASSISTANCE CHECKLIST

Listed below are statutory criteria applicable to the assistance resources themselves, rather than to the eligibility of a country to receive assistance. This section is divided into three parts. Part A includes criteria applicable to both Development Assistance and Economic Support Fund resources. Part B includes criteria applicable only to Development Assistance resources. Part C includes criteria applicable only to Economic Support Funds.

CROSS REFERENCE: IS COUNTRY CHECKLIST UP TO DATE?

None needed as this is a regional project

A. CRITERIA APPLICABLE TO BOTH DEVELOPMENT ASSISTANCE AND ECONOMIC SUPPORT FUNDS

1. **Host Country Development Efforts** (FAA Sec. 601(a)): Information and conclusions on whether assistance 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.

Project will promote all except (f)

2. **U.S. Private Trade and Investment** (FAA Sec. 601(b)): Information and conclusions on how assistance 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).

Project will promote exports to U.S. and may identify some opportunities for U.S. investment.

3. **Congressional Notification**

a. **General requirement** (FY 1991 Appropriations Act Secs. 523 and 591; FAA Sec. 634A): If money is to be obligated for an activity not previously justified to Congress, or for an amount in excess of amount previously justified to Congress, has Congress been properly notified (unless the notification requirement has been waived because of substantial risk to human health welfare)?

Project was justified to Congress on page 534 of the FY92 CP

b. **Notice of new account obligation** (FY 1991 Appropriations Act Sec. 514): If funds are being obligated under an appropriation account to which they were not appropriated, has the President consulted with and provided a written justification to the House and Senate Appropriations Committees and has such obligation been subject to regular notification procedures?

NA

c. **Cash transfers and nonproject sector assistance** (FY 1991 Appropriations Act Sec. 575(b)(3)): If funds are to be made available in the form of cash transfer or nonproject sector assistance, has the Congressional notice included a detailed description of how the funds will be used, with a discussion of U.S. interests to be served and a description of any economic poolicy reforms to be promoted?

NA

4. **Engineering and Financial Plans** (FAA Sec. 611(a)): Prior to an obligation in excess of $500,000, will there be: (a) engineering, financial or other plans necessary to carry out the assistance; and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?

Planning has been done.

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5. **Legislative Action** (FAA Sec. 611(a)(2)): If legislative action is required within recipient country with respect to an obligation in excess of $500,000, what is the basis for a reasonable expectation that such action will be completed in time to permit orderly accomplishment of the purpose of the assistance?	None needed
6. **Water Resources** (FAA Sec. 611(b); FY 1991 Appropriations Act Sec. 501): If project is for water or water-related land resource construction, have benefits and costs been computed to the extent practicable in accordance with the principles, standards, and procedures established pursuant to the Water Resources Planning Act (42 U.S.C. 1962, et seq.)? (See A.I.D. Handbook 3 for guidelines.)	NA
7. **Cash Transfer and Sector Assistance** (FY 1991 Appropriations Act Sec. 575(b)): Will cash transfer or nonproject sector assistance be maintained in a separate account and not commingled with other funds (unless such requirements are waived by Congressional notice for nonproject sector assistance)?	NA
8. **Capital Assistance** (FAA Sec. 611(e)): If project is capital assistance (e.g., construction), and total U.S. assistance for it will exceed $1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability to maintain and utilize the project effectively?	Project is not capital assistance
9. **Multiple Country Objectives** (FAA Sec. 601(a)): Information and conclusions on whether projects 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	Same answer as No. 1 above.

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monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.

10. **U.S. Private Trade** (FAA Sec. 601(b)): Information and conclusions 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).

Same answer as No. 2 above.

11. **Local Currencies**

a. **Recipient Contributions** (FAA Secs. 612(b), 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 in lieu of dollars.

Local costs are being met to extent possible by local sources. No foreign currencies of South Pacific are owned by U.S.G.

b. **U.S.-Owned Currency** (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

c. **Separate Account** (FY 1991 Appropriations Act Sec. 575). If assistance is furnished to a foreign government under arrangements which result in the generation of local currencies:

NA

(1) Has A.I.D. (a) required that local currencies be deposited in a separate account established by the recipient government, (b) entered into an agreement with that government providing the amount of local currencies to be generated and the terms and conditions under which the currencies so deposited may be utilized, and (c) established by agreement the responsibilities of

A.I.D. and that government to monitor and account for deposits into and disbursements from the separate account?

(2) Will such local currencies, or an equivalent amount of local currencies, be used only to carry out the purposes of the DA or ESF chapters of the FAA (depending on which chapter is the source of the assistance) or for the administrative requirements of the United States Government?

(3) Has A.I.D. taken all appropriate steps to ensure that the equivalent of local currencies disbursed from the separate account are used for the agreed purposes?

(4) If assistance is terminated to a country, will any unencumbered balances of funds remaining in a separate account be disposed of for purposes agreed to by the recipient government and the United States Government?

12. **Trade Restrictions**

a. **Surplus Commodities** (FY 1991 Appropriations Act Sec. 521(a)): 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?

No
Project is to improve quality of exports not increase production, and marketing periods are opposite of US marketing season.

b. **Textiles (Lautenberg Amendment)** (FY 1991 Appropriations Act Sec. 521(c)): Will the assistance (except for programs in Caribbean Basin Initiative countries under U.S. Tariff Schedule "Section 807," which allows reduced tariffs on articles assembled abroad from U.S.-made components) be used directly to procure feasibility

No

studies, prefeasibility studies, or project profiles of potential investment in, or to assist the establishment of facilities specifically designed for, the manufacture for export to the United States or to third country markets in direct competition with U.S. exports, of textiles, apparel, footwear, handbags, flat goods (such as wallets or coin purses worn on the person), work gloves or leather wearing apparel?

13. **Tropical Forests** (FY 1991 Appropriations Act Sec. 533(c)(3)): Will funds be used for any program, project or activity which would (a) result in any significant loss of tropical forests, or (b) involve industrial timber extraction in primary tropical forest areas? — No

14. **Sahel Accounting** (FAA Sec. 121(d)): If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (either dollars or local currency generated therefrom)? — NA

15. **PVO Assistance**

a. **Auditing and registration** (FY 1991 Appropriations Act Sec. 537): If assistance is being made available to a PVO, has that organization provided upon timely request any document, file, or record necessary to the auditing requirements of A.I.D., and is the PVO registered with A.I.D.? — NA

b. **Funding sources** (FY 1991 Appropriations Act, Title II, under heading "Private and Voluntary Organizations"): If assistance is to be made to a United States PVO (other than a cooperative development organization), does it obtain at least 20 percent of its total annual funding for international activities from — NA

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sources other than the United States Government?

16. **Project Agreement Documentation** (State Authorization Sec. 139 (as interpreted by conference report)): Has confirmation of the date of signing of the project agreement, including the amount involved, been cabled to State L/T and A.I.D. LEG within 60 days of the agreement's entry into force with respect to the United States, and has the full text of the agreement been pouched to those same offices? (See Handbook 3, Appendix 6G for agreements covered by this provision).

No project agreements will be signed.

17. **Metric System** (Omnibus Trade and Competitiveness Act of 1988 Sec. 5164, as interpreted by conference report, amending Metric Conversion Act of 1975 Sec. 2, and as implemented through A.I.D. policy): Does the assistance activity use the metric system of measurement in its procurements, grants, and other other business-related activities, except to the extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms? Are bulk purchases usually to be made in metric, and are components, subassemblies, and semi-fabricated materials to be spfcified in metric units when economically available and technically adequate? Will A.I.D. specifications use metric units of measure from the earliest programmatic stages, and from the earliest documentation of the assistance processes (for example, project papers) involving quantifiable measurements (length, area, volume, capacity, mass and weight), through the implementation stage?

Metric system will be used to the extent practical.

18. **Women in Development** (FY 1991 Appropriations Act, Title II, under heading "Women in Development"): Will assistance be designed so that the

Yes

percentage of women participants will be demonstrably increased?

19. **Regional and Multilateral Assistance** (FAA Sec. 209): Is assistance more efficiently and effectively provided through regional or multilateral organizations? If so, why is assistance not so provided? Information and conclusions on whether assistance will encourage developing countries to cooperate in regional development programs.

A portion of the assistance will be through the University of the South Pacific.

20. **Abortions** (FY 1991 Appropriations Act, Title II, under heading "Population, DA," and Sec. 525):

a. Will assistance be made available to any organization or program which, as determined by the President, supports or participates in the management of a program of coercive abortion or involuntary sterilization?

No

b. Will any funds be used to lobby for abortion?

No

21. **Cooperatives** (FAA Sec. 111): Will assistance help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward a better life?

Some assistance will be to cooperatives.

22. **U.S.-Owned Foreign Currencies**

a. **Use of currencies** (FAA Secs. 612(b), 636(h); FY 1991 Appropriations Act Secs. 507, 509): Describe steps taken to assure that, to the maximum extent possible, foreign currencies owned by the u.s. are utilized in lieu of dollars to meet the cost of contractual and other services.

None are owned by U.S.G.

b. **Release of currencies** (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

23. **Procurement**

a. **Small business** (FAA Sec. 602(a)): Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed?	Yes
b. **U.S. procurement** (FAA Sec. 604(a)): Will all procurement be from the U.S. except as otherwise determined by the President or determined under delegation from him?	Yes
c. **Marine insurance** (FAA Sec. 604(d)): If the cooperating country discriminates against marine insurance companies authorized to do business in the U.S., will commodities be insured in the United States against marine risk with such a company?	No
d. **Non-U.S. agricultural procurement** (FAA Sec. 604(e)): If non-U.S. procurement of agricultural commodity or product thereof is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.)	No agricultural products will be procured.

e. **Construction or engineering services** (FAA Sec. 604(g)): Will construction or engineering services be procured from firms of advanced developing countries which are otherwise eligible under Code 941 and which have attained a competitive capability in international markets in one of these areas? (Exception for those countries which receive direct economic assistance under the FAA and permit United States firms to compete for construction or engineering services financed from assistance programs of these countries.)	NA
f. **Cargo preference shipping** (FAA Sec.603)): Is the shipping excluded from compliance with the requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 percent of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported onprivately owned U.S. flag commercial vessels to the extent such vessels are available at fair and reasonable rates?	No
g. **Technical assistance** (FAA Sec. 621(a)): If technical assistance is financed, will such assistance be furnished by private enterprise on a contract basis to the fullest extent practicable? Will the facilities and resources of other Federal agencies be utilized, when they are particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?	Yes, some TA will be furnished by U.S. private sector. Specialized TA will be from USDA.
h. **U.S. air carriers** (International Air Transportation Fair Competitive Practices Act, 1974): If air transportation of persons or property is financed on grant basis, will U.S. carriers be used to the extent such service is available?	Yes
i. **Termination for convenience of U.S. Government** (FY 1991 Appropriations Act Sec. 504): If the U.S. Government is a	Yes

party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States?

j. **Consulting Services** (FY 1991 Appropriations Act Sec. 524): assistance is for consulting service through procurement contract pursuant to 5 u.s.c. 3109, are contract expenditures a matter of public record and available for public inspection (unless otherwise provided by law or Executive order)? — Yes

k. **Metric conversion** (Omnibus Trade and Competitiveness Act of 1988, as interpreted by conference report, amending Metric Conversion Act of 1975 Sec. 2, and as implemented through A.I.D. policy): Boes the assistance program use the metric system of measurement in its procurements, grants, and other business-related activities, except to the extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms? Are bulk purchases usually to be made in metric, and are components, subassemblies, and semi-fabricated materials to be specified in metric units when economically available and technically adequate? Will A.I.D. specifications use metric units of measure from the earliest programmatic stages, and from the earliest documentation of the assistance processes (for example, project papers) involving quantifiable measurements (length, area, volume, capacity, mass and weight), through the implementation stage? — Same answer as No. 17 above.

l. **Competitive Selection Procedures** (FAA Sec. 601(e)): Will the assistance utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise? — Yes

24. **Construction**

a. **Capital project** (FAA Sec. 601(d)): If capital (e.g., construction) project, will U.S. engineering and professional services be used? — NA. Not a capital project

b. **Construction contract** (FAA Sec. 611(c)): If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable?

c. **Large projects, Congressional approval** (FAA Sec. 620(k)): If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed $100 million (except for productive enterprises in Egypt that were described in the Congressional Presentation), or does assistance have the express approval of Congress?

25. **U.S. Audit Rights** (FAA Sec.301(d)): If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights? — NA

26. **Communist Assistance** (FAA Sec. 620(h). Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc countries? — Yes

27. **Narcotics**

a. **Cash reimbursements** (FAA Sec. 483): Will arrangements preclude use 0@ financing to make reimbursements, in the form of cash payments, to persons whose illicit drug crops are eradicated? — Yes

b. **Assistance to narcotics traffickers** (FAA Sec. 487): Will arrangements take "all reasonable steps" to preclude use of financing to or through individuals or entities which we know or have reason to — Yes

believe have either: (1) been convicted of a violation of any law or regulation of the United States or a foreign country relating to narcotics (or other controlled substances); or (2) been an illicit trafficker in, or otherwise involved in the illicit trafficking of, any such controlled substance?

28. **Expropriation and Land Reforn** (FAA Sec. 620(g)): Will assistance preclude use of financing to compensate owners for expropriated or nationalized property, except to compensate foreign nationals in accordance with a land reform program certified by the President? Yes

29. **Police and Prisons** (FAA Sec. 660): Will assistance preclude use of financing to provide training, advice, or any financial support for police, prisons, or other law enforcemegt forces, except for narcotics programs? Yes

30. **CIA Activities** (FAA Sec. 662): Will assistance preclude use of financing for CIA activities? Yes

31. **Motor Vehicles** (FAA Sec. 636(i)): Will assistance preclude use of financing for purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained? Yes

32. **Military Personnel** (FY 1991 Appropriations Ac Sec. 503): Will assistance preclude use of financing to pay pensions, annuities, retirement pay, or adjusted service compensation for prior or current military personnel? Yes

33. **Payment of U.N. Assessments** (FY 1991 Appropriations Act Sec. 505): Will assistance preclude use of financing to pay U.N. assessments, arrearages or dues? Yes

34. **Multilateral Organization Lending** (FY 1991 Appropriations Act Sec. 506): Will assistance preclude use of financing to pay U.N. assessments, arrearages or dues? Yes

35. **Export of Nuclear Resources** (FY 1991 Appropriations Act Sec. 510): Will assistance preclude use of financing to finance the export of nuclear equipment, fuel, or technology? — Yes

36. **Repression of Population** (FY 1991 Appropriations Act Sec. 511): Will assistance preclude use of financing for the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights? — Yes

37. **Publicity or Propoganda** (FY 1991 Appropriations Act Sec. 516): Will assistance be used for publicity or propaganda purposes de$igned to support or defeat legislation pending before Congress, to influence in any way the outcome of a political election in the United States, or for any public@ty or propaganda purposes not authorized by Congress? — No

38. **Marine Insurance** (FY 1991 Appropriations Act Sec. 563): Will any A.I.D. contract and solicitation, and subcontract entered into under such contract, include a clause requiring that u.s. marine insurance companies have a fair opportunity to bid for marine insurance when such insurance is necessary or appropriate? — Yes

39. **Exchange for Prohibited Act** (FY 1991 Appropriations Act Sec. 569): Will any assistance be provided to any foreign government (including any instrumentality or agency thereof), foreign person, or United States person in exchange for that foreign government or person undertaking any action which is, if carried out by the United States Government, a United States official or employee, expressly prohibited by a provision of United States law? — No

B. CRITERIA APPLICABLE TO DEVELOPMENT ASSISTANCE ONLY

1. **Agricultural Exports (Bumpers Amendment)** (FY 1991 Appropriations Act Sec. 521(b), as interpreted by conference report for original enactment): If assistance is for agricultural development activities @specifically, any testing or breeding feasibility study, variety improvement or introduction, consultancy, publication, conference, or training), are such activities: (1) specifically and principally designed to increase agricultural exports by the host country to a country other than the United States, where the export would lead to direct competition in that third country with exports of a similar commodity grown or produced in the United States, and can the activities reasonably be expected to cause substantial injury to U.S. exporters of a similar agricultural commodity; or (2) in support of research that is intended primarily to benefit U.S. producers?	(1) No. Exports will not be in direct competition with U.S exports as the emphasis in the project is on fresh, high value produce which is grown in the US's Winter months. (2) Research in the case of ginger may have direct benefit to US producers.
2. **Tied Aid Credits** (FY 1991 Appropriations Act, Title II, under heading "Economic Support Fund"): Will DA funds be used for tied aid credits?	No
3. **Appropriate Technology** (FAA Sec. 107): Is special emphasis placed on use of appropriate technology (defined as relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)?	Yes
4. **Indigenous Needs and Resources** (FAA Sec. 281(b)): Describe extent to which the activity 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 civic education and training in skills required for effective participation in governmental and political processes essential to self-government.	Project will respond to locally identified needs and use services o regional university, PNG training facility and other local resource to extent possible.

5. **Economic Development** (FAA Sec. 101(a)): Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?	Yes
6. **Special Development Emphases** (FAA Secs. 102(b), 113, 281(a)): Describe 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, dispersing investment from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using appropriate U.S. institutions; (b) encourage democratic private and local governmentalinstitutions; (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.	(a) Project will work through local associations to help mainly small, rural producers. (b) Project will promote privatization of government activitie (c) Project will help producers associations already formed by local people. (d) Project will involve women to extent possible. (e) Project will promote the regional network of agr. liaison Officers.
7. **Recipient Country Contribution** (FAA Secs. 110, 124(d)): Will the recipient country provide at least 25 percent of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)?	NA as this is regional project
8. **Benefit to Poor Majority** (FAA Sec. 128(b)): If the activity attempts to increase the institutional capabilities of private organizations or the government of the country, or if it attempts to stimulate scientific and technological research, has it been designed and will it be monitored to ensure that the ultimate beneficiaries are the poor majority?	Yes

9. **Abortions** (FAA Sec. 104(f); FY 1991 Appropriations Act, Title II, under heading "Population, DA," and Sec. 535):

a. Are any of the funds to be used for the performance of abortions as a method of family planning or to motivate or coerce any person to practice abortions?	No
b. Are any of the funds to be used to pay for the performance of involuntary sterilization as a method of family planning or to coerce or provide any financial incentive to any person to undergo sterilizations?	No
c. Are any of the funds to be made available to any organization or program which, as determined by the President, supp@rts or participates in the management of a program of coercive abortion or involuntary sterilization?	No
d. Will funds be made available only to voluntary family planning projects which offer, either directly or through referral to, or information about access to, a broad range of family planning methods and services?	NA
e. In awarding grants for natural family planning, will any applicant be discriminated against because of such applicant's religious or conscientious commitment to offer only natural family planning?	NA
f. Are any of the funds to be used to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilization as a means of family planning?	No
g. Are any of the funds to be made available to any organization if the President certifies that the use of these funds by such organization would violate any of the above provisions related to abortions and involuntary sterilization?	No

10. **Contract Awards** (FAA Sec. 601(e)): Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?	Same answer as No. 23.1 above.
11. **Disadvantaged Enterprises** (FY 1991 Appropriations Act Sec. 567): What portion of the funds will be available only for activities of economically and socially disadvantaged enterprises, historically black colleges and universities, colleges and universities having a student body in which more than 40 percent of the students are Hispanic Americans, and private and voluntary organizations which are controlled by individuals who are black Americans, Hispanic Americans, or Native Americans,or who are economically or socially disadvantaged (including women)?	Contractor will be required to subcontract at least 10% to such enterprises
12. **Biological Diversity** (FAA Sec. 119(g): Will the assistance: (a) support training and education efforts which improve the capacity of recipient countries to prevent loss of biological diversity; (b) be provided under a long-term agreement in which the recipient country agrees to protect ecosystems or other wildlife habitats; (c) support efforts to identify and survey ecosystems in recipient countries worthy of protection; or (d) by any direct or indirect means significantly degrade national parks or similar protected areas or introduce exotic plants or animals into such areas?	NA
13. **Tropical Forests** (FAA Sec. 118; FY 1991 Appropriations Act Sec. 533(c)-(e) & (g)):	
a. **A.I.D. Regulation 16: Does** the assistance comply with the environmental procedures set forth in A.I.D. Regulation 16?	Yes
b. **Conservation:** Does the assistance place a high priority on	NA

conservation and sustainable management of tropical forests? Specifically, does the assistance, to the fullest extent feasible: (1) stress the importance of conserving and sustainably managing forest resources; (2) support activities whicb offer employment and income alternatives to those who otherwise would cause destruction and loss of forests, and help countries identify and implement alternatives to colonizing forested areas; (3) support training programs, educational efforts, and the establishment or strengthening of institutions to improve forest management; (4) help end destructive slash-and-burn agriculture by supporting stable and productive farming practices; (5) help conserve forests which have not yet been degraded by helping to increase production on lands already cleared or degraded; (6) conserve forested watersheds and rehabilitate those which have been deforested; (7) support training, research, and other actions which lead to sustainable and more environmentally sound practices for timber harvesting, removal, and processing; (8) support research to expand knowledge of tropical forests and identify alternatives which will prevent forest destruction, loss, or degradation; (9) conserve biological diversity in forest areas by supporting efforts to identify, establish, and maintain a representative network of protected tropical forest ecosystems on a worldwide basis, by making the establishment of protected areas a condition of support for activities involving forest clearance or degradation, and by helping to identify tropical forest ecosystems and species in need of protection and establish and maintain appropriate protected areas; (10) seek to increase the awareness of U.S. Government agencies and other donors of the immediate and long-term value of tropical forests; (11) utilize the resources and abilities of all

relevant U.S. government agencies; (12) be based upon careful analysis of the alternatives available to achieve the best sustainable use of the land; and (13) take full account of the environmental impacts of the proposed activities on biological diversity?

c. **Forest degradation:** Will assistance be used for: (1) the procurement or use of logging equipment, unless an environmental assessment indicates that all timber harvesting operations involved will be conducted in an environmentally sound manner and that the proposed activity will produce positive economic benefits and sustainable forest management systems; (2) actions which will significantly degrade national parks or similar protected areas which contain tropical forests, or introduce exotic plants or animals into such areas; (3) activities which would result in the conversion of forest lands to the rearing of livestock; (4) the construction, upgrading, or maintenance of roads (including temporary haul roads for logging or other extractive industries) which pass through relatively undergraded forest lands; (5) the colonization of forest lands; or (6) the construction of dams or other water control structures which flood relatively undergraded forest lands, unless with respect to each such activity an environmental assessment indicates that the activity will contribute significantly and directly to improving the livelihood of the rural poor and will be conducted in an environmentally sound manner which supports sustainable development? No

d. **Sustainable forestry:** If assistance relates to tropical forests, will project assist countries in developing a systematic analysis of the appropriate use of their total tropical forest resources, with the goal of developing a national program for sustainable forestry? NA

e. Environmental impact statements: Will funds be made available in accordance with provisions of FAA Section 117(c) and applicable A.I.D. regulations requiring an environmental impact statement for activities significantly affecting the environment? — Yes

14. **Energy** (FY 1991 Appropriations Act Sec. 533(c)): If assistance relates to energy, will such assistance focus on: (a) end-use energy efficiency, least-cost energy planning, and renewable energy resources, and (b) the key countries where assistance would have the greatest impact on reducing emissions from greenhouse gases? — NA

15. **Sub-Saharan Africa Assistance** (FY 1991 Appropriations Act Sec. 562, adding a new FAA chapter 10 (FAA Sec. 496)): If assistance will come from the Sub-Saharan Africa DAa'ccount, is it: (a) to be used to help the poor majority in Sub-Saharan Africa through a process of long-term development and economic growth that is equitable, participatory, environmentally sustainable, and self-reliant; (b) to be used to promote sustained economic growth, encourage private sector development, promote individual initiatives, and help to reduce the role of central governments in areas more appropriate for the private sector; (c) being provided in accordance with the policies contained in FAA section 102; (d) being provided in close consultation with African, United States and other PVOs that have demonstrated effectiveness in the promotion of local grassroots activities on behalf of long-term development in Sub-Saharan Africa; (e) being used to promote reform of sectoral economic policies, to support the critical sector priorities of agricultural production and natural resources, health, voluntary family planning services, education, and income generating opportunities, to bring about appropriate sectoral restructuring of the Sub-Saharan African economies, to — NA

support reform in public administration and finances and to establish a favorable environment for individual enterprise and self-sustaining development, and to take into account, in assisted policy reforms, the need to protect vulnerable groups; (f) being used to increase agricultural production in ways that protect and restore the natural resource base, especially food production, to maintain and improve basic transportation and communication networks,to maintain and restore the renewable natural resource base in ways that increase agricultural production, to improve health conditions with special emphasis on meeting the health needs of mothers and children, including the establishment of self-sustaining primary health care systems that give priority to preventive care, to provide increased access to voluntary family planning services, to improve basic literacy and mathematics especially to those outside @he.formal educational system and to @Rprove primary education, and to develop income-generating opportunities for the unemployed and underemployed in urban and rural areas?

16. Debt-for-Nature Exchange (FAA Sec. 463): If project will finance a debt-for-nature exchange, describe how the exchange will support protection of: (a) the world's oceans and atmosphere, (b) animal and plant species, and (c) parks and reserves; or describe how the exchange will promote: (d) natural resource management, (e) local conservation programs, (f) conservation training programs, (g) public commitment to conservation, (h) land and ecosystem management, and (i) regenerative approaches in farming, forestry, fishing, and watershed management. NA

17. Deobligation/Reobligation (FY I991 Appropriations Act Sec. 515): If deob/reob authority is sought to be exercised in the provision of DA assistance, are the funds being obligated for the same general purpose, NA

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and for countries within the same region as originally obligated, and have the House and Senate Appropriations Committees been properly notified?

18. Loans

a. **Repayment capacity** (FAA Sec. 122(b)): Information and conclusion on capacity of the country to repay the loan at a reasonable rate of interest — NA

b. **Long-range plans** (FAA Sec. 122(b)): Does the activity give reasonable promise of assisting long-range plans and programs designed to develop economic resources and increase productive capacities? — NA

c. **Interest rate** (FAA Sec. 122(b)): If development loan is repayable in dollars, is interest rate at least 2 percent per annum during a grace pe@iod which is not to exceed ten years, and at least 3 percent per annum thereafter? — NA

d. **Exports to United States** (FAA Sec. 620(d)): If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the recipient country to prevent export to the U.S. of more than 20 percent of the enterprise's annual production during the life of the loan, or has the requirement to enter into such an agreement been waived by the President because of a national security interest? — NA

19. **Development Objectives** (FAA Secs. 102(a), 111, 113, 281(a)): Extent to which activity will: (1) effectively involve the poor in development, by expanding access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities — Same answer as No. 6 (page 25)

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to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S.institutions; (2) 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; (3) support the self-help efforts of developing countries; (4) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (5) utilize and encourage regional cooperation by developing countries?

20. **Agriculture, Rural Development and Nutrition, and Agricultural Research** (FAA Secs. 103 and 103A):

a. **Rural poor and small farmers:** If assistance is being made available for agriculture, rural development or nutrition, describe extent to which activity is specifically designed to increase productivity and income of rural poor; or if assistance is being made available for agricultural research, has account been taken of the needs of small farmers, and extensive use of field testing to adapt basic research to local conditions shall be made.

Project is to imporve quality of production by small producers so as to increase exportability and income of rural producers who are mostly poor. Research is directed to local conditions.

b. **Nutrition:** Describe extent to which assistance is used in coordination with efforts carried out under FAA Section 104 (Population and Health) to help improve nutrition of the people of developing countries through encouragement of increased production of crops with greater nutritional value; improvement of planning, research, and education with respect to nutrition, particularly with reference to improvement and expanded use of indigenously produced foodstuffs; and the undertaking of pilot or demonstration programs explicitly

NA

addressing the problem of malnutrition of poor and vulnerable people.

c. **Food security:** Describe extent to which activity increases national food security by improving food policies and management and by strengthening national food reserves, with particular concern for the needs of the poor, through measures encouraging domestic production, building national food reserves, expanding available storage facilities, reducing post harvest food losses, and improving food distribution. NA

21. **Population and Health** (FAA Secs. 104(b) and (c)): If assistance is being made available for population or health activities, describe extent to which activity emphasizes low-cost, integrated delivery systems for health, nutrition and family planning for the poorest people, with particular attention to thr needs of mothers and young children, using paramedical and auxiliary medical personnel, clinics and health posts, commercial distribution systems, and other modes of community outreach. NA

22. **Education and Human Resources Development** (FAA Sec. 105): If assistance is being made available for education, public administration, or human resource development, describe (a) extent to which activity strengthens nonformal education, makes formal education more relevant, especially for rural families and ur@an poor, and strengthens management capability of institutions enabling the poor to participate in development; and (b) extent to which assistance provides advanced education and training of people of developing countries in such disciplines as are required for planning and implementation of public and private development activities. NA

23. **Energy, Private Voluntary Organizations, and Selected Development Activities** (FAA Sec. 106): If NA

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assistance is being made available for energy, private voluntary organizations, and selected development problems, describe extent to which activity is:

a. concerned with data collection and analysis, the training of skilled personnel, research on and development of suitable energy sources, and pilot projects to test new methods of energy production; and facilitative of research on and development and use of small-scale, decentralized, renewable energy sources for rural areas, emphasizing development of energy resources which are environmentally acceptable and require minimum capital investment;

b. concerned with technical cooperation and development, expecially with U.S. private and voluntary, or regional and international development, organizations;

c. research into, and evaluation of, economics development processes and techniques;

d. reconstruction after natural or manmade disaster and programs of disaster preparedness;

e. for special development problems, and to enable proper utilization of infrastructure and related projects funded with earlier U.S. assistance;

f. for urban development, especially small, labor-intensive enterprises, marketing systems for small producers, and financial or other institutions to help urban poor participate in economic and social development.

24. **Sahel Development** (FAA Secs. 120-21). If assistance is being made available for the Sahelian region, describe: (a) extent to which there is NA

international coordination in planning and implementation; participation and support by African countries and organizations in determining development priorities; and a long-term, multidonor development plan which calls for equitable burden-sharing with other donors; (b) whether a determination has been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of projects funds (dollars or local currency generated therefrom).

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C. CRITERIA APPLICABLE TO ECONOMIC SUPPORT FUNDS ONLY

1. **Economic and Political Stability** (FAA Sec. 531(a)): Will this assistance promote economic and political stability? To the maximum extent feasible, is this assistance consistent with the policy directions, purposes, and programs of Part I of the FAA?

NA. Funds are DA only.

2. **Military Purposes** (FAA Sec. 531(e)): Will this assistance be used for military or paramilitary purposes?

3. **Commodity Grants/Separate Accounts** (FAA Sec. 609): If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?

4. **Generation and Use of Local Currencies** (FAA Sec. 531(d)): Will ESF funds made available for moddodity import programs or other program assistance be used to generate local currencies? If so, will at least 50 percent of such local currencies be available to support activities consistent with the objectives of FAA sections 103 through 106?

5. **Cash Transfer Requirements** (FY 1991 Appropriations Act, Title II, under heading "Economic Support Fund," and Sec. 575(b)). If assistance is in the form of a cash transfer:

a. **Separate account:** Are all such cash payments to be maintained by the country in a separate account and not to be commingled with any other funds?

b. **Local currencies:** Will all local currencies that may be generated with funds provided as a cash transfer to such a coutnry also be deposited in a special account, and has A.I.D. entered into an agreement with that government setting forth the amount of the local currencies to be generated, the terms and conditions under which they are to be used, and the responsibilities of A.I.D. and that government to monitor and account for deposits and disbursements?

c. **U.S. Government use of local currencies:** Will all such local currencies also be used in accordance with FAA Section 609, which requires such local currencies to be made available to the U.S. government as the U.S. determines necessary for the requirements of the U.S. Government, and which requires the remainder to be used for programs agreed to by the U.S. Government to carry out the purposes for which new funds authorized by the FAA would themselves be available?

d. **Congressional notice:** Has Congress received prior notification providing in detail how the funds will be used, including the U.S. interests that will be served by the assistance, and, as approriate, the economic policy reforms that will be promoted by the cash transfer assistance?

ANNEX D

Economic Performance of the Pacific Islands

By

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June 1991

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Economic Performance of the Pacific Islands

Chapter 2 describes the major characteristics of economic performance of the Pacific island countries since the independence era of the 1970s, with a special focus on the more recent developments during the 1980s. It summarizes the detailed research findings presented in Working Paper No. 1. The objective is to provide a comprehensive picture of the performance of the private sector over the last two decades. To facilitate an understanding of the data generated in the Private Sector Project, extensive use is made of graphical analysis.

Economic growth and structural change

It is now widely established that although Pacific island economic growth maintained a satisfactory rate during the 1970s, performance during the 1980s was dismal. Table 2.1 presents figures for the five main SPDMC economies with the exception of Western Samoa for which no time series data covering the period exist.

During the 1970s economic growth ranged from 4 to 7 percent but fell between 2 and 4 percent in the 1980s. Given the population growth, GDP per capita dropped from an average of 2 percent during the 1970s to approximately zero for the group during the 1980s. During the 1980s Tonga revealed the highest rate of GDP growth per capita with 1.3 percent, and Vanuatu the lowest with a negative 1.1 percent. The adverse impact of high rates of population growth can also be seen in the Melanesian economies. Solomon Islands, which recorded the highest absolute rate of GDP growth, shows a disappointing drop of 0.6 percent in per capita terms. These results reinforce the observation that high rates of population growth can strongly erode the benefits of economic development. Comparisons made in Chapter 3 with other developing countries reveal a declining relative performance of the Pacific islands even when size and economic structure are taken into account.

A degree of caution is needed in interpreting GDP statistics. National accounts data are weak in all the SPDMCs, and the figures presented have been restricted to the more reliable estimates. Consequently, no data have been included for Western Samoa, for which figures exist only for the 1984-86 period. The omission of data for Western Samoa does not alter the overall assessment of the Pacific island economies as evidence suggests that Western Samoan performance has been one of the poorest. The data problem has been compounded in the Pacific islands region

Table 2.1 Average GDP and GDP growth per capita, 1970-90

	Fiji	Papua New Guinea	Solomon Islands	Tonga	Vanuatu
			GDP growth		
1970-80	4.7	3.8	7.5	3.7	NA
1980-89	2.0	1.7	2.9	1.9	1.9
			Per capita growth		
1970-80	2.6	1.7	3.9	2.8	NA
1980-89	0.5	-0.4	-0.6	1.3	-1.1

by the incentive to inhibit statistical measurement, which it is felt might lead to the erosion of least developed status, and the preferential terms, which this confers on the receipt of aid. Yet the conclusion remains that economic growth during the 1980s of the Pacific islands has been unacceptably low.

GDP and GDP per capita growth on a year-by-year basis for five countries are shown in Figure 2.1. The graphical description reveals not only the underlying trends during the period, but also the substantial year-to-year fluctuation that these economies experience. Cyclical movement in the terms of trade, adverse climatic conditions, and tropical cyclones are the major causes of the fluctuations. Commodity price instability was also found to be a contributing factor (Chapter 3). In Fiji's case the 1980s reveal a typical wave motion, which was generated by a sharp improvement in the terms of trade in the early 1980s, an onset of tropical cyclones in the middle period, and political disturbance at the end of the decade.

Theory and international empirical observation suggest that there is a strong association between increases in GDP per capita and change in economic structure. In other words, growth is positively associated with manufacturing and services having an increasing share of GDP. This theory would suggest that little structural change could be anticipated in the Pacific islands given the economic stagnation experienced during the 1980s. Such was the case for Fiji and Papua New Guinea, the two largest economies (Figure 2.2). However, the smaller economies represent an anomaly with respect to the relationship between changing structure and economic performance.

In the Fiji case the figure shows a fall in the share of agriculture and industry and the rising importance of services during the 1970s. Economic structure remained

virtually unchanged during the 1980s. These events are consistent with economic growth and stagnation during the two periods, respectively. The more recent resurgence of economic growth and development of a dynamic manufacturing sector in the Fiji economy at the end of the 1980s has been accompanied by a sharp increase in economic growth. However, this is not included in the data set used in the analysis. In case of Papua New Guinea there was an increase in the share of services in the late 1970s while the economy experienced a period of fiscal expansion but a decline thereafter as stagnation set in during the 1980s. During the latter period the share of primary industries increased as new mining ventures commenced. The share of manufacturing, however, remained largely static throughout the 1970s and 1980s.

In the Melanesian cases of Solomon Islands and Vanuatu, data are available only for the 1980s but reveal a decline in the share of primary industries and a rise in services. These developments occurred at a time when economic growth was not only low but also per capita growth was negative. Interestingly, the data suggest some rise in the share of industry in the case of Vanuatu, which, given the lack of manufacturing development, reflects growth in construction. These results reflect the poor performance of export agriculture, particularly copra earnings, rather than any structural change in these economies.

Information on the Polynesian economies is available only for Tonga, and again the share of the primary sector fell substantially with increases not only in services but also in industry. Tonga has enjoyed some manufacturing growth through its Small Industries Centre (SIC), and the data indicate that the share of manufacturing has increased. However, a significant increase in the share of industries is again attributable to growth in construction. Tonga has experienced a sharp decline in the level and value of copra production, which only in recent years has been offset to some extent by growth in diversified agriculture, particularly vanilla. Given the lack of industrial development in Western Samoa, structural trends are likely to be similar to either Solomon Islands or Vanuatu. In summary, many smaller SPDMCs display signs of premature maturity with rising shares of services and construction without the normally associated increase in GDP per capita.

While the preceding analysis indicates that Pacific island economic growth was poor and that there was little structural change at the aggregate level, it would be inappropriate to suggest that these economies have become ossified. In fact, significant changes have occurred during the period at the sectorial and commodity

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level that indicate the Pacific islands are responsive to changes in economic opportunities. Common to all has been an adjustment to depressed copra and coconut oil prices.

The changing structure of exports can be seen in Figure 2.3. Tourism receipts, with the exception of Fiji, have been excluded due to data limitations. However, they have become an important component of foreign exchange receipts for many of the economies.

The data for Papua New Guinea describe the changes between minerals and non-mineral exports and changes within the non-mineral sector. The pattern of development during the period indicates further concentration of investment in natural resource exploitation (mining, commodity agriculture, and forestry) and the failure to develop any significant exports of manufactures. By the end of the 1980s the share of "other" exports had fallen to 2 percent of the total.

The data for the Fiji economy indicate a similar dependency on a limited number of commodities with sugar and tourism dominating. The 1970s saw the resurgence of sugar production and a static nature in the structure of Fiji's other main exports. The later part of the 1980s saw some important restructuring of the economy with the share of gold, fish, garments and "other" items all increasing. These trends have continued with the emergence of a significant manufacturing sector based on garment production for export. Policy reorientation toward an outward looking export strategy coupled with the beneficial impact of the South Pacific Regional Trade and Economic Cooperation Agreement (SPARTECA) trade arrangements have encouraged these developments.

The Tongan economy shows the most marked change in the structure of exports among all the Pacific island countries, although exports as a whole have stagnated with the marked decline in coconut product exports. Coconut products represented nearly 80 percent of exports in the early 1970s, but by the end of the 1980s production had fallen to 20 percent. These trends reflect the unprofitable nature of copra production in terms of returns to labor. Farmers have, however, switched their labor resources to high value niche export crops such as vanilla, watermelons, and squash where Tonga appears to have developed a comparative advantage.

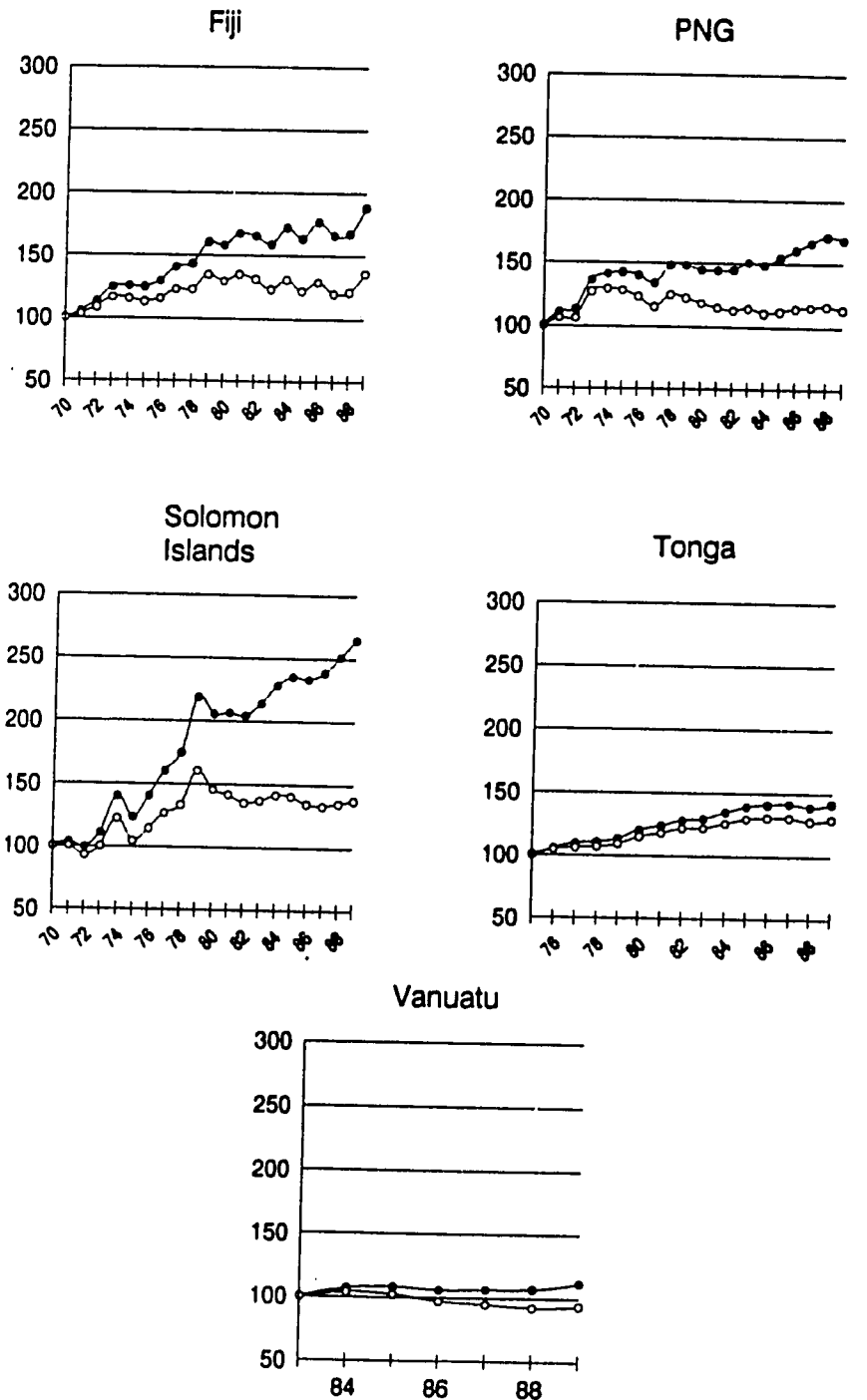

Figure 2.1 GDP growth and GDP growth per capita for the major Pacific island countries, 1970-89 (1970=100)

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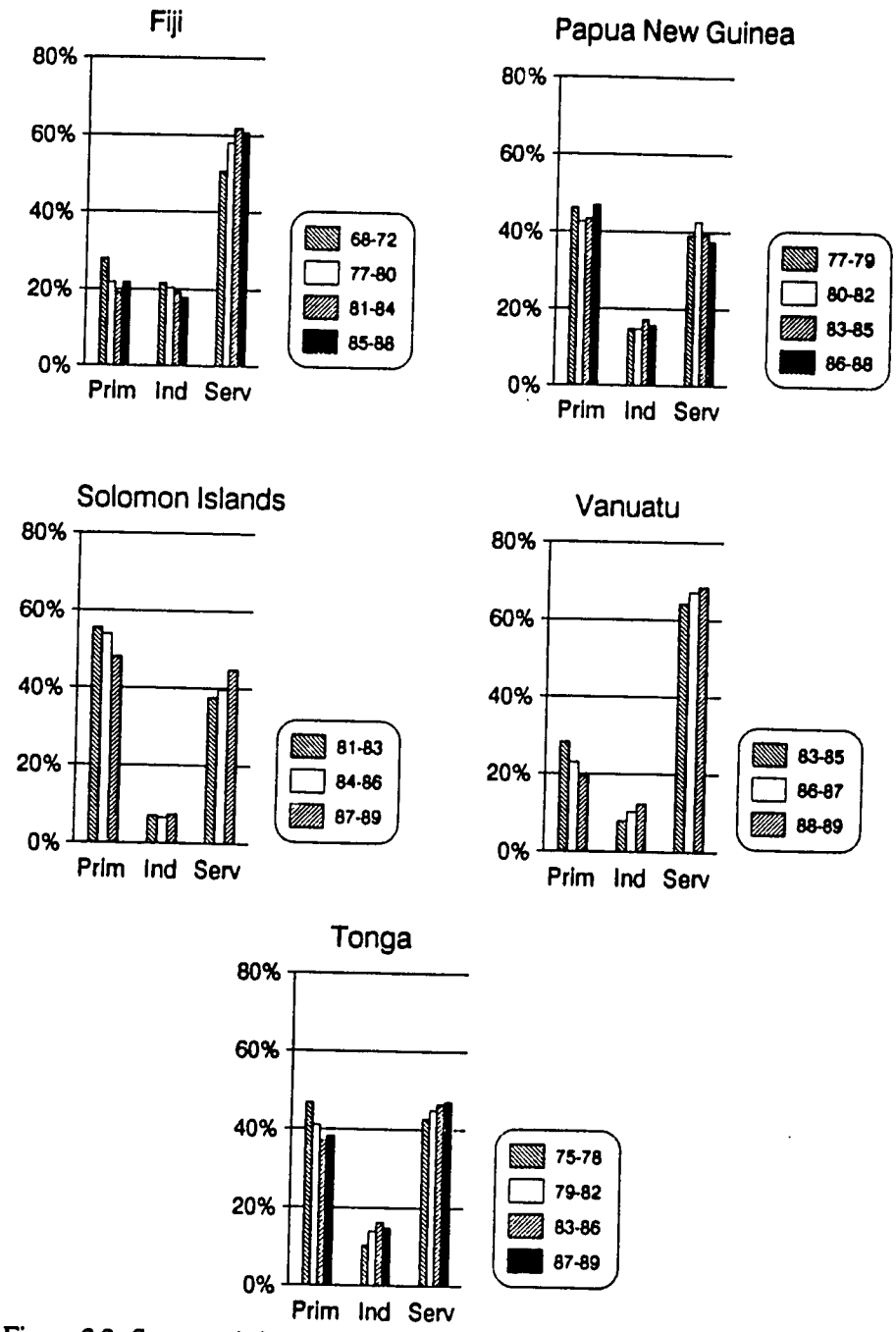

Figure 2.2 Structural change by major sector for the Pacific islands for selected years, percent of current price GDP

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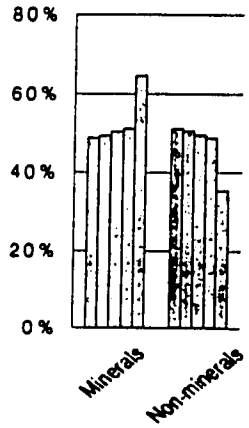
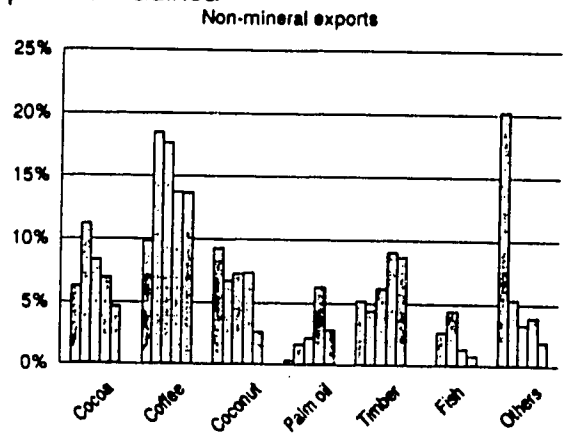
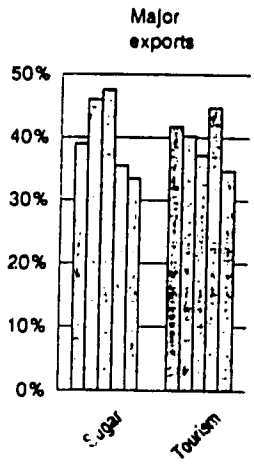
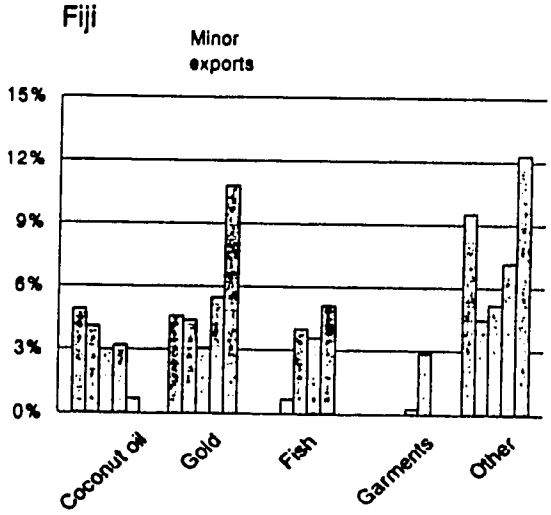
Papua New Guinea



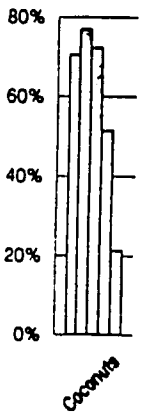


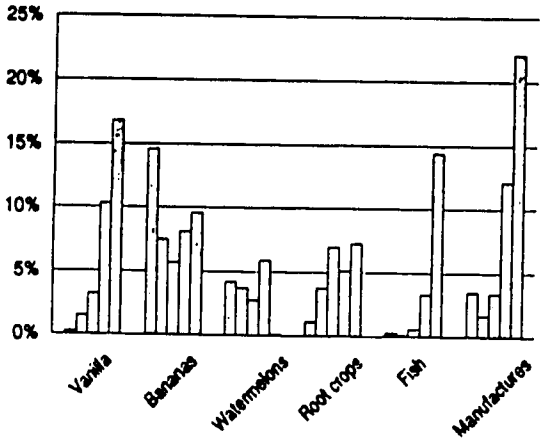
Fiji





Tonga





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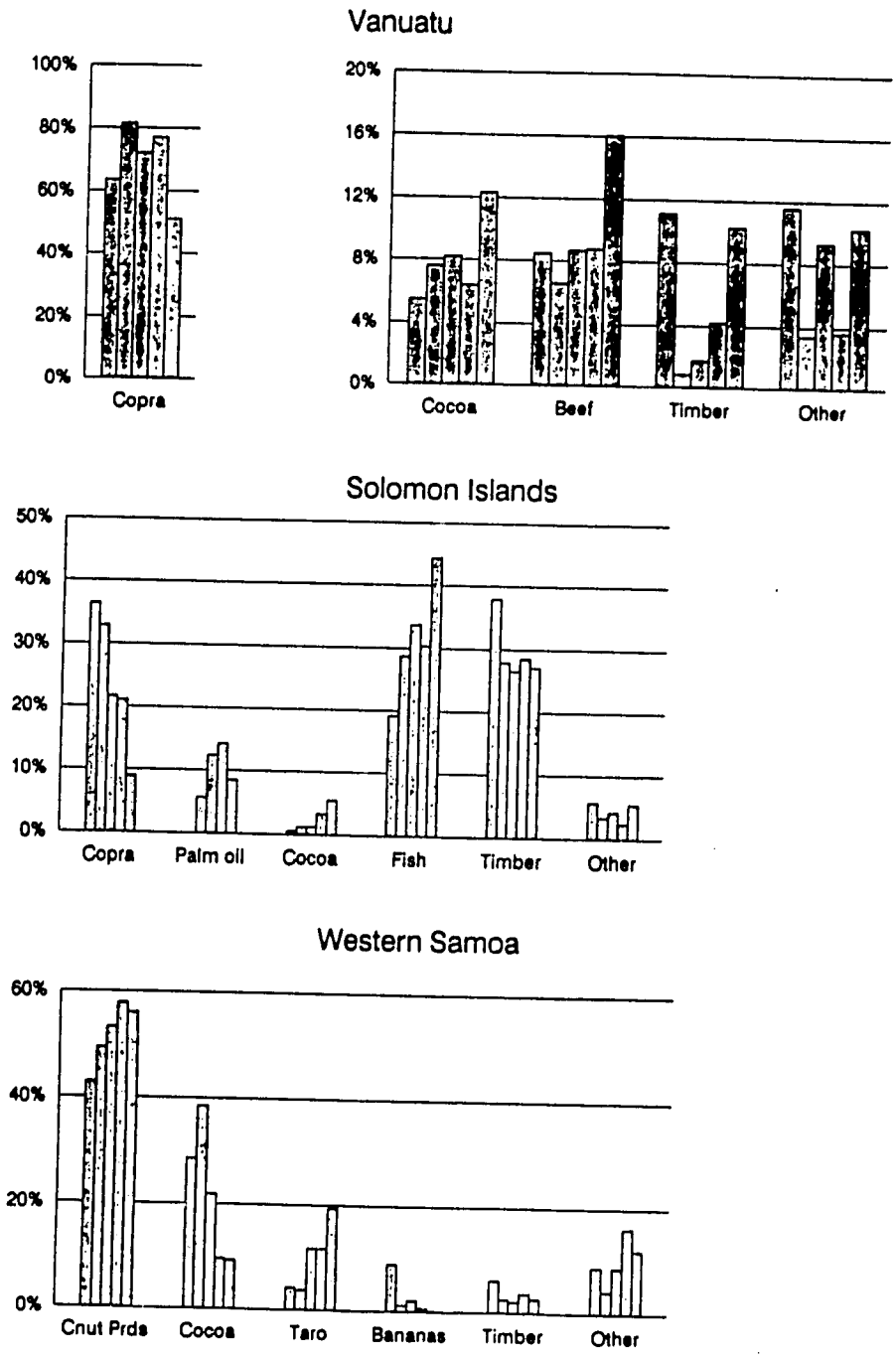

Figure 2.3 Structural change in components of exports for the Pacific islands for selected years between 1970-89, percent of total exports. (Each bar refers to a four year group.)

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There has also been quite a strong growth in manufactures, resulting from the establishment of the Small Industries Centre. While it must be reiterated that export production as a whole has stagnated, the substantial restructuring indicates an economy able to adjust and take advantage of more rewarding activities.

Western Samoa has seen an increase in the share of coconut products, which makes it unique among regional countries. However, this has been the result of the successful development of a coconut cream factory by the private sector. Production of cocoa, a traditional export, has fallen, while the export of taro to migrant Pacific island communities in New Zealand and Australia has become a major activity. However, unlike Tonga, Western Samoa has failed to develop any form of export manufacturing capability despite the fact that it was the first in the region to propose the development of an export free zone.

The Vanuatu economy displays both a concentration of commodity production in a few activities and a static structure during the majority of the period under review. Coconut production dominates and represents over 50 percent of total exports but, as elsewhere, has declined in significance in recent years. In the latter part of the 1980s attempts to diversify the economy have shown some success with increased production in both cocoa and the beef industry. However, the Vanuatu economy has reduced its dependence on primary commodity production with the establishment of a successful tourism industry whose gross foreign exchange receipts are greater than the total commodity exports. The Financial Center is also an important element of the economic activity whose exports represent approximately a quarter of export receipts.

Solomon Islands are wholly dependent on a limited range of primary commodities for export. However, within this specialization the economy had diversified its structure and reduced its dependence on copra production to less than 10 percent by the end of the 1980s. The main change in structure has been the rapid increase in exports of canned tuna. An efficient palm oil sector and cocoa production have shown growth.

The main conclusion to be drawn from the above discussion of the structure of exports is the concentration of production in a limited number of primary commodities, and this characteristic did not change during the 1970s or 1980s. Only Fiji and Tonga managed to develop any sort of manufacturing sector, but this contributed to only a minor part to the overall picture. However, the discussion

indicates that the Pacific island producers are responsive to changes in economic incentives, in particular, commodity prices. Pacific island economies thus display sensitivity to price movements but in the period reviewed have failed to diversify their economies into activities that might have led to a more satisfactory growth performance. The emphasis of the project has been on deriving appropriate policies and programs to make this transition via the private sector.

Employment

The pattern of employment in the SPDMCs is dominated by a large rural sector. Employment in the rural areas has centered around communal subsistence activities, although most households would now sell at least some marketable surplus. Table 2.2 provides some basic statistics on participation in economic production in the Pacific islands. The data presented are derived from the latest island population censuses, but are not always consistent or presented in a form suitable for cross country comparison.

The data on self-employment provide a rough indicator of the size of the traditional and rural agricultural sector. In some cases it has been divided into a cash and subsistence component. In all economies with the exception of Tonga the rural self-employed sector is larger than 50 percent of employment. In Fiji the majority of self-employment is for cash-farming, reflecting the more monetized nature of the economy, particularly relating to sugarcane production. In Papua New Guinea

Table 2.2 Percent distribution of labor force by activity status

	Fiji (1986)	Papua New Guinea (1980)	Solomon Islands (1986)	Tonga (1986)	Vanuatu (1986)	Western Samoa (1981)
Employees	42.2	16.1	16.0	47.8	26.0	42.0
Private sector	26.4	NA	NA	19.5	18.0	NA
Public sector	15.8	NA	NA	28.2	7.9	NA
Self-employment	50.3	81.0	84.0	43.2	74.0	58.0
Cash	37.1	39.8	6.1	NA	NA	3.8
Subsistence	13.2	41.2	77.9	NA	NA	54.2
Unemployment	7.5	2.8	NA	9.0	NA	NA

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subsistence farming is greater than half of all self-employment, where as for Solomon Islands and Western Samoa the data suggest the level of subsistence is even greater. These figures, however, probably reflect differences in census definitions rather than actual differences, since the Papua New Guinea economy is one of the most traditional in the region. While the data are obviously imperfect, they do provide an important guide to the structure of the island economies and the importance of the rural largely subsistence sector.

A notable feature of paid employment for the three countries for which data are available (Fiji, Tonga, and Vanuatu) is the high percentage in the public sector. This reflects the leading sector role assumed by governments, which, with the exception of Fiji, is being increasingly driven by aid.

Terms of trade

A question of emerging importance in the debate on Pacific island economic development is the question of whether there has been a deterioration in the terms of trade between export and import prices. A recent paper presented at the Third Pacific Islands Conference (Thirlwall 1990)* estimated that the terms of trade had deteriorated during the 1980s for a selection of Pacific island economies. These findings were strongly refuted in a World Bank (World Bank 1991)** review of the Pacific islands stating that "nothing could be further from the truth." The apparent contradictory findings from such eminent sources on this crucial indicator are surprising. Thus a further set of estimates of the terms of trade were derived.

Two sets of estimates were prepared with the normal indices and five year moving averages, which smooth commodity price fluctuations. Both estimates for each of the six main Pacific island economies are shown in Figure 2.4. The same data are presented in Table 2.3 and include the five year moving averages in the terms of trade for the 1970s and 1980s with and without the export of services.

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* Thirlwall, A., 1990. "The Performance and Prospects of the Pacific Island Economies in the World Economy." Plenary Address, Third Pacific Islands Conference of Leaders, April 9-11, 1990. Honolulu: Pacific Islands Development Program, East-West Center.

** World Bank. "Toward Higher Growth in Pacific Island Economies: Lessons from the 1980s." Report No. 9059-Asia, January 18, 1991.

The estimates suggest clearly that Pacific island terms of trade have deteriorated substantially since the beginning of the 1970s but that the rate of decline was generally lower in the 1980s compared to the 1970s. The set of graphs on the left-hand side of Figure 2.4 for the terms of trade indicate the substantial commodity price fluctuations to which Pacific island commodity exports are subject. The right-hand side graphs, the five year moving averages, iron these fluctuations and indicate the underlying trends. These results tend to confirm Thirlwall's suggestion that the terms of trade have deteriorated for the Pacific islands and refute those of the World Bank. These findings have an important bearing on the policy prescriptions derived from the Private Sector Project. A detailed discussion of the terms of trade estimation is presented in Working Paper No. 2.

The decline in the terms of trade (excluding services) should in fact come as no surprise to an observer of commodity price movements. All the major commodities that the Pacific islands export, with the exception of gold and sawn timber, have deteriorated relative to the exports of manufactures from the developed countries (comparison is made here with the World Bank's G5 MUV index). Granted, the real price of petroleum has fallen and the general decline in primary commodity prices would also reduce the price of Pacific island imports. However, the price of imports of manufactures has risen relative to primary commodity prices, and these imports typically represent more than 60 percent of total Pacific island import requirements. In summary, it would be counter-intuitive if the terms of trade had improved. The inclusion of services ameliorates this outcome, but the trend is still downward.

A further factor underscoring the decline in the commodity terms of trade is the importance of coconut products, which have dominated exports of the smaller Pacific economies. The price of this commodity declined more during the 1970-89 period than all other primary commodity exports from the Pacific islands with the exception of cocoa whose price fell to greater extent during the 1980s. A simple approximation to the terms of trade for these economies is simply the ratio of coconut oil prices to the MUV index, which is given in Table 2.3. The decline in this ratio explains a very substantial component of the deterioration in the terms of trade.

Table 2.3 Terms of trade for the Pacific islands including annual and five year moving averages, 1970-89

	Fiji	PNG	Solomons	Tonga	Vanuatu	W. Samoa	Coconut/MUV
			Goods and services (percentage)				
1972-80	-3.8	-5.8	0.5	-5.1	-2.9	-4.9	-5.8
1980-87	-1.8	-1.3	-3.6	0.3	-1.7	-6.3	-4.5
			Goods only (percentage)				
1972-80	-4.1	-5.8	0.5	-6.5	-4.2	-5.0	
1980-87	-2.1	-1.3	-3.6	-3.8	-5.6	-8.1	

The significance of these results needs emphasizing because of their implications for policy. Clearly, reliance on exports of traditional commodities such as copra has resulted in the erosion of real incomes and the generation of a surplus for development. However, this study does not recommend that the Pacific islands should turn inward as was the conclusion of the debate for the adoption of import substitution policies in Latin America in the 1950s. Development experience has not found this strategy successful, and it is the least recommended for the Pacific islands whose room for industrialization behind protective tariffs is negligible.

While the findings here are at odds with those of the World Bank as far as the terms of trade are concerned, they are in accord with the main policy recommendation reporting the need to seek out new export opportunities. Indeed, the declining terms of trade emphasize the need for the Pacific islands to seek out new export possibilities. The discussion reveals the fruits of export diversification given the improved terms of trade that result when services are included.

Tonga is an example, it was the only country whose terms of trade improved during the 1980s. This result arose not only from the sizable export of services but also from the substantial reduction in coconut exports and development of new high value agricultural exports. Western Samoa provides a counter example of an economy that failed to diversify. It continued to rely on cocoa and coconut products, and the terms of trade declined by a greater amount than all other Pacific island economies. However, while this study emphasizes the need for diversification and reduction in the reliance on "traditional" exports, every effort still needs to be maintained to improve the viability of these commodities through technological innovations and other cost reducing efficiency improvements. In many rural areas, for the foreseeable future, traditional exports provide the only available source of income on a significant scale.

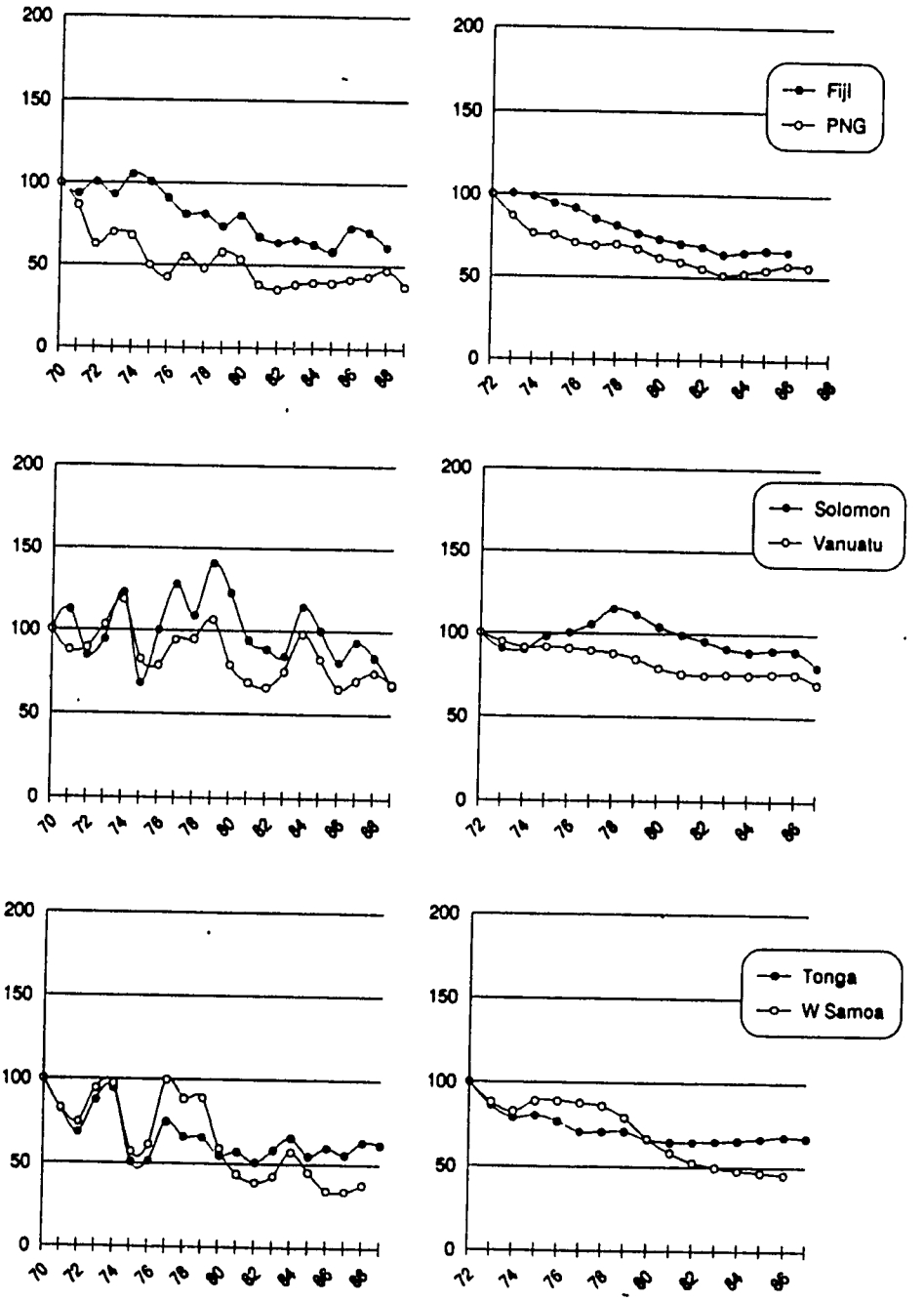

Figure 2.4 Terms of trade for selected Pacific island economies, 1970-89 (1972=100); right-hand graphs five year moving averages (1972=100)

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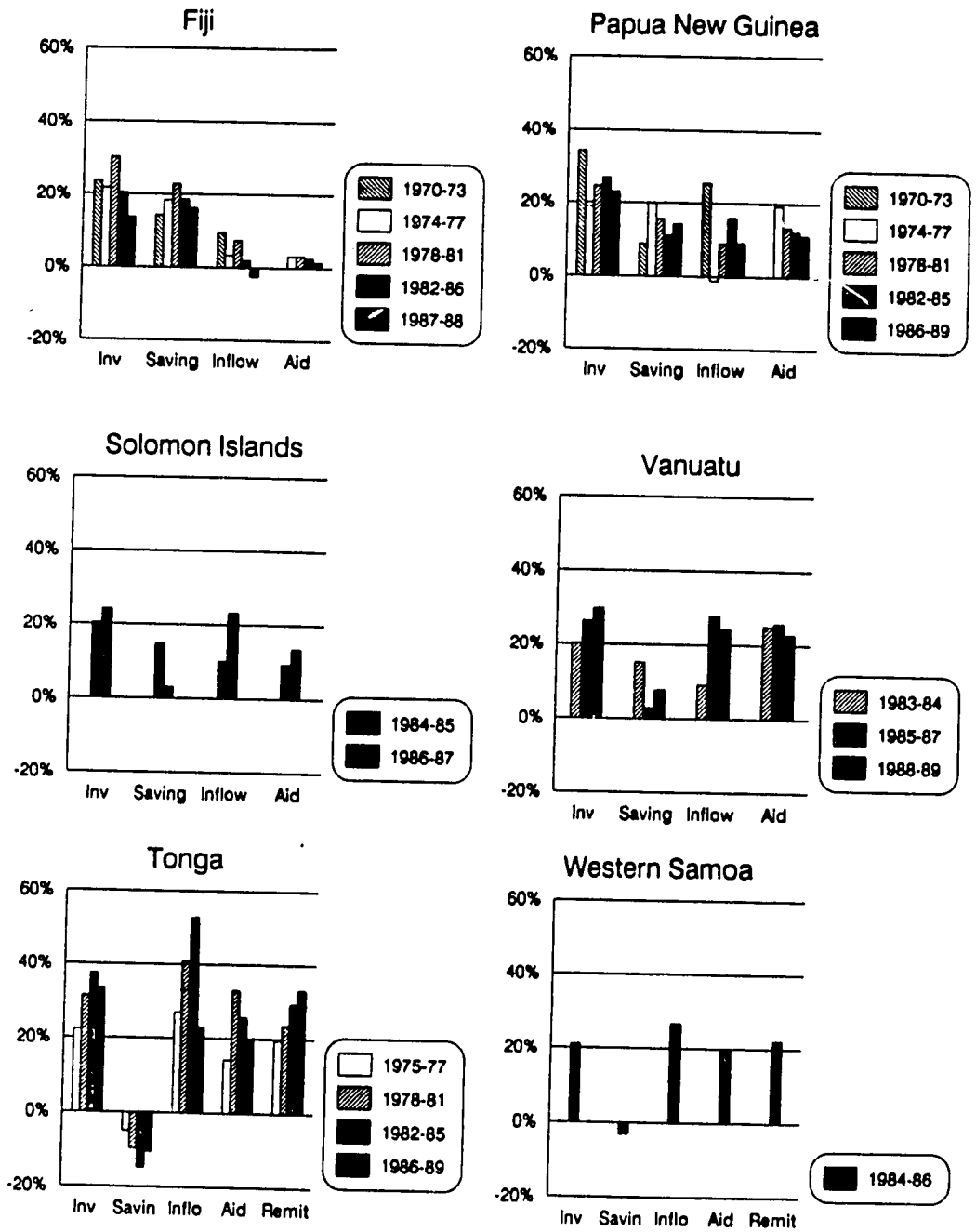

Figure 2.5 Investment, savings, capital inflow, aid, and workers remittances as a percent of current GDP during the 1970-89 period

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Investment, savings, and foreign transfers

The pattern of investment and savings in the Pacific islands during recent years is considered in this section. Data are not obtainable for the complete 1970-89 period, but what is available is presented in Figure 2.5. The rate of investment (excluding inventories) achieved in the Pacific islands has been high by developing country standards reaching in excess of 20 percent of GDP in most years. However, while investment has been high the associated rate of economic growth has been dismal, and an implicit Pacific island incremental capital output ratio is very high by world standards. International comparisons are developed further in Chapter 3.

While evidence on the destination of investment by institution is not presented, the majority has been in the public sector on infrastructure projects, which are often aid financed. Investment in the private sector represents a much smaller proportion of the total and would help to explain the lack of association between investment and growth in the Pacific islands. Public investment in infrastructure has proved to be a necessary, but not a sufficient condition for growth. This suggests that other binding constraints are in place, notably human resource development, and that more is required to encourage productive private sector investment. The Private Sector Project specifically addresses these issues.

Figure 2.5 also indicates trends in Pacific island savings rates, the level of capital inflow, and foreign aid. Domestic savings rates are determined as a residual from national accounts data, and the figures fluctuate substantially due to the unavoidable accumulation of national accounts errors. While investment rates have been high the reverse can be said about the rate of savings. Domestic savings range from negative rates in the case of Tonga and Western Samoa, to a figure of about 8 percent for Solomon Islands and Vanuatu, to 14 percent in Papua New Guinea, and 18 percent in Fiji. The lack of domestic savings is made up through substantial levels of capital inflow (of which development aid forms an essential ingredient) and remittances in the case of the Polynesian countries. Only in the case of Fiji do both foreign investment and aid play a relatively minor part in the economy and remittances are insignificant.

Aid receipts in Papua New Guinea and Solomon Islands represent about 10 percent of GDP, while Vanuatu, Tonga, and Western Samoa receive about 20 percent. In Papua New Guinea and Vanuatu the level of aid has fallen in recent years as

recurrent budgetary support has been withdrawn. If this component is ignored, the trend level of aid receipts has either remained static or increased. While there is talk of donor fatigue, there is reason to assume this level of receipts will not continue during the 1990s.

These results suggest that domestic resource mobilization has not been a constraint on investment or growth, although the project makes a strong case for greater efficiency in financial intermediation. The sizable source of financial resources has been channeled into investment that has failed to generate growth, which is therefore inefficient. Clearly, a major challenge for the Pacific islands is how to funnel the large available sources of official aid and remittances into productive activities, namely, the private sector investment. While the solutions to this problem are not easy, the process of financial intermediation has failed to establish an adequate conduit. These issues are addressed in Chapter 6.

The high volume of aid receipts in the SPDMC economies has had a variety of consequences not all of which are beneficial. The high volume of aid receipts has distorted the allocation of resources. Scarce human resources are attracted into a "booming" aid sector, and an overinflated public sector has been encouraged (Table 2.2). In the Pacific island economies the aid sector has become associated with "Dutch disease" consequences, which lead to currency overvaluation, economic stagnation in other parts of the economy, and a general attitude of dependency. Furthermore, aid can directly undermine private sector development by supporting government participation in production and marketing activities. This has been particularly evident in the agricultural sector (Working Paper No. 5). However, this is not to say that well designed aid programs do not have a crucial role to play in encouraging and facilitating private sector development. An integrated series of proposals to this effect are made in Chapter 10.

The aid situation is compounded in the Cook Islands, Tonga, and Western Samoa with the high level of migrants remittances, which have also reached in excess of 20 percent of GDP. The populations of these three Polynesian countries have in varying degrees access to Australia, New Zealand, and the United States. These economies have responded to the high wages in neighboring countries and to opportunities at home, through exporting their labor. The resulting flow of remittances supports the high level of domestic consumption and the associated level of negative savings. While migration may provide less of an avenue for future generations as immigration requirements tighten, family reunification will still

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provide a substantial outlet. It might also be expected that second and third generations would be less willing to support relatives in the islands. However, for the foreseeable future the export of labor will have a strong impact on domestic labor markets and consequently domestic production. Only activities yielding a high rate of economic return are undertaken, and others less profitable will be abandoned. The sharp decline of the Tongan copra industry is a prime example. Remittances do, however, potentially offer a substantial source of funds that could be tapped for productive investment. How this might be done was considered in the study of the Cook Islands Development Bank. Some of these recommendations are presented in Chapter 6.

The external sector

Equilibrium in the balance of payments has been maintained with few exceptions through responsible fiscal and monetary policies. Only in a few instances have imprudent policies led to external imbalance and a decline in foreign reserves. However, the external position in most Pacific islands is extremely fragile. Current levels of imports are maintained by export of a narrow range of commodities, tourism earnings, foreign aid, and workers remittances. Many factors affecting the flow of these receipts are outside the direct control of island governments. A variation in commodity export prices, a tropical cyclone, alteration in tastes affecting the demand for tourism, or changes in foreign government aid policy can all adversely affect foreign exchange receipts requiring rapid economic adjustments to maintain stability. Given the fragility in the external account, it is in many ways remarkable that adjustment has proceeded as efficiently as it has in most instances.

Table 2.4 Growth in export values (US$) and volumes during the 1970s and 1980s

	Values (percentage)		Volumes (percentage)	
	1970-80	1980-89	1970-80	1980-89
Fiji	17.4	1.7	3.4	2.5
Papua New Guinea	23.6	2.9	13.8	4.9
Solomon Islands	25.0	-0.1	7.0	5.0
Tonga	10.5	-0.5	3.7	-0.7
Vanuatu	6.5	0.8	-3.0	3.4
Western Samoa	13.6	-3.3	3.9	3.5
Non-oil producing developing nations	21.2	6.8		

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Figure 2.6 indicates some recent trends in the balance of payments of the six countries. The high dependency on trade is revealed through the ratio of imports to GDP. For the larger economies it ranges from about 40 percent of GDP and rises up to 60 percent in the most dependent cases. The ratio in each country has maintained a relatively constant relationship to GDP. This ratio has risen in times of substantial investment activity such as in Fiji during the beginning of the 1970s when considerable additions were made to the tourist plant and during the early part of the 1980s when several large infrastructure projects were undertaken. A similar trend is indicated in Papua New Guinea at the beginning of the 1980s with investment in the Ok Tedi mine and during a period of fiscal expansion. An upward trend is exhibited in Solomon Islands with a significant expansion in government expenditures at the end of the 1980s. However, the statistics suggest that the relationship between imports and GDP has not changed, which is consistent with a static economic structure; when variation has arisen, it has been due to changes in the composition of demand.

While the demand for imports has matched economic growth (or lack of it), Pacific island exports failed to keep pace with the average growth of exports from non-oil producing developing nations during the 1980s, although performance during the 1970s was satisfactory. These trends are revealed in Table 2.4. The volume of exports (division of export values by unit export prices) also stagnated between the two periods but to a lesser extent. These trends are reflected in the poor growth performance of the Pacific islands during the 1980s, and the reduction in exports contributed substantially to the decline.

Given the significance of export production in the structure of the Pacific island economies, it is to be anticipated that any variation in export growth would have immediate repercussions on economic performance.

While export growth has declined, the ratio of exports to GDP has remained relatively static for most island economies, as Figure 2.6 reveals. Only in the case of the Polynesian economies has this ratio declined. These forces are reflected in the trade deficit, and the ratio of export to imports has not varied significantly except for Tonga and Western Samoa where the ratio has fallen and the trade deficit has worsened substantially.

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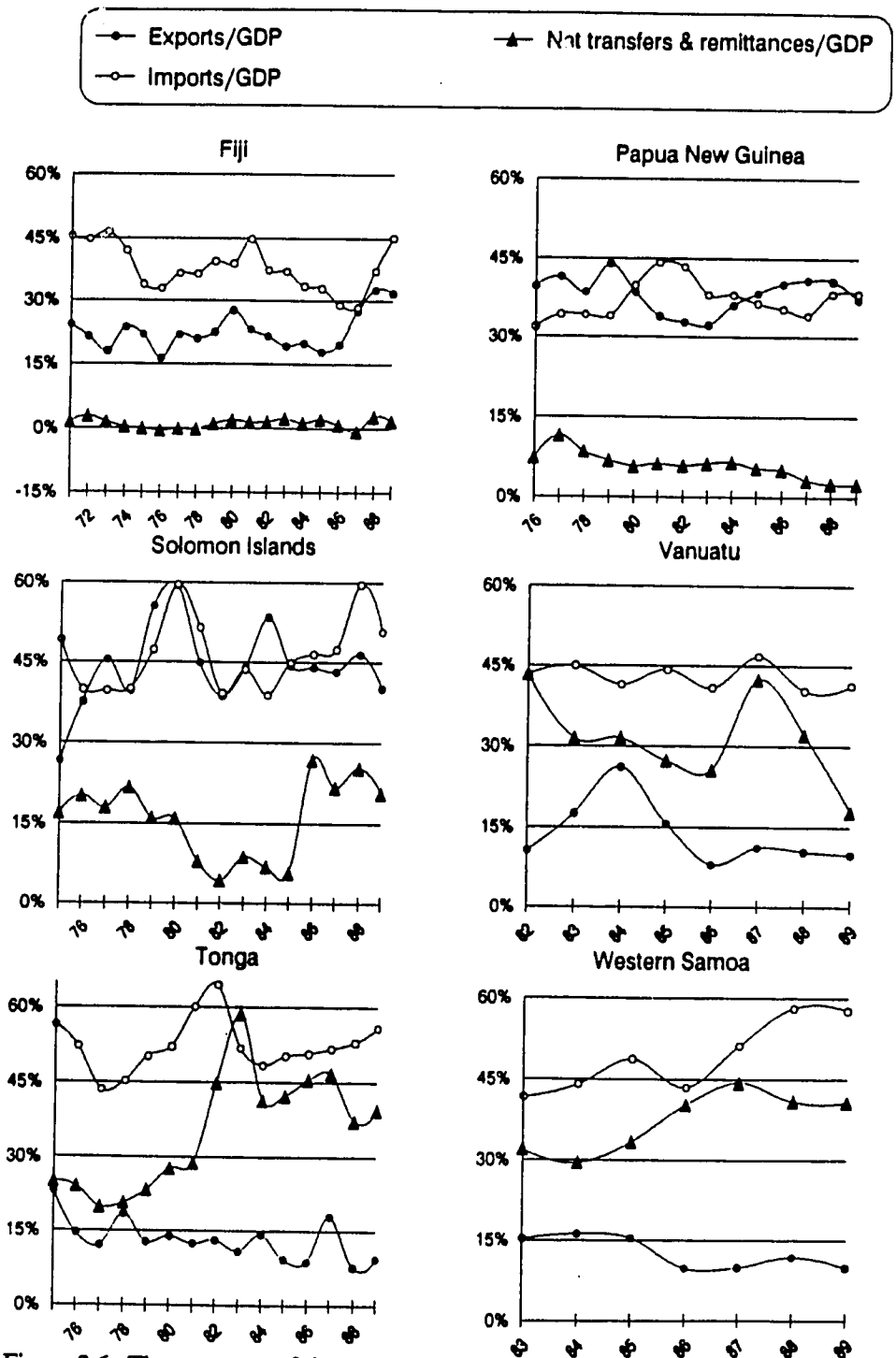

Figure 2.6 The structure of the external account: ratios of exports, imports, and net transfers and remittances to GDP during the 1970-89 period

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Figure 2.6 also provides some interesting information on the ratio of transfers to GDP and the very substantial contribution they make to external receipts in many island economies. In the figure both workers remittances and external aid are included. External transfers make only a small contribution to the Fiji balance of payments, and in Papua New Guinea the trend has been downward as budgetary support has been withdrawn. In the case of Vanuatu the graph indicates the very important contribution external aid makes to foreign exchange receipts. However, the trend has also been downward as budgetary support was phased out during the 1980s, although the graph peaks during the 1987-88 period with the sizable inflow of Stabex money to fund a shortfall in export earnings. For Solomon Islands the graph indicates that foreign aid is also very important and rose to high levels during the second half of the 1980s.

In the case of Tonga and Western Samoa transfers include both remittances and foreign aid. While the level of the latter has remained more or less static, the level of remittances has increased very substantially. In both economies the level of transfers has assumed an increasing significance and has balanced the deteriorating trade deficit. The increase in remittances for these economies essentially reflects the export of labor in response to higher earning possibilities overseas and the poor yields from production of traditional primary commodities. However, the reliance on remittances is precarious should barriers to migrant labor arise and as ties to home become weakened through time.

Conclusion

Pacific island economic performance during the 1980s was generally poor, and rates of economic growth barely managed to keep pace with the expansion in population. The failure of this group of economies to grow reflected poor export performance. In part, the poor export performance was the result of declining terms of trade. Although the rate of deterioration in the terms of trade during the 1980s was less than the previous decade, the long-run secular decline in export commodity prices throughout the 1970s and 1980s was a major disincentive to primary commodity production. However, while the declining terms of trade was an important explanatory variable in Pacific island economic performance, it was only one of many contributing factors, which are discussed elsewhere throughout this report.

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With economic stagnation came little change in economic structure. Perversely, the level of services rose in some Pacific islands reflecting "booming" aid sectors and large remittance flows. However, although economic structure remained largely unchanged, economic diversification was not insignificant and indicates that these economies are responsive to market forces and appropriate polices. Toward the end of the 1980s Fiji commenced deregulating its economic structure, and a substantial garment industry has been developed. In Tonga substantial shifts in the structure of exports have occurred with a very significant reduction in the reliance on coconut products whose international price has deteriorated significantly.

Although growth has been poor, investment in the Pacific islands has been high by developing country standards. The very weak relationship between growth and investment results from the fact that the majority of investment has been in public sector infrastructure projects. This type of investment although a necessary condition for growth is not sufficient. If there is insufficient private sector investment no amount of public sector activity will generate economic development.

Although domestic resource mobilization has been limited in most Pacific island economies, inadequate domestic savings has not inhibited investment or development. Sufficient sources of funds have usually been available from foreign sources. This points to a problem of financial intermediation: how to ensure that the sizable pool of resources flows into productive investment and economically efficient activities. The situation indicates the need to develop appropriate financial institutions, but it is particularly problematic in the Pacific islands, given the lack of private sector entrepreneurship.

The sizable volume of remittances in certain Pacific island economies permits the possibility of redirecting these flows from consumption purposes towards productive investment.

ANNEX E

Expanding Horticultural and Niche Commodity Export Trade between the Pacific islands and the Pacific Rim

By

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August 1990

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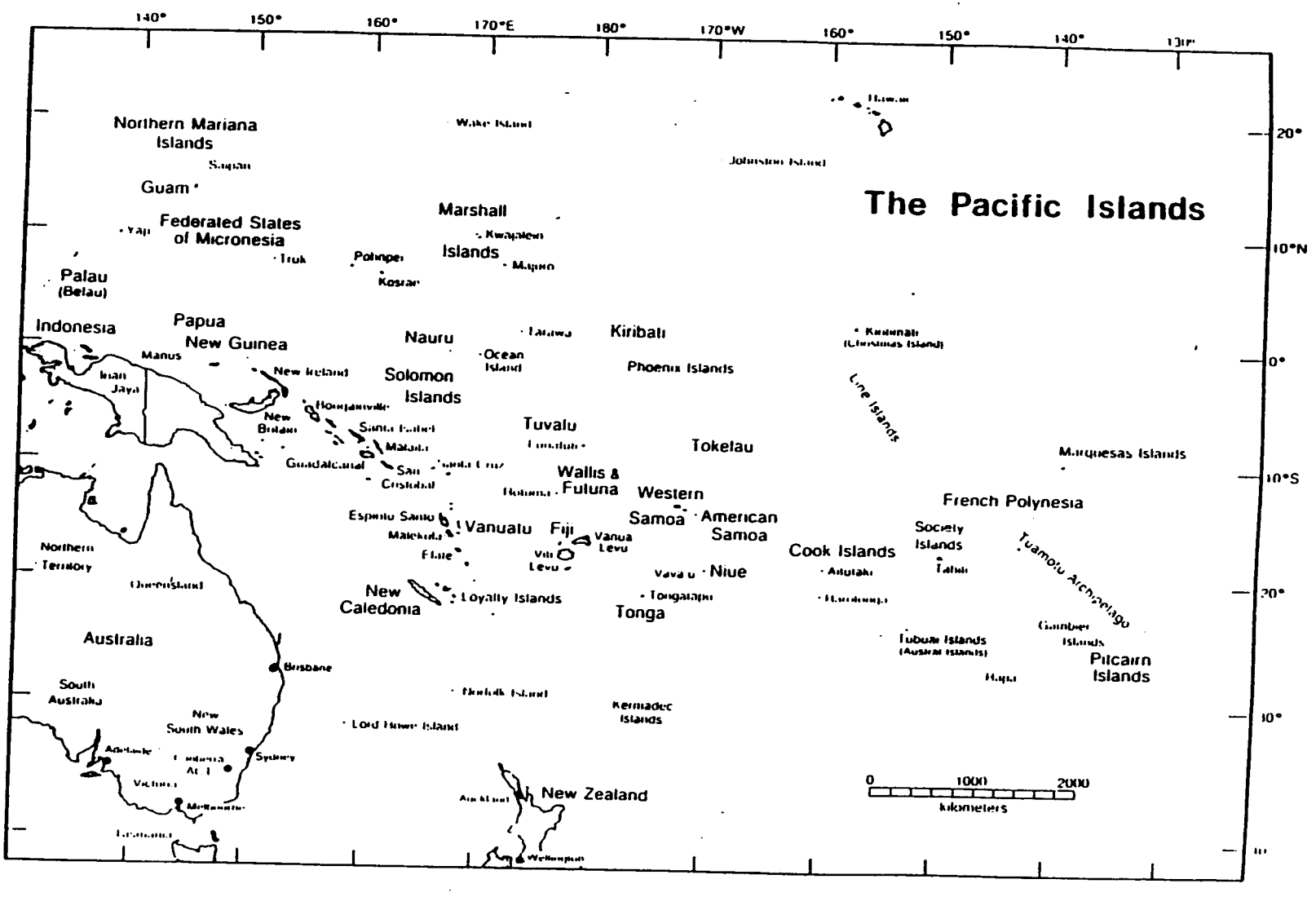
Acronyms

CAD	Commercial Agriculture Development Project (USAID)
CTAHR	College of Tropical Agriculture and Human Resources, University of Hawaii at Manoa
DHT	Dry heat treatment
EDB	Ethylene dibromide
FFGEA	Fiji Fresh Ginger Exporters Association
FIMCO	Friendly Islands Marketing Cooperative
MAFF	Ministry of Agriculture and Fisheries (Tonga)
MARC	Market Access Regional Cooperation Project (USAID)
NES	Nucleus Estate
NGIP	New Guinea Islands Produce
NMA	National Marketing Authority (Fiji)
PAMI	Pacific Asian Management Institute
PIDP	Pacific Islands Development Program of the East-West Center
PMC	Production, marketing, and consumption matrix
PSA	Plantation Support Association
SPC	South Pacific Commission
USDA	United States Department of Agriculture


The Pacific Islands
140°
150°
160°
170°E
180°
170°W
160°
150°
140°
130°
20°
10°N
0°
10°S
20°
30°
Northern Mariana Islands
Guam
Federated States of Micronesia
Palau (Belau)
Indonesia
Papua New Guinea
Marshall Islands
Nauru
Kiribati
Solomon Islands
Tuvalu
Tokelau
Wallis & Futuna
Western Samoa
American Samoa
Vanuatu
Fiji
Tonga
Niue
Cook Islands
French Polynesia
Society Islands
Tuamotu Archipelago
Marquesas Islands
Pitcairn Islands
Phoenix Islands
Line Islands
New Caledonia
Loyalty Islands
Australia
Northern Territory
Queensland
South Australia
New South Wales
Victoria
Brisbane
Sydney
Adelaide
Melbourne
New Zealand
Auckland
Wellington
Kermadec Islands
Lord Howe Island
Norfolk Island
Manus
New Ireland
New Britain
Bougainville
Santa Isabel
Malaita
Guadalcanal
San Cristobal
Espiritu Santo
Malekula
Efate
Vanua Levu
Viti Levu
Vava'u
Tongatapu
Aitutaki
Rarotonga
Tubuai Islands (Austral Islands)
Gambier Islands
Hiva
Tarawa
Ocean Island
Kwajalein
Majuro
Ponape
Kosrae
Truk
Yap
Saipan
Wake Island
Johnston Island
Hawaii
Kaiwalli (Christmas Island)
Irian Jaya
0
1000
2000
kilometers

Background

The export growth performance of Pacific islands agriculture over the last decade or so generally has been poor (Table 1 and Figures 1 and 2). Earnings from traditional commodities have tended to stagnate in the face of an exceptionally prolonged price trough, the inadequate levels of capital investment, and the generally low levels of management. Fortunately, the price of most commodities appears to have "bottomed," and a substantial price improvement can be expected over the next five years (Table 2). Yet under the existing management and investment regimes only a limited production response can be expected.

In the longer term the terms of trade can be expected to continue to move against traditional bulk commodities (Thirlwall 1990:55). The need for agricultural diversification is now recognized at the policy level, with horticultural, spice, and marine products prominent in the development plans of island countries.

In contrast to the traditional bulk products, these commodities have a high value added and often are perishable. They usually have minor importance in international trade, tending to find a small market niche in one or more of the Pacific Rim markets. Yet they can have a significant impact on a small island economy. Examples of such commodities from the region would include papaya (Cook Islands' major export earner), ginger (Fiji's third major export earner after sugar and copra), vanilla (Tonga's major export earner), and taro (Western Samoa's largest export earner).

The high unit value of these commodities means that significant industries can be built on relatively small land areas--prime consideration in the Pacific islands where the availability of suitable land often is a major constraint to development. These commodities also can sustain relatively high labor intensities and yet remain viable. For example, Fiji's ginger industry--generating over F$3 million in foreign exchange and employing the equivalent of an estimated 1,500 full-time jobs--is based on around 250 acres (McGregor 1988). Similarly, Tonga's almost 1,500 vanilla farmers earn over T$2 million in net foreign exchange from an estimated bearing area of 1,250 acres (MAFF estimates obtained from Friendly Islands Marketing Cooperative Ltd.).

Table 1. Commodity export earnings for Pacific island countries

	1980	1984	1985	1986	1987	1988
Fiji						
Coconut oil						
Volume index	100	135.3	92.9	107.7	46.2	44.1
Value (US$ million current prices)	8	17	7	4	2	4
Sugar						
Volume index	100	86	93.1	81.1	111.4	103.1
Value (US$ million current prices)	213	102	97	118	152	150
Cocoa						
Volume index	100	174	183	200	210	301
Value (US$ million current prices)	0.3	0.5	0.5	0.5	0.7	0.6
Total value (US$ million current prices)	221	120	105	123	155	155
Papua New Guinea						
Coffee						
Volume index	100	106.5	87.5	114.4	138.6	87.9
Value (US$ million current prices)	109	117	116	217	153	138
Cocoa						
Volume index	100	122.7	111.2	111.2	124.8	122.3
Value (million US $ current prices)	52	71	62	59	64	55
Copra and coconut oil						
Volume index (copra)	100	104	114	101	93	81
Value (US$ million current prices)	64	42	56	21	33	44
Oil palm						
Volume index	100	389	371	366	292	316
Value (US$ million current prices)	19	80	61	29	27	44
Total value (US$ million current prices)	244	310	295	326	277	281
Kiribati						
Copra						
Volume index	100	163	149	66	64	170
Value (US$ million current prices)	3	6	3	0.3	0.9	3
Total value (US$ million current prices)	3	6	3	0.3	0.9	3
Solomon Islands						
Copra						
Volume index	100	133	138	104	85	69
Value(US$ million current prices)	9	24	15	3	5	7
Cocoa						
Volume index	100	386	480	558	788	
Value (US$ million current prices)	0.6	3	3	4	5	4
Oil palm						
Volume index	100	121.3	119.1	92.6	74.1	87.1
Value (US$ million current prices)	8	14	9	3	4	8
Total value (US$ million current prices)	18	41	27	10	14	19

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Tonga						
Coconut products						
Volume index (copra purchases)	100	45	42	63	31	
Value (copra, desiccated coconut, coconut oil, US$ million current prices)	5	5	2	1.8	1.7	1.1
Bananas						
Volume index	100	166	117	155	146	
Value (US$ million current prices)	0.4	0.4	0.6	0.7	1.2	0.6
Total value (US$ million current prices)	5	5	3	3	3	2
Vanuatu						
Copra						
Volume index	100	143	118	125	98	98
Value (US$ million current prices)	6	28	13	4	7	9
Cocoa						
Volume index	100	90	113	147	153	100
Value (US$ million current prices)	0.9	1.4	1.3	1.8	2	1
Total value (US$ million current prices)	7	29	14	6	9	10
Western Samoa						
Coconut products						
Volume index (coconut oil)		100	115	114	104	91
Value (US$ million current prices)	8	11	9	5	6	9
Cocoa						
Volume index	100	47	38	58	54	31
Value (US$ million current prices)	3	1.1	1	1.4	1.3	0.6
Total value (US$ million current prices)	11	12	10	6	7	10

Sources: IMF, International Financial Statistics (various issues)
Government of Fiji, Current Economic Statistics (various issues)
Fiji National Marketing Authority, Cocoa Export Statistics (unpublished)
Bank of Papua New Guinea, Quarterly Economic Bulletin (various issues)
Government of Kiribati, 1988 International Trade Import and Exports
Central Bank of Solomon Islands Annual Report (various issues)
Reserve Bank of Vanuatu Quarterly Economic Review (various issues)
Central Bank of Samoa, Bulletin (various issues)

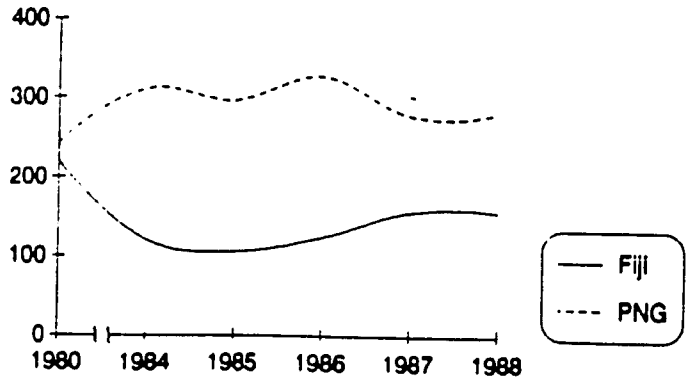

Figure 1. Total commodity export values, large Pacific island countries (US$ million)

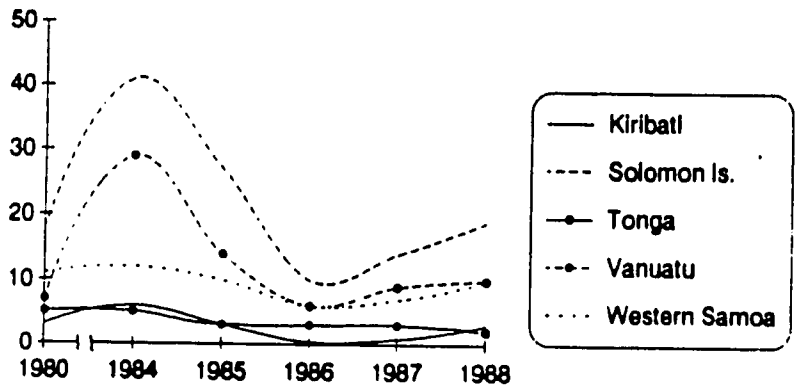

Figure 2. Total commodity export values, small Pacific island countries (US$ million)

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Table 2. Price forecasts of major commodities exported by the Pacific island economies

	1989	1990	1995	2000	% change 1989-95
Coffee (¢ per kg)	287	267	364	492	26.8
Cocoa (¢ per mg)	127	117	142	264	11.8
Sugar ($ per mt)	278	364	363	525	30.5
Palm oil ($ per mt)	400	443	634	724	58.5
Coconut oil ($ per mt)	550	535	790	915	43.6
Copra ($ per mt)	370	430	565	651	52.7
Copper ($ per mt)	2,600	1,850	2,450	3,000	-5.8
Gold ($ per ounce)	390	380	420	520	7.7

Opportunities for Horticultural Development

In varying degrees countries of the region have certain important, inherent advantages in the production of horticultural export commodities. These advantages are quarantine status, geographical location, trade agreements, and the linkage of horticultural product development with tourism.

1. Quarantine Status

The isolation of the islands has meant that they have been essentially free from major pests and diseases. This enviable quarantine status has, until recently, given Pacific island producers access to markets from which their competitors are excluded. For example, Australia and Hawaii are excluded on quarantine grounds from the major Japanese market for mangoes. Unfortunately, the valuable yet fragile resource of quarantine status is now threatened because of the antiquated treatment facilities being operated by government departments and because of the inadequate number of institutions and resources available to enforce quarantine and quality control standards. The immense economic cost, in terms of potential income foregone, of not maintaining and enhancing an island country's quarantine is only now starting to be recognized by the region's policymakers.

2. Geographical Location

Located in the southern hemisphere, the Pacific islands have the potential to be off-season suppliers for a range of horticultural commodities. For example, because ginger can be harvested only in the first half of the year

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in the northern hemisphere, a market niche has been left in North America that Fiji has been able to successfully exploit. Similarly, for the Japanese squash market, the period from November to early January is one of short supply and relatively high prices (Figure 3), which coincides with the production period for the Pacific islands. In the highlands of Papua New Guinea, a rare combination of altitude, latitude, and fertile soil, can be found that provides a unique set of conditions for a range of floriculture and other horticultural products. Similarly, the climatic conditions found in some of the islands appear to provide ideal growing conditions for certain nuts, such as macadamias and cashews, which have been undersupplied on the world markets.

3. Trade Agreements

Horticultural commodities have duty free access to Australia, New Zealand, and North America. Producers with air links have the opportunity to competitively sell fresh tropical produce to the urban markets of Sydney, Melbourne, Auckland, and Honolulu, which have combined populations in excess of 15 million and are within four hours' flying time. Furthermore, these cities are made up of substantial Pacific island and Asian populations that provide substantial markets for products such as root crops. For example, a recent study of the Australian market for fruits and vegetables from Pacific island countries pointed to the fact that 500,000 residents of Sydney or Melbourne were born in either Asia or the Pacific islands (Hardin and Associates 1990:3).

4. The Linkage with Tourism

For a small island economy a substantial tourism sector can provide the basis for a significant horticultural sector. Tourism will generate the essential air cargo space at a competitive cost. The experience of Hawaii's papaya and floriculture industries vividly illustrates this case. These industries, with a farm value exceeding US$60 million, only exist in their present form because exporters have access to frequent and low-cost wide-body air freight from Honolulu to North America (around 250 per week) and Japan (around 110 per week).[1] Thus, the freight service available to Hawaii's high value horticultural industries is a direct byproduct of a booming tourist sector and is in a sense subsidized by that industry.

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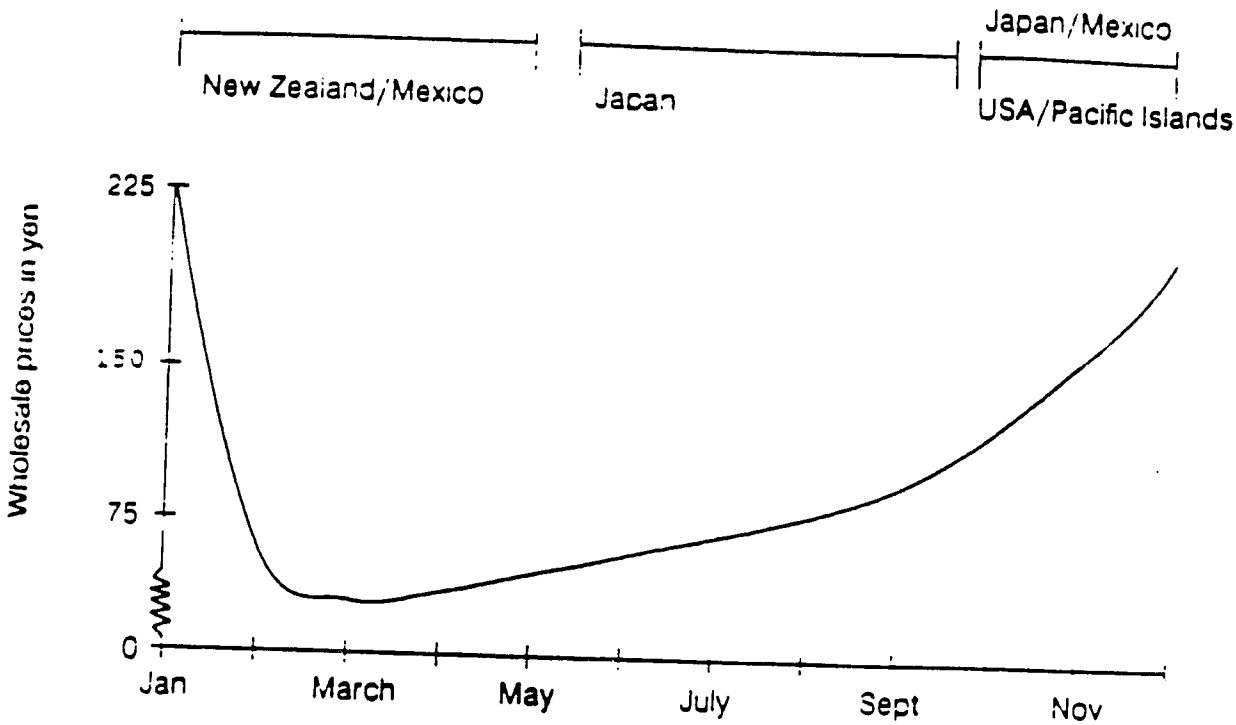

Figure 3: Japanese squash supply calendar

On a much smaller scale, tourism in the Cook Islands, Fiji, and more recently Vanuatu has created similar opportunities. The development of the Cook Islands papaya industry followed the expansion in tourism that created backloading capacity into the Auckland market. The expected growth in Pacific island tourism will bring with it substantial opportunities for horticultural development. For some commodities tourism can provide an important domestic base around which a significant horticultural and niche commodity export industry can be based as illustrated by Hawaii's macadamia nut industry. Hawaii is the world's most important producer of macadamia nuts, the state's most important agricultural diversification crop, with a wholesale value well in excess of US$100 million. This industry has been developed around supplying the domestic tourist-driven domestic market, where some 60 percent of production is sold within the state (University of Hawaii 1987:2). Fiji, with FAO technical assistance, is now considering the feasibility of establishing a macadamia nut industry. The necessary conditions for success are apparently good agronomic conditions and the prospect of an expanding tourism sector. The Cook Islands and Vanuatu look to establish gourmet organic (not fertilizer and chemicals) coffee processing industries using the tourist market as a base, in much the same way that Hawaii's Kona coffee industry has developed. Vanuatu's fledgling black pepper could be successfully developed along the same lines.

The achievements of Hawaii's diversified agriculture provide a measure of what can be achieved by an island economy. The farm value of Hawaii's horticultural and niche commodity exports is estimated at US$150 million, with macadamia nuts, flowers and nursery products, papaya, coffee, and ginger root dominating (Table 3). Hawaii is an integral part of the United States and thus the mainland has had an overwhelming influence on the state's agricultural development by providing markets and investors. Yet the economic structure, production possibilities, market opportunities, and constraints in Hawaii and the Pacific islands are more similar than they might seem. With the exception of the macadamia nut industry, diversified agriculture is characterized by smallholdings. Two notable examples of successful Hawaiian diversification efforts, papaya and root ginger, have required relatively small land areas. Furthermore, the state's diversification has focused on the relatively isolated island of Hawaii (the Big Island), with the attendant transportation problems similar to those in the Pacific islands. Additionally, the fortunes of Hawaii's horticultural development efforts have been closely linked to tourism, as is expected to be the case in the Pacific islands.

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Table 3. Selected Hawaiian agricultural production, 1980-88

	1980	1981	1982	1983	1984	1985	1986	1987	1988
SUGAR									
1,000 tonnes sugar raw value	1,007	1,048	983	1,044	1,062	996	1,027	979	928
Farm value ($1,000's)	594,100	314,200	343,900	396,500	382,900	331,900	348,400	325,000	324,000
PINEAPPLE									
1,000 tonnes fresh equivalent	647	657	636	670	722	556	636	692	659
$1,000 fresh weight	226,540	217,590	206,040	219,000	249,600	222,500	238,400	251,400	247,000
MACADAMIA NUT									
Tonnes in-shell	15,145	15,146	15,132	16,656	17,101	19,056	20,276	20,402	23,130
Farm value ($1,000's)	24,174	26,454	27,136	23,926	26,088	30,450	35,200	35,868	40,950
FLOWERS & NURSERY PRODUCTS									
Farm value ($1,000's)	27,688	29,482	36,600	36,165	38,905	44,162	49,132	55,767	59,646
PAPAYA									
Tonnes fresh equivalent	29,030	30,114	23,927	27,851	36,515	27,397	27,669	29,912	30,805
Farm value ($1,000's)	9,964	12,413	11,484	11,591	9,196	8,579	11,123	11,050	12,354
COFFEE									
Tonnes parchment equivalent	653	1,002	449	1,270	816	839	1,315	708	787
Farm value ($1,000's)	2,304	4,420	2,129	6,300	4,813	5,180	8,700	4,845	6,600
GINGER ROOT									
Tonnes	730	1,297	1,647	2,331	2,291	2,460	2,676	4,487	3,616
Farm value ($1,000's)	1,090	2,179	3,350	2,806	2,280	4,465	4,779	4,523	5,022

Source: Hawaii Agricultural Statistics Service (various issues).

The Horticultural Export Performance of the Pacific Islands

Based on the advantages outlined above, a modest trade has developed, mainly to New Zealand, North America, and more recently Japan. The New Zealand imports of fresh fruits and vegetables from the islands now exceed NZ$15 million (Government of New Zealand 1987). Western Samoa's official taro exports, prior to Cyclone Ofa, were around WS$6 million (Table 4). Fiji now exports in excess of F$3 million worth of ginger products to North America and Japan (Table 5). In 1988/89 Tonga's vanilla exports exceeded T$2 million and are expected to increase further this year (Table 6). The value of the Cook Islands papaya exports is estimated at NZ$5 million, making it that country's largest agricultural export earner (Table 7).

Table 8 summarizes the current status and prospects for a range of horticultural and niche commodities for selected Pacific island countries.

Yet the overall horticultural export performance has been well below the expectations of planners. The performance of the Australian market has been particularly disappointing; the total imports (1988-89) of fruits and vegetables from the Pacific islands are a mere A$2 million (Hardin and Associates 1990:8). The reasons for the gap between performance and perceived potential lie mainly with supply, not with demand. Marketing, which includes the quality and continuity of supply, and not markets per se, has proved to be a paramount constraint to horticultural export development in the Pacific islands. Contributing factors have been the adverse impact of direct government involvement, and inadequate institutional and infrastructure support. In this environment private investment has been slow to materialize and thus management has been a major constraint.

Some of the constraints to horticultural development in the Pacific islands together with a few suggestions for their alleviation, are discussed below.

The special marketing problems of niche commodities

A niche market can be so sufficiently small in absolute terms that a Pacific island exporting country could, and sometimes does, influence prices. For example, the price of fresh ginger in Los Angeles in August is directly determined by the quantity supplied by Fiji. Similarly, the price of papaya on the Auckland market is correlated to Cook Islands exports. The unusual position of being a price setter creates a set of problems relating to orderly marketing that previously has not been experienced by

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Table 4. Western Samoa taro exports, 1983-88

Year	Export ('000 cases)	Value (WS$'000 FOB)
1983	110	2,371
1984	137	2,753
1985	220	5,113
1986	188	4,335
1987	224	5,077
1988	191	5,201

Source: Bulletin, Central Bank of Samoa, March 1989.

Table 5. Fiji ginger exports, 1984-89

Year	Export (tonnes)	Value (F$'000 FOB)
1984	2,486	2,004
1985	2,056	2,230
1986	2,896	3,001
1987	2,828	2,789
1988	2,419	3,274
1989	2,674	3,598

Source: Government of Fiji Current Economic Statistics (various issues).

Table 6. Tonga banana, root crop, and vanilla exports ($T'000)

	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89
Bananas	217.0	488.0	768.7	1041.6	1859.0	797.6	517.4
Root crops	0.0	0.0	367.4	233.2	320.7	514.6	788.0
Vanilla	592.0	564.0	1126.5	1182.1	1418.0	1191.2	2504.2
Total agricultural exports	809.0	1052.0	3931.1	4267.2	5778.2	4570.3	6632.8
Total exports	3478.0	7783.0	10247.6	7524.0	9372.0	8060.6	10922.5

Table 7. Cook Islands papaya exports, 1980-88

Year	Exports (tonnes)	Value (NZ$'000 FOB)
1980	202	111
1981	291	189
1982	410	377
1983	430	490
1984	748	471
1985	645	482
1986	829	555
1987	385	472
1988	994	417

Source: Government of the Cook Islands (various issues).

Pacific island commodity exporters. Even the largest bulk commodity exporters (Fiji sugar and Papua New Guinea coffee) have no influence on the world prices for those commodities. Tohwl

Under these circumstances disorderly marketing can and has adversely affected the business environment and undermined investor and buyer confidence. Fiji's ginger exports to North America vividly illustrate this point.[2] It was only through the formation and actions of the Fiji Fresh Ginger Exporters Association (FFGEA) that a manageable degree of order and buyer confidence has been restored (for details see McGregor 1988). To quote the 1988 report of the FFGEA North American Liaison Officer:

> Vancouver, which had the reputation for years of being the most disorderly market in North America, has enjoyed price stability throughout this season for the first time in its history, much to the satisfaction of distributors, wholesalers, and retailers--thus proving the creation of a marketing environment is in the best interest of all parties involved in the industry.

Thus, for this type of niche commodity commercial industry associations can play a crucial role in creating a marketing environment that facilitates investor and buyer confidence. Government also has a vital function in creating an environment that

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TABLE 8. Status and prospects for horticultural and other high-value niche commodity exports from the Pacific islands

Commodity	Current status	Growth prospects	Growth constraints, and requirements	Opportunities for MARC/CAD assistance
FIJI				
Ginger				
· Fresh	Mature industry based on North American market (fob value approximately F$2 million)	Modest in medium term with improvements in quality and marketing arrangements. Real value could double over the next decade.	Quality needs to be improved. Institutional reform in industry required.	Assistance to Fiji Fresh Ginger Exporters Association's extension service. Facilitating technical cooperation betwee Hawaii and industries.
· Processed Immature	Long-standing industry that has experienced recent expansion in exports to Japan (fob value around F$1.5 million).	Substantial if Japanese market can be stabilized. A sizable market is available in the EEC. Market opportunities are likely to exist in the U.S.	Consistent high quality required. Capital investment in processing. Privatizing of processing and marketing. Management upgrading.	Identification of possible joint venture partners. Market identification and market assistance for U.S. market.
· Puree	Some off-grade mature ginger sold to Hawaii-based buyer for processing in California	Fresh convenience products a rapidly expanding market in U.S. With Fiji's large percentage off-grade mature ginger is the prospect of producing ginger puree.	Technology and capital investment Foreign investor or joint venture partner probably required. A large spice companies such as McCormick should be approached.	Assistance in project preparation. Evaluation of market prospects and requirements. Identification of potential investors.
Papaya	Industry in place for a number of years and given high priority in government development plans. However, achievements to date have been dissappointing (fob value around (F$150,000).	Market prospects outstanding, initially in Australia and eventually in Japan.	Antiquated post-harvest facilities operated by government a major weakness. Export quality standards need to be established and enforced. Improved industry organization required to ensure orderly marketing.	Assistance in: the introduction and operation of modern treatment technology to the private secto which would involve strengthening of government enforcement capability, the establishment and operation of a commercial fruit exporter.
"Off-season" export and hotel vegetables	Small but encouraging private sector involvement in the Nadi area.	Excellent if quality standards can be maintained and projected growth in tourism materializes.	As with papaya.	As with papaya.

Commodity	Current status	Growth prospects	Growth constraints, and requirements	Opportunities for MARC/CAD assistance
"Organic" cocoa	Cocoa processing (powder and butter) in Vanuatu for "organic" (no fertilizer and chemicals) chocolate presents promising prospect for Fiji's low productivity cocoa industry. Fiji's own developed confectionary industry provides some interesting possibilities for chocolate products, which also could involve ginger and macadamia nuts.	If Vanuatu's venture is successful, Fiji could follow suit--either selling "organic" beans to Vanuatu or establishing downstream processing venture.	. Viability of the organic cocoa market still to be proven . Development in Fiji cocoa industry constrained by inefficient government marketing monopoly and poor standard of dry bean processing. . Industry privatization with appropriate regulation required.	As regional project provide a market assessment of extent and requirements of "organic" beverage (cocoa and coffee) market. If Vanuatu's venture is successful, facilitate intraregion technology transfer.
Macadamia nuts	No macadamia nut industry. Indications are, however, that Fiji has conditions that are suitable for successfully growing macadamia nuts.	Fiji could establish significant macadamia nut industry based on expanded tourist sector. FAO currently is funding a major macadamia nut potential study.	If agronomic suitability is proven, qualified investors--to establish and develop industry needed.	Project preparation and identification of suitable private investors to establish and operate the industry.
VANUATU				
Root Crops	Well-developed traditional industry. Export backloading opportunities now exist with Air Vanuatu flights to Brisbane, Auckland, and Melbourne.	Particularly good for yams due to superior quality and storability. Taro would face stiff competition from W Samoa and Tonga. $2 million in root crop exports might be expected over the next decade, particularly if the expected growth in tourism is realized to provide backloading capability.	. Significant air freighting depends on anticipated introduction of 767 by Air Vanuatu. . Improved southbound shipping necessary but not anticipated in the near future.	. Assistance to commercial groups and management companies in export marketing. . Assistance in establishing export quality standards and packaging requirements.
Kava	Well-established traditional crop. In recent years the substantial domestic commercial industry has been based on urban "nakamal" (kava salons). Vanuatu is looking to establish a major export industry based on herbal and pharmaceutical markets.	Vanuatu has widest range of commercial cultivators in the Pacific. A technology now exists to produce soluble kava for a "ginseng" type product. If the herbal and pharmaceutical markets can be realized potential exists for establishing a multi-million dollar industry.	. Considerable and skilled effort will be required to develop significant herbal beverage market (promotion and packaging will be critical). . Supply expansion to be carefully managed due to cultural sensitivities to traditional crop.	Provide guidance in development marketing of new herbal and organic products. . Facilitate marketing contracts and possible identification of joint venture partners.

Commodity	Current status	Growth prospects	Growth constraints, and requirements	Opportunities for MARC/CAD assistance
Black pepper	Government sponsored a series of pepper development projects. Farm production has been disappointing, however, superior quality pepper has been grown in a number of more remote areas. The crop is suitable for smallholder villages.	Pohnpei pepper industry experience showed that the world market for gourmet pepper is undersupplied. Vanuatu has the additional advantage of being able to build industry development around supplying a growing tourist market. Vanuatu's labor supply situation is far better than that of Pohnpei. A$2 million industry over the next decade seen as a realistic objective.	Industry organization lacking. Intensive extension effort required. Private sector involvement in processing and marketing required.	Assistance (packaging, promotion, etc.) in developing tourist-based marketing. Providing in-depth assessment for the U.S. gourmet pepper market. Assistance in preparation of materials to enhance quality standards (grower extension processing, storage, grading). Assistance to commercial industry groups and management companies, particularly in extension. Facilitating the establishment of links between industry and U.S. spice companies, which would involve marketing and possible joint venture investment.
Vanilla	Government expected Vanuatu to develop Tongan scale vanilla industry. The French horticulturalist from the Tongan industry was brought to Vanuatu. Performance to date has been disappointing. Disease has affected plantings on the major islands of Efate and Santo.	Thrives in certain microclimates—particularly Malekula. Thus, if well-managed a significant industry could be developed, although probably not on the Tongan scale. A$1 million export industry over the next decade would seem to be a reasonable target.	. Careful sight selection necessary. . Industry organization focused on extension and marketing.	Assistance in establishing commercial industry groups, with particular emphasis on extension and marketing. USAID could draw on the experience of FIMCO in Tonga. . Support for preparation of quality standard manual for vanilla.
"Organic" bulk commodities				
- Cocoa	Vanuatu-based entrepreneur with proven export marketing record installed cocoa processing machinery directed at "organic" chocolate (no fertilizer and chemicals).	Cocoa suited to Vanuatu farming systems. The smallholder-based industry produces around 2,500 tonnes and continues to grow despite low world prices. The quality is good. A production base for this venture thus exists. If successful, the value of cocoa exports which currently stands at around US$2 million could double.	. Processed organic product will needs to be produced and market tested. . Extend and requirements of organic market need to be determined.	. As regional project provide market assessment of extent and requirements of "organic" beverage (cocoa and coffee) market. . Assistance in meeting requirements for for organic proudcts to meet U.S. and other importer standards. . As pilot scheme Vanuatu may need assistance in acquiring additional equipment for adequate test marketing

Commodity	Current status	Growth prospects	Growth constraints, and requirements	Opportunities for, MARC/CAD assistance
- Coffee	Coffee processing project being proposed by Tanna Coffee Dev Co It will be directed at "organic" exports and high-value packaged cocoa for the tourist market	High-value processing expected to offer longer term viability to Vanuatu's small but troubled coffee industry. With expanding tourism Hawaii's Kona coffee has become the model for Vanuatu. Coffee generates farm value sales of around $7 million in Hawaii.	. As with cocoa. Vertically integrated private investment needs to be attracted to the venture.	As with cocoa. Assistance in applying Kona experience to the Pacific (tourist-based industries not in direct competition with Hawaii) . Particular attention given to marketing and promotion Assistance in identifying suitable joint venture partners.
TONGA				
Vanilla	Tonga's most important agricultural export industry, having surpassed both coconuts and bananas. The value of vanilla exports currently is around T$2.5 million annually.	Production base of industry firmly established, marketing largely in private sector hands. The value of exports could be expected to double over the next decade (assuming vanilla prices remain reasonably firm).	Establishment and enforcement of standards. . Consolidation of exporting in hands of one or two industry-based exporters.	Vanilla industry--a major beneficiary of assistance to USAID and FIMCO (FIMCO experience provides a basis marketing technical assistance to other countries)
Squash	Substantial export industry supplying the seasonal niche in Japanese market. The value of exports for this 1990-91 season was T$1.9 million.	Mature T$3 million export industry would be a reasonable expection if industry is consolidated.	Current rapid expansion needs to be foregone for consolidation, which requires: . Increasing the yields and profitability of existing farmers, . Improving quality, with particular emphasis on post-harvest handling, . Improved coordination of marketing arrangements.	Provide assistance to a commercial Tongan Pumpkin Association in marketing and extension efforts. . Assistance in preparation of material promoting quality improvement and grading.
Root crops	Recently, a steady growth in root crop (taro and yam) exports, principally to NZ. The official value of these exports stands T$8 million (likely to be (significantly underestimated).	Industry has sound production and market base for sustained growth. Thus, the real value of exports could be expected to double over the next decade.	Transportation constraint to expanding North American market.	. No direct assistance expected, could benefit from preparation of regional quality standards material.

Commodity	Current status	Growth prospects	Growth constraints, and requirements	Opportunities for MARC/CAD assistance
WESTERN SAMOA				
Taro	Major export earner and region's largest exporter. Prior to hurricane Ofla the value of exports officially stood at WS$6 million (likely to be underestimated).	Exports growing rapidly since 1987. The market is undersupplied and Western Samoa is a low-cost producer that is well-located relative to major markets. A reasonable expection over next decade in WS$15 million.	Transportation a constraint to expanding North American market	No direct assistance expected, could benefit from the preparation of regional quality standards material
COOK ISLANDS				
Papaya	Major agricultural export industry, fob value around NZ$0.5.	Auckland papaya market saturated, cannot profitably be expanded. Australia offers a large market if tourist-driven air links are created.	. Auckland papaya market saturated. . Air cargo links to other markets. . Introduction and operation of new generation post-harvest treatment facilities.	
"organic" coffee	Small coffee industry being developed. Industry.	Market basis exists for development in tourism sector and high-value gourmet coffee markets in U.S. and elsewhere.	. Substantial investment in marketing (particularly packaging and promotion) required.	Same as Vanuatu.
PAPUA NEW GUINEA				
Floriculture	No floriculture industry.	Highlands provide unique combination of altitude and latitude for floriculture and horticulture development. This would not be a niche development and would require major investment in support infrastructure.	. Development would have to be large and profitable enough to justify dedicated air freighting. . Development would require substantial agribusiness investment and expertise.	. Project preparation for presentation for potential agribusiness investors. . Identification of agribusiness investors.

allows industries to effectively regulate themselves. The submissions of Mr. Graham Southwick--Fresh Fish Exporters (Fiji) Ltd. and President of the Fiji Deep Sea Fisherman's Association--to MARC Design "brainstorming" sessions would strongly support this view.

To some extent there is also the risk that individual Pacific island countries would be competing among themselves on narrow niche markets. However, to date this situation has not been a problem, with supply being more of a constraint. Furthermore, individual island countries tend to have a comparative advantage in certain commodities over other island producers. For example, rainfall and temperature would give Fiji an advantage over Tonga in the production of ginger, Tonga would have a comparative advantage in the production of off-season vegetables for the New Zealand market, Samoa is the most efficient taro producer, while Vanuatu is the best place to develop a significant kava export industry. For most spice commodities (such as vanilla) or nut commodities (such as macadamia nuts) no one Pacific island producer is likely to be big enough in the foreseeable future to influence prices. In designing and coordinating aid programs, nevertheless, there is a need to be mindful of the propensity of individual countries to undercut each other on narrow markets.

Haphazard production and marketing systems

If an appropriate larger scale commercial unit wishes to participate in horticultural commodity development it should be encouraged because it could provide a production base and facilitate technology transfer, which would be important, for instance, for establishing say a macadamia nut industry in the region. However, the rural economy in most Pacific islands is centered on the smallholder. The availability and distribution of land means that horticultural development is likely to be smallholder based. Furthermore, a smallholder production system, if well managed and directed, can afford major advantages in the production of a crop such as papaya, as the Hawaii experience has shown. Overall, the structure of Pacific islands agriculture is such that the development of horticultural export industries is best served by small farmers under the direction of commercial exporters and processors. The recommendations made in this paper are based on this premise. These recommendations would cause agribusiness investment involving integrated production, processing, and marketing activities to cease.

Despite the primacy of smallholder production systems the region's semisubsistence farmers are ill-equipped to make the transition to modern export-oriented

horticulture. Attempts to utilize the existing smallholder structures as a basis for developing a horticultural industry are doomed to failure as the experience of the Fiji papaya industry has shown (McGregor 1990a:7-10). Small exporters secure supplies from farmers in an informal and ad hoc fashion have led to Fiji exporters' having a reputation in the market of being "fly-by-night opportunists" who dump inferior fruit on wholesale markets. Attempts by the Fiji National Marketing Authority (NMA) to use the same haphazard smallholders have been equally unsatisfactory. The NMA distributed seedlings to growers and entered into an informal agreement with the NMA to sell exportable fruit to the NMA, which was responsible for picking and packing. The arrangements were haphazard and inefficient and generated only limited expansion in exports from the many thousands of seedlings distributed.

Fiji now has the prospect of at least realizing its potential as a major papaya exporter. The National Marketing Authority has withdrawn from the industry--at least for the time being. A commercial company with a great deal of experience in smallholder management has now entered the papaya export industry. It provides focused management, extension, and material supply support to the selected contracted smallholder (McGregor 1990:10-12; Eaton 1990). A similar company with much experience in ginger exporting is now entering the industry.

Adverse impact of direct government involvement

Government and statutory agency involvement in export marketing has been lackluster and probably has been a negative influence on long-term commodity development. A series of case studies undertaken by PIDP have shown government agencies to be particularly inept at handling fresh commodity development. These studies looked at the Fiji National Marketing Authority, the Tonga Commodities Board, the Vanuatu Commodities Board, and the Produce Marketing Division of the Department of Economic Planning in Western Samoa.

Te'o Fairbairn in his Western Samoa study concludes, "these agencies acted to eliminate competition with local private businesses and to stifle entrepreneurship" (Fairbairn 1989:30). This conclusion is reflected in the development of Western Samoa's taro exports, which showed little growth while the Produce Marketing Division maintained its monopoly. Since the issuing of export licenses to private exporters in 1987, the industry expanded rapidly to become Western Samoa's largest export industry. For Fiji papaya exports the NMA proved to be not the quality pacesetter that the government had expected, but rather a major obstacle to market

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development.[3] New commercial entrants have been unable to capitalize on the market and product development that had been expected of the NMA. In fact, they have faced the additional constraint of having to reverse the existing adverse market image of Fiji papaya.

Government marketing agencies established to protect the interest of growers have had the opposite effect of undermining the business and investment environment in the agricultural sector. The Fiji NMA in its Corporate Plan (1985-89) concluded that "direct trading activities on domestic markets for commodities such as dalo tend to undermine the operations of established middlemen, without any sustained benefits to farmers." History is now repeating itself, to the detriment of growers, with the current ad hoc marketing efforts of the Fiji Military Forces Auxiliary Unit. To quote M. Chung (1989:205):

> In 1987 the army's Auxiliary Unit began buying rural produce and selling basic items to villages, with the expressed goal of cutting out middlemen and, less intentionally, a whole range of formal and informal rural business many of which are Fijian owned. In the event, however, Rabuka's assumption that this Auxiliary Unit would be very popular with rural people (Dean 1988:130) proved incorrect, as the Unit's lack of business experience became an annoyance to rural people.

Some quantification of the adverse impact of government marketing monopolies on grower returns and the investment environment can be obtained by comparing Fiji and Papua New Guinea grower cocoa prices (Table 9). In Fiji the NMA is the model exporter, whereas PNG's cocoa marketing system is highly competitive, albeit regulated.

A similar situation is described for the Tonga Commodities Board when it relinquished its monopoly status on vanilla exports to the Friendly Islands Marketing Cooperative Ltd. and other private exporters, to quote the PIDP study:

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Table 9. Fiji and Papua New Guinea cocoa grower prices, 1982-86

Year	Fiji ($)	Papua New Guinea ($)
1982	1,250	1,566
1983	1,250	1,660
1984	1,500	2,235
1985	1,500	2,233
1986	1,700	2,339

> It took some convincing from the growers and businessmen before the Board of Directors agreed to issue export licenses for vanilla. As soon as private licenses were granted, competition for supplies between the Board and private exporters became quite fierce (which the Board had feared), and led to more efficient marketing and improvement in producer prices. It is estimated that up to 20 percent of the improvement in producer prices was due to this competition which effected greater efficiency and the acquisition of more competitive overseas market (Sevelle 1989:7).

The adverse impact of direct government involvement extends to the operation of post-harvest treatment, which throughout the region is the responsibility of government departments. In Fiji, for example, the government-operated fumigation facility at Nadi Airport has been identified as the most glaring marketing inadequacy in the development of horticultural export commodities (McGregor 1990a:12).[4] Unless quarantine facilities and their management can be placed on a proper footing, Pacific island exporters have no basis for establishing a horticultural industry regardless of market opportunities and production potential.

Inadequate infrastructure support

The key infrastructure for horticultural export development are air cargo capacity and post-harvest treatment facilities.

Air cargo capacity: For perishable horticultural and marine products the existing air cargo capacity is insufficient to allow the development of large industries. Detailed estimates of outward cargo capacity on scheduled flights for Tonga, Fiji, Vanuatu, and Western Samoa are shown in Table 10. Fiji, with 36 outward wide-

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Table 10. Outward air freight capacity and utilization from the Pacific islands

	Number of Flights	Capacity available for produce (tonnes)		Estimated utilization
Fiji				
Sydney	6	61		27.0
Melbourne	5	57.5		16.5
Brisbane	2	24		0.5
Auckland	12	84.5		14.0
Tokyo	1	14		1.0
Canadian (West Coast)	2	11.5	(Honolulu 3)	11.5
United States (West Coast)	7	78.3	(Ginger season)	78.0
		43.5	(Non-ginger season)	11.0
Total	35	330.8	(Ginger season)	148.5
		296	(Non-ginger season)	81.5
Vanuatu				
Brisbane/Sydney	1	1		
Brisbane/Melbourne	1	1		
Sydney	1	1		
Auckland	1	1		
Nadi	3	0.6		
Noumea	1	1		
Noumea/Sydney	1	1		
Port Moresby	1	1		
Total	10	7.6		
Tonga				
Honolulu	2			
Auckland	4	3.5		
Nadi	7	1.4		
Total				

body flights per week to Pacific Rim markets, is by far the best placed. Of these flights, 15 Air Pacific flights and two Air New Zealand flights originate in Fiji and thereby offer backloading capability. Vanuatu is next best served, with five flights per week to Australia and New Zealand markets all with backloading opportunities for produce.

While air cargo is a major constraint, sufficient capacity already exists to make a significant contribution to horticultural development in the context of a small island economy, as evidenced by the development of the Cook Islands papaya and Fiji fresh fish and early season ginger exports.[5] The prospects for expanding tourism in all five countries, but in particular for the Cook Islands, Fiji, and Vanuatu, suggest that air cargo capacity will be increasing over time.

Coordination problems sometimes mean that full use often is not made of available capacity, which has both long- and short-term dimensions.

Part of the case for Air Pacific establishing a service to Japan was to provide an outlet for fresh produce to the much cited highly remunerative Japanese market. Yet with the exception of fresh fish the company has been very disappointed with the cargo response to the service, which was established in 1988.[6] However, a lag in supplier response to available cargo space is inevitable--a problem exists with orchestrating the two. In the past, fresh produce ventures targeted at the Japanese market floundered with the cessation of the previous Japan Airlines service to Japan. It is hoped that bringing Japanese tourists to Fiji will prove to be sufficiently profitable for Air Pacific, and in the future other carriers, to provide a permanent service to that market, which will create the confidence for the type of investment necessary for sustained long-term horticultural development. It is encouraging to note that Air Pacific wishes to commence a second service to Tokyo, and there is talk of a possible service to Osaka and Taiwan commencing in 1992.

In the short term, the planning and control over available air cargo space has been a problem, partially due to the inevitable consequence of Australian and New Zealand cargo having priority on flights originating in those locations. However, if the record of Fiji's NMA can be used as a guide, government marketing agencies have proved to be particularly inept at handling the decision-making environment in which cargo space is managed.[7]

Commercial industry associations are seen as having an important role to play in securing air cargo space for their members. An effective association will be in a position to guarantee the airlines that space that is made available will be utilized. With this confidence the airlines will be more inclined to regularly make space available for island exporters. This was confirmed by Graham Southwick, Fiji's largest fresh fish exporter, in his presentation to the MARC "brainstorming" session. He has been able to secure sufficient space to generate F$4 million in export earnings for Fiji. The Fiji Fresh Ginger Exporters Association has played a crucial role in securing timely and competitive shipping for its members. Qantas allocates an additional four containers (approximately 17.5 tonnes) per week to Fiji during the ginger air freight season (July and August) because it is guaranteed that the supply will be there. Thus, within certain limits, assured supply can generate its own air cargo capacity.

It is worthwhile to note that recent improvements in the quality and availability of shipping services have reduced the pressure on air cargo space. Air Pacific reports a substantial loss in their taro market share to sea freight over the last year. With respect to United States markets it is encouraging to note that Matson Shipping is giving preliminary consideration to again servicing the Pacific islands. The Matson Line has developed a reputation for excellence in the handling of fresh produce. The company pioneered the sea shipment of papayas to the U.S. mainland.

Post-harvest treatment facilities: Throughout the region postharvest treatment is undertaken in obsolete fumigation facilities operated by government departments. Investment is now required in facilities for the post-ethylene dibromide (EDB) era. EDB has been banned as a treatment for exports to the United States since 1984, which will soon be the case worldwide.[8]

Post-harvest treatment technology presently is in a state of flux, with various forms of treatment under consideration, including various forms of heat treatments together with the controversial irradiation with gamma rays and the use of semipermeable shrinkwrap. Interest is primarily being focused on dry heat treatment (DHT) that involves forced air heating. The main technical difficulty has been to construct a large commercial unit that allows rapid and even heat distribution. This problem seems to have been resolved and a number of Hawaii's papaya exporters have obtained USDA certification for commercial DHT-treated units. Fruit is now being shipped to the U.S. mainland with very encouraging results in terms of quality.

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A small-scale prototype, that is suitable for the Pacific islands has been developed by the USDA's Tropical Fruit and Vegetable Research Laboratory at Hilo and the College of Tropical Agriculture and Human Resources, (CTAHR) University of Hawaii. The New Zealand Ministry of Agriculture and Fisheries, in collaboration with the USDA, is investigating the adoption dry heat treatment in the Pacific islands and has a pilot project underway in the Cook Islands. The Queensland Department of Primary Industries is undertaking similar research specific to its own fruitfly regime. Thus, over the next few years as these facilities become proven and approved by the importing countries there will be no shortage of aid donors and technical assistance.

The challenge facing the donors will be to get these facilities and the ancillary technical assistance into the hands of the private sector, with the government's role being confined to supervision and certification. Important lessons can be learned from the disastrous experience of the Japanese ice-making facilities that were provided to government fisheries departments throughout the region. As described at the MARC fisheries "brainstorming" session, this aid has constrained fisheries development. On one hand these government-operated facilities have not provided the fishermen with the ice they require, yet on the other hand they stifled an opportunity for private investment in this area. Care and coordination by donors will be necessary to avoid a repetition of this situation with the introduction of new generation post-harvest treatment facilities in the horticultural sector.

Inadequate institutional support

A major weakness that needs to be addressed is in the setting and enforcing of quality control standards. The region generally has a poor quality image to overcome in the marketplace. It should be noted that in these markets the hallmark for success is quality, even more so than price competitiveness. Eaton (1990:91) describes the reputation of Fiji papaya in the Australian market:

> The complaints of Australian wholesalers concerning the variable presentation and packing standards told to and seen by the author in 1987, 1988, and again in 1989 were virtually the same; i.e., poor packing, underweight cartons, and the inclusion of both over- and under-ripe fruit, which had it been harvested prematurely would have never ripened.

Yet Fiji papaya that did meet the standards were readily acceptable and received premium prices. To again quote Eaton:(1990a:91).

> Not only have top CIF prices A$16/4.5 kg/carton (1987) been obtained, but experienced dealers have remarked that "the product is outstanding."

The views of importers on matters of quality must always be treated with some caution. However, the following quote from one of the larger importers reflects the consensus among buyers and observers of Fiji ginger in the market:

> Quality wise you have a long way to go. In general, Fiji's quality has not improved over the years. In fact, I think this year's quality was inferior to last year! The general opinion is that Fiji has no grading standards. All Fiji ginger is considered "field-run" (i.e. everything into the box irrespective of size). (In response to a questionnaire sent by the author in January 1990 to Fiji's North American ginger importers).

Such views are confirmed by this author's observations in the market. The large price differentials between Hawaiian and Fiji ginger, and now, disturbingly, Brazilian ginger confirms Fiji's quality problems.

The absence of appropriate and enforced grading standards severely undermines the business environment for horticultural development reducing the industry to the lowest common denominator. If one exporter sends consignments of questionable quality, the entire market is jeopardized and could permanently be forfeited. Often, an inadequate institutional structure and legal bases exists to enforce quality standards once they have been established.

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The capability to establish and enforce quality standards needs to be developed in much the same way as in New Zealand and Hawaii's horticultural industries. The emphasis should be on encouraging industry self regulation, with government providing the legal and institutional environment to allow this to effectively happen and to certify that the quarantine and quality standards of importing countries have been met. The establishment and strengthening of commercial industry associations can play an important role in facilitating this process. Island governments' quarantine and produce inspection departments also will require infrastructure and technical support to assist them in their vital inspection and certification role, which may include assistance in the drafting of legislation to improve the legal base for enforcing export quality and quarantine standards.

The management constraint

Inadequacies of the prevailing smallholder systems have been identified as major constraints to the implementation of the various horticultural development programs. In the smallholder sector the dearth of skilled and ongoing managerial expertise is not offset to any significant degree by the diffused extension services operated by the Ministries of Agriculture throughout the region (McGregor, Eaton, and Manning 1990:5). While the traditional extension arrangements have been adequate for stable semisubsistence production systems, they have proved to be unsatisfactory in the promotion of crop intensification and diversification policies.

To enable smallholders to successfully participate in new high-value crop development, the establishment of a nucleus commercial management unit is proposed to direct contracted smallholders. This recommendation represents a modified version of the standard nucleus estate (NES) model that has successfully been applied to the Papua New Guinea oil palm industry. In the case of a commodity such as macadamia nuts, the Papua New Guinea oil palm experience would directly be applicable. However, in most cases of horticultural development the nucleus unit would not necessarily be involved in any production, and its emphasis would be on providing management. The experience of Hawaii's highly successful papaya industry and Fiji's tobacco industry indicated that this approach could be adopted to the development of a commercial smallholder-based horticultural export industry in the Pacific islands (McGregor 1990, McGregor, et al. 1990, McGregor with Eaton 1989).

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The proposed unit would be responsible for the following:

- the supply of planting material to contracted farmers,
- the provision of mechanical services for cultivation and spraying,
- regulatory control of grower performance,
- technical advice and irrigation technology, and
- the sole marketing channel for contracted production.

Smallholders would be selected to participate on the basis of the following:

- past farming record,
- availability and suitability of land,
- agreement to follow the defined package of practices,
- agreement with the financing and cost-recovery procedures, and
- guarantee to deliver the produce exclusively through the nucleus unit.

The Essential Component Mix for Successful Horticultural Industry Development

Pacific island countries--whose agricultural export heritage has been based on bulk and nonperishable commodities such as sugar, copra, cocoa, and timber products--require a major adjustment in mindset and approach to effectively amalgamate the multifaceted, interrelated components necessary for a highly perishable and volatile horticultural commodity. Attempts have been made to develop these industries in a low-key piecemeal fashion utilizing existing government marketing, research, and extension structures. This approach has been unsuccessful. Experience has shown that a successful horticultural export industry will not evolve from a cottage piecemeal operation to a New Zealand kiwifruit or Hawaii-type papaya industry.

The successful export of horticultural products requires that each activity from the field to the consumer needs to be fully considered and integrated into the system as a whole. The key component parts must all be in place in order for success to be achieved. A lack of awareness, responsibility, and, where relevant, investment in each component part of the chain are frequent causes of unsuccessful export programs. Such has been the experience of new commodity development in the Pacific islands, as the case of Fiji papaya illustrates.

The successful development of horticultural industries in the Pacific islands is most likely to occur with small farmers under the direction of commercial exporters and processors. To ensure the necessary quality standards, as well as continuity of supply, these exporters may need to provide extension and other services to their contracted farmers. Furthermore, to reiterate, if Pacific island countries want to become horticultural exporters of any significance the industries need to be completely privatized, including the operation of post-harvest treatment facilities.

Table 11 illustrates the interrelated component parts of production, marketing, and consumption (PMC) required for the successful development of a horticultural export industry in the Pacific islands based on the directed smallholder model (derived from Salut 1981). The table also attempts to assign responsibility and priority for the various components. To minimize the coordination problems of the type encountered by the Fiji papaya industry, the organization directing the smallholder and the marketing body ideally should be part of the same commercial entity. A single marketing organization also would minimize coordination problems. However, at times two specialist commercial entities one concentrating on production and the other on marketing could collaborate in a mutually beneficial joint venture.

It should be noted that the PMC matrix shows no direct government involvement in production and marketing, yet government has been assigned some responsibilities that are critical in creating the appropriate business environment to encourage sustained private investment. These responsibilities include (1) certifying that the quarantine and quality standards of the importing countries have been met and (2) providing the institutional and legal environment to facilitate industry self-regulation. The private agribusiness investor also will look to government to facilitate the availability of land and the security of tenure. The flow of necessary aid and technical assistance to the commercial sector will depend on the stance and

Table 11. Production Marketing Consumption (PMC) system for developing horticultural export commodities in the Pacific islands

Component Requirements	Responsibility	Ranking
Production		
Land and water resources	F/G	C
Production financing	D/G	C
Pest control	F/D	S
Seed availability	D	C/I
Fertilizer needs	D	S
Input procurement	D	I
Farmer risk taking	F	I
Farm machinery needs	F/D	S
Irrigation needs	F/D	S
Farm energy requirements	F	O
Input and extension information	D	I
Research programs	G/D	S
Off-shore technology transfer	G/D	S
Farm labor needs	F	I
Transportation	D	I
Grading		
-- operation	D/M	C
-- establishment of standards	I/M/G	C
-- providing legal basis for standards	G	C
-- certification of compliance	G	C
Marketing		
Packing materials/standards	M	C
Dependable commodity supply	M/D	C
Post-harvest quarantine treatment		
-- operation	M/D	C
-- establishment of standards	M/G	C
-- providing legal basis for standards	G	I
-- certification of compliance	G	C
Market intelligence		
Market information to farmers	D	O
Air cargo and storage	M	C
Commodity institutions		
-- operating	I	I
-- Initiating	G/M/D	I
-- providing legal basis	G	I
Orderly marketing regulation	G	I
Distribution resources	M/W/R	I
Product market information	W/I	I
Market research and development	I	I
Consumption		
-- market penetration	W/R	C
-- consumer awareness	I/W	C

Responsibility codes:
- F: Farmer
- D: Directing body
- I: Industry organization
- G: Government
- M: Marketing body
- W: Wholesaler
- R: Retailer

Priority ranking code:
- C: Critical
- I: Important
- S: Significant

administrative efficiency of government. Furthermore, the dearth of entrepreneurial and technical skills, together with the nature of the commodities, means that the involvement of foreign investors, particularly in marketing, will be necessary. Thus, immigration policies and their administration will need to accommodate the residence of a small number of highly qualified expatriates well beyond the duration of any start-up aid and technical assistance project.

The Role of Aid and Technical Assistance

Aid in the past has done little to accelerate private sector development in Pacific island agriculture. At worst, project aid has actually weakened the position of the private sector by requiring the direct involvement of government agencies in production and marketing activities. However, redesigned foreign aid will be vital in facilitating horticultural development in the region.

Technical assistance from the United States (Hawaii) and New Zealand, in particular, has the potential to make an important contribution to crucial elements of the PMC matrix. Hawaii has capability in key areas such as post-harvest treatment where it pioneers in commercial development of DHT technology. New Zealand exporters have an international reputation for excellence in the handling of delicate fruit. Thus, USAID, in implementing components of the MARC and CAD projects directed at horticultural development, should look to closely collaborating with New Zealand aid and where possible the New Zealand horticultural industry.

The total picture reflected in the PMC matrix must be kept in mind in designing the horticulture-related components of the MARC and CAD projects, in discussion with governments, and in coordination with the activities of other aid donors such as New Zealand. However, these two interrelated USAID projects will need to focus on a few specific areas where the United States would be in a position to make a significant contribution, including:

- project and investor identification,
- technical support for establishing and operating commercial industry associations, including assistance to industry-based extension and research,
- assistance in establishing quality and grading standards.
- the provision of post-harvest treatment facilities and technical support,
- private sector training, and
- market research and development and market intelligence.

These areas are discussed briefly below.

Suggested Activities for USAID

The forthcoming MARC and CAD projects are likely to have components that will be directed at facilitating horticultural export development. Areas such as market research and development and market intelligence clearly lie in the domain of the MARC project, whereas technical support for industry-based extension services would fall within the purview of the CAD project. The demarcation of activities such as assistance in establishing quality and grading standards would be less clear cut. Thus, with respect to horticultural development these two projects will need to be closely coordinated and integrated if maximum benefits are to be achieved.

Facilitating agribusiness investment through project identification and formulation

Such a program is spelled out in detail in a paper prepared by Blood and McGregor dealing with Hawaii's agricultural diversification as a possible paradigm for agribusiness development in the Pacific islands. In summary, agribusiness investment could be accomplished in the following sequential stages:

1. Identify profitable export-orientated diversified agriculture projects that could be supported by small- to medium-sized joint venture businesses.

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Some possible projects would include the development of an integrated macadamia nut industry, and the establishment of papaya and guava puree processing facilities.

2. Evaluate all such projects in terms of comprehensive feasibility studies and business plans, including emphasis on risk factors, market development, requirements for management expertise, extension and research support, and infrastructure development (i.e., essentially a turnkey approach). These evaluations should be performed to the most exacting requirements of international accounting firms and financiers.

3. Obtain an unequivocal commitment from the host government to afford guarantees that protect the interests of overseas investors within predetermined, agreed upon guidelines.

4. Identify potential joint venture partners, both local and overseas, who would be attracted to and capable of managing the project. This phase is not easy, and a high level of expertise is required in "tendering" the project to international local entrepreneurs.

5. Provide ongoing support for each project through training and the provision of specialized experts.

6. Provide loans to local shareholders to acquire the overseas equity once the project has been successfully stabilized.

A program such as the one outlined above would go a long way in maximizing the participation of foreign joint venture partners in the development of the region's horticulture industries. However, in the initial stages it must be recognized that attracting suitable new foreign companies for the development of smallholder-based diversification crops will be difficult, although not insurmountable, provided appropriate incentives and guarantees can be provided. The fact that these investors need not necessarily directly acquire land simplifies the process. Some of the more successful companies in Hawaii's diversified agriculture could be a potential source of investment in this area. However, by and large, it will be necessary to develop an in-country capability. In this respect aid donors, technical assistance, and the development banks have an important role to play.

Technical support to commercial industry associations

Selected industry associations can provide a focus for developing an in-country capability. A strong commercially oriented industry association would be well placed to provide marketing, extension, and other services to its members and other suppliers. Fiji's Fresh Ginger Exporters Association (FFGEA) in addition to providing marketing support to its members is now developing its own extension service. The Association has employed a field officer, undertakes soil testing, and has prepared farmer training material. The main focus of these activities is to improve ginger quality. The industry would thus be well placed to absorb technical assistance from the Hawaiian industry in areas such as agronomic practices and post-harvest operations. FFGEA also benefits from assistance in activities such as product development and promotion. The CAD project provides the mechanism for such technology transfers. Similarly, Fiji's fresh fruit exporters are in the process of forming an association with the view of operating their own post-harvest treatment facilities. In other countries similar organizations could be examined for their commercial potential.[9]

Strategically placed technical assistance can be crucial to the success of such organizations, as illustrated by Tonga's Friendly Islanders Marketing Cooperative (FIMCO), which is now the Kingdom's largest exporter of vanilla beans, and New Guinea Islands Produce (NGIP) in Papua New Guinea's cocoa industry (McGregor, et al. 1990:18-23).

Thus, in the pre-implementation phase of a project, presumedly CAD, a thorough evaluation of the prospects and the specific technical assistance needs of producer-based organizations in the participating countries would be appropriate. In this respect, opportunities for facilitating intraregional technical assistance should be examined. For example, FIMCO, and in particular its USAID-funded financial manager, would be well placed to assist producer-based marketing organizations in other countries. Similarly, NGIP could be utilized in the establishment of a private plantation management industry in, perhaps, Fiji.

Assistance in establishing quality and grading standards

Sustained horticultural industry development will depend on achieving continuity of supply to the specification required by the market. A necessary condition for achieving this continuity is to have in place quality and grading standards that are consistent with market requirements. Aid could be effectively used in the preparation and publication of a manual of quality standards, presentation and

packaging, and quarantine requirements. The manual would need to be readily usable by exporters, farmers, extension staff, and government quarantine officials. It should be in loose-leaf form to enable it to be updated on a regular basis, and it should make abundant use of graphics and photographs. The manual also could include background information on markets and marketing. Supporting materials such as posters also could be prepared. As a part of this exercise, drafting instructions should be prepared to translate the standards into legislation to ensure their enforcement.

Such a manual should be prepared in close collaboration with importers, industry and exporter groups, the SPC Plant Protection Program, and government produce inspection and quarantine departments. The project would require from the outset the involvement of the exporting industries if it is to be effective.

In 1987 FAO prepared a draft manual for Fiji's Ministry of Primary Industries on "Export Control Standards for Selected Fruit and Vegetables." The manual covered 12 commodities and dealt with markets, quality requirements, quarantine requirements, grading, presentation and packaging requirements, and the package of practices required to achieve the required standards. Informative colored photographs were included. The standards for papaya presented in the annex of this report are derived from this project.

Considering the small amount of funds devoted to the exercise, a very credible product was achieved. Unfortunately, little follow-up was done in terms of the dissemination of this information to the concerned industries and in the enforcement of the standards presented. More progress in these areas would have been achieved if the project had included provisions for publication and distribution. FAO's efforts in Fiji could now be capitalized upon by being the starting point for the preparation of quality and grading manuals for use throughout the region. The effectiveness of any policy dialogue directed at the enforcement of quality standards would be greatly enhanced by the existence of an authoritative published manual based on the requirements of the market.

The provision of post-harvest treatment facilities and technical support

The USDA is in the forefront of developing appropriate post-harvest treatment technology (Armstrong 1989, McGregor 1990a:20). Particularly encouraging is the development of a small-scale dry heat treatment unit that would be suitable for

small Pacific island exporters. The effective transfer of this technology to Pacific island exporters should be in two stages: USAID could contribute to both stages.

The immediate priority is for a concerted research program to test and certify DHT units under the fruitfly regimes prevailing in the different Pacific islands. New Zealand already has commenced this work in the Cook Islands. The SPC has the lead coordinating role to play in this urgent research. However, USAID is well placed to provide technical and other support.

With importer certification obtained, the next step is to transfer the technology to the fresh produce exporting industries in the region. The previous generation of vapor heat facilities, built of stainless steel and based on Japanese technology stainless steel, had a capital cost running into several million dollars. Thus, Japan mounted major infrastructure aid projects to supply these units to Thailand and the Philippines. Fortunately, a similar act will not be necessary in the Pacific islands since the capital cost of the dry heat units currently being commercially used in the Hawaii papaya industry is quite modest. However, the provision of technical support for export industries to operate these facilities will be essential. Support to government quarantine departments in undertaking their crucial certification role also will be necessary.

Some initial expatriate management input is likely to be necessary, which would be part of an overall post-harvest treatment training program conducted in-country and in Hawaii. Such training would involve the private sector "doers" as well as the government "inspectors and certifiers."

Private sector training

The premise underlying these proposals is that the transfer of technology is best achieved via agribusiness investors or commercial industry associations by using expert staff and on-the-job training of local personnel. Furthermore, technology transfers via government ministries, a course often followed due to the strictures of aid, have proved to be highly ineffectual and should be avoided in the MARC and CAD projects.[10] Scope exists for facilitating intraregional training utilizing private sector organizations. For example, the Plantation Support Association (PSA) in Vanuatu could send members to NGIP in Papua New Guinea for on-the-job training.

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A program of focused field visits and secondments can prove to be very beneficial, particularly to those already involved in the industry. The experience of the Fiji ginger industry is a case in point. Following the marketing and export quality crisis of 1986 USAID agreed to fund a fact-finding trip to Hawaii. The Fiji team was made up of exporters, farmers, and representatives of the Ministry of Primary Industries. The team was able to observe the operations of the Hawaii industry firsthand, which proved to be invaluable, as a result, the Fiji industry, supported by government, was able to put into place major reforms and improvements the following year (McGregor 1988).

The time is now right for the ginger industry to undertake similar tour that could be extended to the marketplace. In addition, the papaya industries of Fiji and the Cook Islands could benefit from a similarly structured visit to the Hawaiian papaya industry. Hawaii's ginger industry has been open and cooperative to Fiji. It is hoped that other industries would adopt the same approach to the Pacific islands for they are not in direct competition with Hawaii due to seasonal and geographical differences.

Sight should not be lost for private sector training within the region, USAID could play a useful facilitating role in this respect. For instance, if Fiji was seriously considering establishing a plantation management industry, extended secondment of personnel to a company such as NGIP would pay handsome dividends. Similarly, a microstate wishing to establish a vanilla industry could benefit from attaching potential private sector participants to FIMCO. It is understood that Tonga already has agreed to provide some assistance to Tuvalu with respect to establishing a vanilla industry.

Market research and development and market intelligence

It is assumed that the MARC project will establish a facility similar to the South Pacific Trade Offices in Sydney and Auckland. Such an office could play a very useful function in coordinating market research and market intelligence for U.S. markets. It could also assist in market development for selected products. The Trade Division of the Forum Secretariat, via the South Pacific Trade Office in Sydney, recently commissioned a study entitled "The Australian Market for Fruit and Vegetables from the Pacific Islands" (Hardin and Associates 1990), which was a report of the consultants at a workshop held in April. The workshop was attended by private sector representatives and senior government officials from throughout the region. This author attended the workshop, from all indications it was highly

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successful and generated considerable interest on the part of private sector participants. It also provided for government officials an awareness of opportunities and requirements of government in facilitating private sector participation. Arising from the workshop is a request to the Forum Secretariat to sponsor a similar study and workshop for the New Zealand market. Perhaps one of the first activities for MARC's "Los Angeles Office" could be to commission a companion study for North American markets. To complete the picture for the Pacific Rim, perhaps JIACA could be persuaded to undertake a similar exercise for Japan. To be fully useful such studies should not be one of exercises. They need to be regularly updated and followed up. For the North American market this follow-up would be a responsibility of the MARC project.

Beyond broad market identification and market intelligence, a need exists for more detailed market and marketing development assistance for a select few products, preferably confined to situations in which an existing product could be tested in the market. Detailed market and marketing assessments would be linked to the project identification and formulation proposals made above.

Appendix

Export Control Standards For Fiji Papaya

This standard applies to pawpaws (Carica papaya) that are to be exported fresh to consumers. The preferred pawpaws are the Hawaiian Solo varieties and any others approved by the controlling authority for export, if a market demand exists. The main varieties are Sunrise, Kapoho, and Waimanalo Solo.

Quality Requirements

Minimum Requirements

In all classes, subject to the special provisions for each class and the tolerances allowed, pawpaws must be

- intact and firm,
- fresh in appearance,
- clean and free of any visible foreign matter,
- free from rotting or deterioration that would make them unfit for consumption,
- free from blemish or bruising, sunburn, softness, and scars,
- free from damage by pests and diseases,
- free from foreign odor,
- well developed and of typical variety characteristic and not deformed,
- of uniform shape, and
- free from abnormal external moisture.

Pawpaws must be picked at the right stage of fruit development and maturity, which enables them to

- reach their destinations at a degree of ripeness acceptable to the consumers,
- withstand post-harvest handling and transportation,
- arrive in the best commercial standard possible,
- have a high brix count, and
- at least be at the breakpoint (color change) of picking.

Classification

Pawpaws are classified into two grades:

Grade 1: Pawpaws in this grade must be of superior quality. Shape and color must be characteristic of the variety. They must have minimal defects. Very slight superficial defects are acceptable provided they do not affect the quality, the keeping quality, the appearance, or the presentation in the package.

Grade 2: Pawpaws in this grade must be characteristic of the variety. The following slight defects are allowed provided they do not affect the general appearance of the fruit, the quality, the keeping quality, or the presentation in the package:

- slight shape defect, or
- slight skin defects due to rubbing, healed bruises, brown spots, or sunburn, which are acceptable if the total area does not exceed 10 sq. cm and 10 cm in total length.

The acceptable Hawaiian pawpaw shape is either bell-shaped (hermaphrodite) or roundish (female), with the former commanding greater market preference; it should always be the choice for export unless consumer demand changes.

Both grades are for export. Preference for a particular grade depends on the requirements of the importing country. Japan demands only Grade 1 pawpaws whereas Australia, New Zealand, and Canada will accept both classes.

Size requirements

Size is determined by the weight of the fruit, as follows:

Weight scale in grams			
400g	extended	to	450g
450g	"	to	500g
500g	"	to	550g
550g	"	to	600g
600g	"	to	650g
650g	"	to	700g
700g	"	to	750g
750g	"	to	800g
800g	"	to	850g
850g	"	to	900g
900g	"	to	1,000g

The weight of the fruit must be not less than 400g nor more than 1,000g (700g for the Japanese market).

Tolerances

Tolerances with respect to quality and size shall be allowed in each package for produce not satisfying the requirements for the grade indicated.

1. Quality Tolerances

Grade 1: Ten percent by number or weight of pawpaws not satisfying the requirements of the grade but meeting those of Grade 2.

Grade 2: Ten percent by number or weight of pawpaws satisfying neither the requirements of the grade nor the minimum requirements, with the exception of fruit affected by rotting, pest and disease damage, marked bruising, or any other deterioration rendering it unsuitable for export.

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2. Size Tolerances

For all grades: Ten percent by number or weight of pawpaws satisfying the size immediately below or above the size concerned with a minimum of 400g for pawpaws classified in the smallest size (400g/450g).

Presentation and Packaging Requirements

Uniformity

The contents of each package must be uniform and contain pawpaws of the same variety, grade, and size, subject to the tolerances permitted.

Packaging

Pawpaws must be packed in single layers in such a way as to protect them from transportation and handling damage. The fruit should be packed stem end down. Cartons should be filled to prevent excessive movement. The depth of the carton should allow a 10 mm (minimum) gap between the top of the fruit and the lid.

The materials used inside the carton must be new, clean, nontoxic, and of a quality that prevents external or internal damage to the fruit. Rubber foam (5 mm thick) or shredded paper may be used for fills in the carton or to wrap the fruit. Newspaper must not be used. The depth of the package should allow a 10 mm (minimum) gap between the top of the fruit and the lid. Packaging must be free from all foreign matter.

Marking

Each package must bear the following particulars:

1. Identification: Exporters name and address, and accepted trademark (optional).

2. Nature of the produce: "Fiji Fresh Pawpaws," variety name, and graphic presentation (optional).

3. Origin of the produce: "Product of Fiji," district grown (optional), and farmer code.

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4. Commercial specifications: Either "Grade 1" or "Grade 2," number of fruit per carton, and net weight per carton.

5. Official control mark: The Quarantine Division's stamp of approval for export at the specified grade.

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Endnotes

1. Due to excess capacity on the backload of wide-body passenger aircraft, outgoing airfreight rates are relatively inexpensive and significantly less than the comparable cost of shipment from the U.S. mainland to Hawaii or from Japan to Hawaii. Garrod has shown that airlines, faced with competition, are willing to sell their backloading capacity at a rate that covers marginal cost (loading and unloading, etc., and small amount of additional fuel). The cost of the aircraft, the crew, landing fees, etc., have already been met and charged to the passengers. If the Hawaii horticultural export industries used specialized airfreighters the cost would be two to three times the existing rate (Garrod 1984:10).

2. The establishment and successful development of the fresh ginger export industry has been based on the marketing skills of a dynamic private sector. However, by the early 1980s the lack of order in the marketing of ginger began to seriously threaten the viability of the industry. A cutthroat, freewheeling marketing environment prevailed in which Fiji exporters to the North American market created market share by undercutting the prices of other Fiji exporters. Particularly destabilizing was the practice of some new exporters entering the market well down the marketing chain, even at the retail level, to secure a "foothold" in the market. The discovery of a new buyer for Fiji ginger often was erroneously claimed to be a "new" market when in fact it merely represented a loss of market share for an existing wholesaler of Fiji ginger. By 1986 the situation had become chaotic, with around 100 importers of Fiji ginger operating at various levels in the marketing chain--even the small market of Honolulu had six importers. With the size of the market available to Fiji being essentially fixed, the total foreign exchange generated by the industry declined. The resulting marketing uncertainty created by price undercutting led to a loss of confidence in Fiji as a supply source at a time when competition from Brazil was increasing.

3. Australian importers have long complained about the "variable presentation and poor packing standards of Fiji papaya" (Eaton 1990:17). Eaton's market

research observed "poor packing, underweight cartons and the inclusion of both over- and under-ripe fruit, which, as it had been harvested prematurely, would never ripen" (Eaton 1990:19). Fiji's papaya industry now appears to be entering an expansion phase with the entry of significant private sector marketing involvement (McGregor 1990a).

4. For two months in 1989, at the apex of the papaya flush, the fumigation facility was unserviceable while waiting for repairs by the Public Works Department. This situation caused chaos for the papaya and other horticultural export industries and further undermined Fiji's reputation as a reliable supplier. These facilities continue to be unreliable. Exporters are currently complaining of blistered fruit resulting from excessive fumigation doses.

5. For the one-month period commencing July 1990, Fiji has air freighted an estimated 280 tonnes of ginger to the North American market utilizing the scheduled northbound passenger services of Canadian, QANTAS, Air New Zealand, and Air Marshalls. In the same month, Air New Zealand estimates that they carried 150 tonnes of Fiji produce to Los Angeles, which was made up of ginger, fish, taro, tumeric, and live fish. The capacity situation is expected to improve further in 1991, with the expected increase in the number of Air New Zealand flights and the entry of Hawaiian Air and possibly Air Tunagru (the Kiribati flag carrier in collaboration with Aloha Airlines).

6. Air Pacific has a 14-tonne capacity available on its weekly service to Japan, of which an average of five tonnes is being utilized by sashimi tuna and on occasion windsurf sails.

7. Eaton describes the cargo space management performance of Fiji's NMA, the marketing agent in a joint venture papaya project in which his company was involved, to quote:

> A further complication arose when the organization of air cargo space by NMA disintegrated; papaya dispatches to Australia became a day-to-day, wait-and-see exercise resulting in a "no win" situation where fruit that had already been ripe for one

week had to weir for the following weeks aircraft. For a fresh fruit export-oriented product, the availability and control of regular air cargo space is essential (Eaton 1990:91).

This company subsequently became responsible for it own marketing and has been able to effectively secure and manage sufficient cargo space to meet its present requirements.

8. The maximum level set by FAO/WHO for EDB application is 0.1 ppm. The treatment of most tropical fruit from the Pacific islands far exceeds this standard.

9. A new processed ginger product recently has been developed by the giant spice company, McCormick Schilling. Minced ginger and ginger/garlic combinations are bottled in small jars and targeted at the fresh convenience food market. Pureed ginger is seen as a rapidly growing market in both North America and Europe. Fiji has been selling some of its "off grade" ginger for this market via a processor in California, Pacific Choice Brands. There would seem to be, through an appropriate joint venture, an excellent opportunity for downstream processing of this product in Fiji.

10. For example, Fiji's Ministry of Primary Industries, over the years, has benefited from visits by Professor Nakasone, from the University of Hawaii, who developed most of the commercial Solo papaya varieties. He found the Ministry's seed production program to be totally unsatisfactory and made recommendations to rectify the situation (Nakasone, pers. comm.). However, these recommendations have never been acted upon and the commercial exporters now rely entirely on importing seed directly from Hawaii. Fortunately, seed purchased from the University of Hawaii has performed satisfactorily under Fiji conditions. However, the private sector could benefit from guidance in seed selection and papaya nursery management if the best results are to be obtained from this planting material.

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DOCUMENT 2:

SUMMARY REPORT AND RECOMMENDATIONS TO USAID/SUVA TO ASSIST WITH THE DESIGN OF THE COMMERCIAL AGRICULTURAL DEVELOPMENT PROJECT PAPER FOR FIJI, WESTERN SAMOA AND VANUATU

November 14, 1991

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Introductory and trip report information covering my travel to Fiji, Western Samoa, and Vanuatu, and my interviews with commercial sector and government personnel in those countries, are given in **Document 1: Trip and Technical Report to USAID/SUVA for the Commercial Agricultural Development Project Paper Covering the South Pacific Island Nations (SPIN) of Fiji, Western Samoa, and Vanuatu** (enclosed). This document (Document 2) includes my summary statements and recommendations for Commercial Agricultural Development Project (CAD) involvement in each country.

Quarantine regulatory agencies and laws exist in most countries to prevent the spread of pests and diseases into areas where they do not already occur. Carefully and rigorously applied quarantine methods have restricted the spread of exotic pests and diseases. However, with increasing travel and trade worldwide, quarantine barriers are becoming increasingly difficult to maintain and we see new pest introductions occurring at a startling rate. With growing demand for expanded agricultural trade, especially in exotic fruits, simple exclusion of potentially infested products is an unsatisfactory response to quarantine requirements. For example, trade prohibition can lead to smuggling of fruit, perhaps one of the major ways tephritid fruit flies are introduced into new areas. Thus, assisting in the transfer of appropriate quarantine treatment technologies can be seen as a way of protecting U.S. agricultural industries.

From about 1978, the USDA-Agricultural Research Service (ARS) has promoted basic and applied research to develop quarantine treatments against fruit flies in fresh fruit of export importance. Since before the deregistration of ethylene dibromide as a postharvest fumigant in 1984, USDA-ARS emphasized the need to develop alternatives to toxic compounds. During the past five years, USDA-ARS research helped refine numerous known quarantine treatment technologies and developed new quarantine treatment technologies including hot-water immersion and hot forced air treatments to disinfest fruit flies from fruits. Today, USDA-ARS continues to transfer quarantine treatment technologies to USDA-Animal and Plant Health Inspection Service (APHIS) plant protection and quarantine programs, especially for tephritid fruit flies, to counterpart research and regulatory agencies in Japan, Southeast Asia, the South Pacific, Canada, Central and South America, and the Caribbean.

This technical report to USAID/SUVA follows my review of on-going plant protection and quarantine services being undertaken in the South Pacific region in conjunction with the South Pacific Commission (SPC) Plant Protection Service (PPS) based in Suva, Fiji, and interviews with plant protection and quarantine scientific and regulatory personnel, government agricultural officials, and producers and exporters of agricultural commodities of economic and quarantine importance in the South Pacific nations of Fiji, Vanuatu and Western Samoa during September 1-23, 1991. This report is a support document to aid in the design of the CAD Project paper for SPIN.

There are many elements involved with the successful development of agricultural local/export markets regardless of country. Some of the major elements the CAD is concerned with include:

1. the capability of continually producing a desirable product of uniform quality that is commercially competitive

2. strong and stable local/export markets

3. cost-effective and reliable transportation and distribution systems

4. current knowledge of regulatory barriers and quarantine issues for both exporting and importing countries

5. supportive/responsive government scientific and regulatory systems/infrastructures for dealing with regulatory barriers and quarantine issues

6. available/applicable technologies to solve regulatory barrier and quarantine problems

7. viable and dynamic marketing and processing businesses

8. strong industry associations of producers and marketers

9. interfacing groups comprised of members from the commercial and government sectors to facilitate problem solving

My summary report and recommendations focus primarily on items 4 through 6, which are the regulatory and quarantine aspects of commercial agricultural development. Weakness in or absence of any one of these elements can disrupt or prevent agricultural development. Therefore, these aspects for each country need to be addressed before commercial agricultural development, especially for export markets, can proceed. The CAD has an important contribution to make in this respect.

Quarantine is a broad subject that covers a wide range of topics including, but not limited to, diseases of animals and plants, disease vectors, insects, nematodes, weeds, and many other pests, the quarantine laws and agencies that regulate commodity movement, and quarantine treatments to disinfest exported commodities. My report is

concerned primarily with quarantine entomology, with particular emphasis on tephritid fruit flies and the research and development of quarantine treatments.

The research and development of quarantine treatments requires the following general procedures and information:

1. Determine which fruit fly species are present in the area where crops (e.g., fruit) are harvested for export, the fruit fly distribution, host range and quarantine importance to importing countries (includes preliminary contacts with the regulatory agencies of importing countries).

2. Determine the host status of the fruit for fruit fly infestation and host/pest relationships for fruit that are hosts.

3. Develop techniques for mass-rearing fruit flies of quarantine importance in the laboratory for experiments (includes fruit fly biology and life cycle information).

4. Select candidate quarantine treatment technologies, (e.g., heat or cold treatments) that the fruit will tolerate. Quarantine treatment technologies, primarily laboratory equipment and research methods necessary for basic studies, are transferred at this point.

5. Perform tolerance/quality tests of treatments against fruit in the laboratory.

6. Develop thermal mortality data for fruit fly eggs and larvae.

7. Develop treatment efficacy data that is acceptable to the regulatory agencies of importing countries (includes approved quarantine treatment security statistics). Commercial treatment technology and equipment is transferred to coincide with the completion of efficacy data and the initiation of confirmatory testing.

8. Perform confirmatory tests as required by the regulatory agencies of importing countries.

9. Submit data to the regulatory agencies of importing countries for approval. All research data may require review by the regulatory agencies of importing countries, and regulatory personnel may directly observe experimental procedures, particularly during confirmatory tests.

For purpose of discussion herein, this list of requirements is called the Quarantine treatment (QT) Flow Chart, and requirements 1-3, 4-6, and 7-9 are the preliminary, intermediate, and final stages, respectively, for quarantine treatments research and development. The successful completion of the preliminary stage determines when a SPIN is ready for the initial quarantine treatment technology transfer of

research equipment and methods. The successful completion of the intermediate stage determines when a SPIN is ready for transfer of commercial treatment technology and equipment. I used these procedures and information requirements to determine the progress of each SPIN toward developing the quarantine treatments needed for their exports, and the research time line chart (Figure 1). The time lines shown in Figure 1 represent estimated minimum times that will be required to complete each of the three stages of the QT Flow Chart. Delays in determining the fruit fly species present and their distribution and host status, or in developing rearing methods, will increase the time lines. Although the intermediate and final phases can often be initiated before completion of the preliminary stage, the two latter stages cannot be completed without the basic information provided during the preliminary stage.

The post-fumigation-era quarantine treatment technologies available today use heat and/or cold treatment in the form of hot-water immersion, vapor heat, high-temperature forced-air, and refrigeration. These treatments increase or decrease the temperature of the host beyond the thermal limits of the target quarantine pest. Pesticide use, especially for postharvest use on fruit and vegetables, has declined in the developed nations over the past decade. It should be noted that none of the quarantine treatment technologies available for transfer to the SPIN use toxic compounds. In fact, both hot-water immersion and high-temperature forced-air treatments were developed as alternatives to fumigation for tropical fruits, such as litchi, mango, and papaya.

Australia, Japan, New Zealand, the U.S., and other countries have private, state and/or federal research agencies that supply scientific data from the research and development of quarantine treatments to the regulatory agencies. In these countries, the needs of the commercial sector and regulatory agencies directly influence research activities. Grower/exporter groups usually represent the commercial sector. The existence of and close working relationship between regulatory and research agencies and commercial sector groups facilitates the timely development of quarantine treatments in developed countries. I looked for this important aspect in each SPIN I visited because of its impact on the research and development of quarantine treatments.

As quarantine treatment research and development studies are eventually completed in the various SPIN, the data must be submitted for review by the regulatory agency in each country targeted for marketing exported agricultural commodities. Cross-acceptance of treatment technologies and research data for different treatments will occur among some countries and not others. For example, the high-temperature forced-air (HTFA) treatment technology is accepted by Australia, New Zealand and the U.S., but not yet by Japan (which is presently reviewing HTFA data from the U.S.). Furthermore, quarantine statistics required to show quarantine treatment efficacy differ among countries. Therefore, each SPIN should initiate discussions with regulatory agencies in each country targeted for marketing at the onset of quarantine treatment research. Preliminary discussion should identify what tests and quarantine statistics are required to prove

treatment quarantine security, and whether there are any other requirements specific to the regulatory agency in each country.

FIJI

In general, Fiji has the most advantages for immediate impact by the CAD of the three SPIN covered in this report. Fiji has cost-effective and reliable surface and air transportation for exporting agricultural commodities, and responsive government scientific and regulatory agencies to deal with regulatory barriers and quarantine issues. Both commercial and government sectors have formed groups within their sectors that are dealing with commercial export and quarantine problems. These groups should eventually coalesce to form interfacing groups comprised of members from both sectors to facilitate problem solving. Fiji also has the best information regarding the species of fruit flies found in the country, with mass-rearing techniques and some host status information already made available by the on-going FAO South Pacific Regional Fruit Fly Project (SPRFFP). The fruit and vegetable industry of Fiji is rapidly expanding to develop export markets in Australia and New Zealand, for which the limiting factor in most cases will be fruit flies and the need for quarantine treatment technology. Therefore, Fiji has the best potential to immediately benefit from the transfer of quarantine treatment technology through the auspices of the CAD.

Most fruit and vegetables exported from Fiji must be fumigated with ethylene dibromide (EDB) to kill any fruit fly eggs or larvae present in the commodity. The Fiji Plant Protection and Quarantine (PPQ) Service at Nadi Airport is responsible for fumigating the commodities and processing the phytosanitary certificates. My observations at the Nadi fumigation facility and discussions with PPQ personnel and exporters lead me to conclude that the EDB fumigations are not done with precision. Improper fumigation causes scalding and loss of quality, or, at worst, infested commodities arriving at destination. This problem can be solved by replacing poor fumigant concentration monitoring equipment and by additional training of PPQ personnel in fumigation procedures and equipment maintenance and calibration. I recommend that the fumigant monitoring method be changed from a Hassler Fumiscope to Kitagawa tubes, which are more accurate and require little or no maintenance and no calibration. Immediate assistance from New Zealand might be appropriate here because New Zealand Ministry of Agriculture and Fisheries (MAF) is responsible for certifying the chamber for fumigating commodities exported to their country. One or two major exporters should also be involved in these training programs because they are directly impacted by the fumigation service they receive. The more exporters know about fumigation, the better service they will demand.

Training PPQ personnel and exporters in fumigation procedures is a temporary measure for Fiji's agricultural export industry. Within one to two years, the allowable EDB residue tolerance for fruit and vegetables imported into Australia and New Zealand will be reduced to effectively preclude the use of this fumigant. The only remaining

concerned primarily with quarantine entomology, with particular emphasis on tephritid fruit flies and the research and development of quarantine treatments.

The research and development of quarantine treatments requires the following general procedures and information:

1. Determine which fruit fly species are present in the area where crops (e.g., fruit) are harvested for export, the fruit fly distribution, host range and quarantine importance to importing countries (includes preliminary contacts with the regulatory agencies of importing countries).

2. Determine the host status of the fruit for fruit fly infestation and host/pest relationships for fruit that are hosts.

3. Develop techniques for mass-rearing fruit flies of quarantine importance in the laboratory for experiments (includes fruit fly biology and life cycle information).

4. Select candidate quarantine treatment technologies, (e.g., heat or cold treatments) that the fruit will tolerate. Quarantine treatment technologies, primarily laboratory equipment and research methods necessary for basic studies, are transferred at this point.

5. Perform tolerance/quality tests of treatments against fruit in the laboratory.

6. Develop thermal mortality data for fruit fly eggs and larvae.

7. Develop treatment efficacy data that is acceptable to the regulatory agencies of importing countries (includes approved quarantine treatment security statistics). Commercial treatment technology and equipment is transferred to coincide with the completion of efficacy data and the initiation of confirmatory testing.

8. Perform confirmatory tests as required by the regulatory agencies of importing countries.

9. Submit data to the regulatory agencies of importing countries for approval. All research data may require review by the regulatory agencies of importing countries, and regulatory personnel may directly observe experimental procedures, particularly during confirmatory tests.

For purpose of discussion herein, this list of requirements is called the Quarantine treatment (QT) Flow Chart, and requirements 1-3, 4-6, and 7-9 are the preliminary, intermediate, and final stages, respectively, for quarantine treatments research and development. The successful completion of the preliminary stage determines when a SPIN is ready for the initial quarantine treatment technology transfer of

fumigants are methyl bromide and phosphine, which are usually too phytotoxic for use on fresh fruit and vegetables. Fiji should begin immediately to develop alternative quarantine treatments for fruit and vegetables of export importance.

The SPRFFP, directed by Mr. Allan Allwood, has advanced Fiji in the QT Flow Chart whereby most of the preliminary stage is complete. The information developed by the SPRFFP is directly impacting on-going PPQ efforts in Fiji by determining exactly what fruit fly species are present, and their distribution and host range. The SPRFFP is also developing host status information for some vegetables of export importance. Rearing methods were developed for two fruit fly species of major quarantine importance and laboratory colonies have been established. Fiji is now ready to initiate the intermediate stage of quarantine treatment research in the laboratory for capsicums, cucurbits, okra, papaya, squash, and zucchini, all crops of major export potential. The HTFA treatment technology, which was developed for papaya exported from Hawaii and has shown potential for other fruit and vegetables, should be adopted by Fiji. Laboratory research to accomplish the intermediate stage will require transient-temperature water baths to determine the thermal mortality rates for the eggs and larvae of fruit fly species of quarantine importance, and a small-scale HTFA treatment chamber to run both tolerance/quality tests and preliminary efficacy tests with papaya. The CAD should act immediately to begin transferring this treatment technology and the necessary equipment to Fiji. The research component of CAD technology transfer should be through the SPRFFP, and the work should be done under the auspices of the SPRFFP. To ensure acceptance of research data developed by the SPRFFP, the project should immediately establish communications with the regulatory agencies in all countries targeted for marketing. Fiji government research (Koronivia) and PPQ personnel should also be involved in the research program to increase staff needed to accomplish the workload, and because eventually PPQ personnel will be required to certify commercial treatment facilities and monitor and certify treatments. With the completion of the research phase, the responsibility for operating treatment facilities must be immediately passed to the commercial sector. During the research, the commercial sector must provide fruit for tests and acquire a working knowledge of HTFA treatment operation, treatment facility requirements, and cost factors. I recommend that the CAD coordinate efforts to maintain close commercial sector support for quarantine treatment research and development. I recommend that the commercial treatment facilities be built by and/or owned and operated by an industry association or privately contracted commercial operator to provide direct service to growers/exporters to maintain the privatization of agricultural commerce. The CAD should provide training to the scientific, regulatory and commercial sectors through study tours to Hawaii to observe on-going commercial, research and regulatory operations.

During the intermediate and final stages of the QT Flow Chart, engineering capability and expertise will be required to design and construct laboratory test equipment and prototype commercial treatment facilities. I recommend using the resources of the University of

Hawaii Department of Agricultural Engineering and, specifically, the expertise of Dr. Michael Williamson. Dr. Williamson has worked closely with the USDA laboratory in Hilo on the development of the HTFA quarantine treatment for papaya, and he designed and built the first prototype commercial HTFA treatment research facility and the first mobile HTFA treatment facility for treating papaya exported from Hawaii. Dr. Williamson was also responsible for developing regulatory certification procedures for certifying HTFA treatment facilities. The CAD can access Dr. Williamson and other University of Hawaii personnel under a PASA (see enclosed letter from Dr. Noel Kefford dated November 5, 1991 regarding this subject).

In addition to the SPRFFP work described above, Mr. Allwood is developing integrated pest management strategies in the form of bait sprays and bait spray application methods. Bait sprays reduce fruit fly populations and infestations in growing areas, and thereby reduce dependence on and use of pesticides. Techniques such as trap crops sprayed with bait sprays will also decrease the use of pesticides and pesticide residues in fruit and vegetables. Biological control, which is a valuable method of controlling many economic agricultural pests, is not a viable method for controlling fruit flies at this time and should not be considered a research priority in any of the SPIN. This view should be conveyed to the German Biological Control Project (GBCP) that is currently formalizing its work program.

Whereas fruit flies are the limiting factor in the export of fruit and vegetables, nematodes are the limiting factor in the export of root crops from Fiji. Ginger is the major root crop of export importance. Similar to the situation with fruit flies, there is a lack of information regarding what species of nematodes of quarantine importance are found in Fiji (specifically the golden nematode), and the host status of ginger at different stages of maturity and in different growing areas. The absence of this information has closed the huge Japanese market for fresh ginger from Fiji. I recommend the placement of a nematologist in Fiji to do a short-term study to specifically answer these questions. I suggest using the expertise of a nematologist from Japan because Fiji is concerned specifically with the Japan ginger market. This matter should be conveyed to JIACA - (Japan equivalent to USAID).

Scale insects are a limiting factor in the export of ginger to Canada and the U.S. Non-chemical methods for controlling these quarantine pests in the field and postharvest quarantine treatments need to be studied. The CAD should determine the potential for the GBCP to work on this problem, and develop expert resources to determine whether treatment technologies, such as ultrasonic cleaning and hot-water immersion are applicable. Biological Control of quarantine pests, other than fruit flies, may reduce dependence on pesticides and the severity of quarantine treatments if infestation is greatly reduced.

Another root crop of major economic potential is kava for non-traditional uses in the herbal and pharmaceutical industries. The CAD should assist in determining the marketing potential for kava, which

is a commodity that can be processed for export in Fiji and that has no quarantine restrictions in the processed form.

SPECIFIC RECOMMENDATIONS AND/OR INTERVENTIONS

1. Provide training programs for PPQ and industry personnel in fumigation procedures, and the calibration and maintenance of equipment. One or two members from grower/exporter groups should be included in the training programs

2. Provide literature and encourage PPQ to change the EDB fumigant concentration monitoring method from Hassler Fumiscopes to Kitagawa tubes.

   NOTE: Because Fiji cannot wait for the start of the CAD to develop responses to recommendations 1 and 2, it may be appropriate for the CAD to request some action from New Zealand MAF because this regulatory agency has been involved with the certification/inspection of the chamber in Fiji.

3. Work closely with the SPRFFP to transfer quarantine treatment research and development technology. Research is under the direction of the SPRFFP with the CAD working closely with the commercial sector to coordinate and maintain direction, support and transfer of information.

4. Invite regulatory personnel from countries targeted as export markets to identify quarantine problems and acceptable research data and quarantine security statistics for non-host commodities and quarantine treatments. Problems should then be classified and prioritized based on the probable cost to find the solutions and the potential economic returns.

5. Initiate quarantine treatment technology transfer to the SPRFFP, beginning with laboratory equipment and research techniques (see equipment/cost list).

6. Develop training programs and study tours to Hawaii for SPRFFP, PPQ, and other Fiji research personnel, and one or two grower/exporters to observe on-going commercial, research and regulatory operations.

7. Coordinate commercial sector efforts to design and/or build and/or purchase appropriate commercial quarantine treatment facilities. Where engineering expertise is required, obtain the support of the University of Hawaii Department of Agricultural Engineering (see list of equipment/costs and personnel/travel).

8. Provide training to the regulatory and commercial sectors in the certification and operation of commercial quarantine treatment facilities through training courses and study tours.

9. Convey to JIACA the need for a nematologist from Japan to determine the species of nematodes found in Fiji, and whether the

golden nematode is present.

10. Determine the potential for the GBCP to develop biological control measures for insects of quarantine importance, other than fruit flies, that could reduce dependence on pesticides and the severity of quarantine treatments.

11. Assist in determining the marketing potential for exporting, which is a commodity that can be processed for export in Fiji and that has no quarantine restrictions in the processed form.

12. Develop expert information to determine whether treatments, such as hot-water immersion and ultrasonic cleaning, applicable quarantine treatment technologies for root crops.

EQUIPMENT/COSTS

1. Transient-temperature water bath system.....$ 4,500

2. Laboratory-scale HTFA treatment facility.....$25,000

PERSONNEL/1992 TRAVEL TO FIJI

1. John Armstrong.....1 trip for 3 weeks, includes participation in the Crawford Foundation Conference...$ 6,500

2. Michael Williamson.....1 trip for 1 week.....$ 3,000

3. USDA-APHIS-PPQ person.....1 trip for 1 week.....$ 3,000

WESTERN SAMOA

In general, W. Samoa is in the preliminary stage of the QT Flow Chart. Although several fruit fly species are known to occur in W. Samoa, the presence of other species is questionable. Furthermore, little is known about the fruit fly locality and host ranges or the host status of fruits of export importance.

W. Samoa has reliable but limited surface transportation available for exporting agricultural commodities, but the potential for increased surface shipment capabilities is good. Unfortunately, W. Samoa does not have reliable air transportation for exporting agricultural commodities, which will not change unless more air carriers service W. Samoa or the present air carriers make a commitment to provide better service.

The government sector is limited in its capabilities to provide services needed to export agricultural commodities, but this problem can be overcome with additional funding, personnel and training. The private sector consists of entrepreneurs that have not yet developed into commercial groups capable of dealing with export and quarantine problems or interfacing with the government sector to facilitate

problem solving.

Presently, taro is the major agricultural crop of export importance, although test shipments of bananas to New Zealand were initiated with a good potential for success if export quarantine requirements (such as shipping only mature-green fruit) are consistently met and good fruit quality is maintained.

Although the SPRFFP has done some basic work, W. Samoa needs to accelerate its fruit fly research programs, especially those areas that impact the preliminary stage of the QT Flow Chart. Furthermore, there are several areas where the transfer of quarantine treatment and other technologies through the auspices of the CAD can immediately benefit the export of agricultural commodities from W. Samoa.

Specifically, W. Samoa needs to accelerate its fruit fly research programs through the auspices of Mr. Allwood's SPRFFP to:

1. Determine the exact number of fruit fly species that occur in W. Samoa and their locality and host ranges.

2. Determine the host status of fruit and vegetables of export importance at different stages of maturity.

3. Develop mass-rearing techniques for fruit fly species of quarantine importance to provide material for laboratory/field studies to determine host/pest relationships, biology and life cycle information, and (later) baseline studies of tolerance to candidate quarantine treatments.

The CAD and SPRFFP must work together in a combined effort with the SPRFFP responsible for the fruit fly research and the CAD working with the commercial sector. The eventual transfer of quarantine treatment technology will be through the CAD and following on the results from SPRFFP research. All aspects of fruit fly research can be augmented through the cooperative efforts of UOP Alafua Campus and the Department of Agriculture/Nu'u Research Center. Graduate students should be used to develop needed information through degree-oriented studies. A UN volunteer (UNV) under Mr. Allwood's direction should be placed in W. Samoa to facilitate and coordinate fruit fly research efforts. Furthermore, the FAO Fruit Tree Project should be involved in testing the host status of the new fruits of export importance being developed for cultivation in W. Samoa,, and quality studies (later) to determine the fruit tolerance to candidate quarantine treatments. To ensure acceptance of research data, communications should be established immediately with the regulatory agencies in all countries targeted for marketing of agricultural commodities. These communications should be established through the W. Samoa Department of Agriculture PPQ because this regulatory agency is responsible for phytosanitary certification of all export commodities.

In addition to the fruit fly research, the presence of other insects, nematodes and other pests of quarantine importance must be determined and adequate quarantine treatments must be developed as

necessary. Basic information on quarantine pests should be obtained from regulatory agencies in the countries targeted for marketing. This also needs to be done under the auspices of the W. Samoa Department of Agriculture PPQ.

W. Samoa has good potential for establishing export markets for bananas in New Zealand. However, optimum harvesting, handling, quarantine, and shipping procedures must be developed to maximize this opportunity. The CAD should provide training courses to government and commercial sector personnel through study tours to Hawaii to view commercial banana operations. There is a basis for the establishment of a banana grower/exporter group in W. Samoa. The establishment of such a group would greatly benefit a W. Samoa banana export industry. The CAD should encourage the formation of a banana grower/exporter group by providing contact with experts in this area of marketing.

Although bananas at the mature-green stage of ripeness are not a fruit fly host in W. Samoa, the use of hot-water immersion treatment may provide postharvest decay control, slower ripening and prolonged shelflife, removal of surface pests of quarantine importance (such as scales, mealy bugs, and "hitch hikers"), and fruit that are clean in appearance. Hot-water immersion technology is available for transfer to W. Samoa through the auspices of the CAD. Both quality and efficacy studies are needed and can be done by USP graduate students and/or Nu'u Research Center personnel with direct input from the commercial sector. Equipment required for hot-water immersion quality studies include a hot-water immersion tank with electric or liquid propane heater and a water circulator system, a thermostatic heater controller, a data logger with thermocouples and leads to monitor temperatures, a calibration thermometer, and a fruit immersing basket.

PPQ regulatory personnel in W. Samoa are trained primarily in detection and treatment of quarantine pests on imported commodities. An increase in the number of PPQ personnel and training in export quarantine treatments and practices is required, especially for treatment technologies other than fumigation. The CAD can provide training courses and study tours to Hawaii where PPQ personnel can see new quarantine technologies in use and on-going USDA-APHIS operations. Training and study tours are also needed for all countries targeted for marketing W. Samoa agricultural commodities.

The production of taro, the main economic crop in W. Samoa for local consumption and export, was limited by the taro armyworm, which has become a major economic pest. Control measures must be developed for the taro armyworm if W. Samoa is to maintain uniform productivity. The Department of Agriculture, Nu'u Research Center, and the South Pacific Commission (especially the GBCP) should develop coordinated research to provide the necessary control measures. The taro armyworm should be a research priority for the GBCP, which may have technologies for controlling the taro armyworm.

A taro washer is needed to handle the potential export volume of taro. The University of Hawaii Department of Agriculture Engineering

has developed technology in this area. The CAD should work with Dr. Michael Williamson to transfer taro washer technology to W. Samoa or, if necessary, to develop the needed taro washer technology.

Kava is another root crop with major export potential for W. Samoa for non-traditional uses in the herbal and pharmaceutical industries. Nu'u Research Center has begun a kava germplasm collection and breeding program because of the increased demand worldwide for this agricultural commodity. The CAD should assist in determining the marketing potential for kava, which is a commodity that can be processed for export in W. Samoa and that has no quarantine restrictions in the processed form.

Fruit juices and purees, and coconut cream, offer potential export markets for W. Samoa. The CAD should assess the potential for expansion of these industries and aid in the transfer of processing technologies, such as ultra heat treatment. Dr. Harvey Chan, USDA-ARS Tropical Fruit and Vegetable Research Laboratory, Hilo, Hawaii, was responsible for research toward the development of papaya and guava purees, and has worked with fruit juice technologies. Dr. Chan should be brought to W. Samoa to help the CAD assess the fruit juice and puree industry technology requirements to successfully enter this export market. Dr. Chan would also be able to determine the potential for transferring ultra heat treatment technology to W. Samoa.

Whenever possible, the CAD should encourage and support the formation of grower/exporter groups that can speak to the problems of their respective agricultural industries and interface with the proper research and regulatory agencies to develop solutions that will maintain strong export capabilities.

SPECIFIC RECOMMENDATIONS AND/OR INTERVENTIONS

1. Coordinate efforts with the SPRFFP to accelerate its program in W. Samoa through liaison activities with the Department of Agriculture/Nu'u Research Center and USP Alafua Campus. Develop commercial sector sponsorship of research that directly support the SPRFFP, primarily through the use of the graduate student program at USP. Specific research problems that impact the commercial agricultural sector include:

   A. Determine what fruit fly species are present in W. Samoa, and their location and host ranges.

   B. Determine the host status of 'Giant Cavendish' bananas for export.

   C. Develop optimum production, harvesting, handling, packing, and shipping procedures and conditions for 'Giant Cavendish' bananas. The CAD can provide training courses and study tours to major banana producing areas, such as Hawaii, for Department of Agriculture, research, and commercial sector personnel.

D. Determine the feasibility of hot-water immersion treatment to clean bananas, provide quarantine security against quarantine pests other than fruit flies, delay ripening to prolong shelflife, and provide postharvest decay control. The CAD should assist in the transfer of hot-water immersion treatment technology.

E. Develop rearing procedures, including egg collection methods and larval diets, for fruit fly species of quarantine importance found in W. Samoa.

F. Develop thermal mortality data for the eggs and larvae of fruit flies of quarantine importance.

G. Develop quality data for the effects of quarantine treatment technologies on fruit and vegetables of export importance.

H. Develop efficacy data for applicable quarantine treatment technologies for fruit and vegetables of export importance to meet the regulatory standards of importing countries.

I. Determine the host status for fruit and vegetables of economic and export importance. Non-host fruit and vegetable exports will not require quarantine treatment.

Because there are so many potential degree-oriented projects, the CAD should work with the commercial sector to assess the export potential of fruit and vegetables and prioritize research on the basis of commercial sector needs.

1a. The CAD should transfer hot-water immersion treatment technology through training and study tours to Hawaii, and by providing the needed hot-water treatment equipment for quality and efficacy studies.

1b. The CAD should encourage the placement of a UNV in W. Samoa to coordinate the SPRFFP and other research projects impacting the commercial agricultural development of W. Samoa.

2. Provide training and study tours for Department of Agriculture PPQ personnel to learn export quarantine procedures in the countries targeted for marketing W. Samoa agricultural commodities.

3. Work with taro growers and exporters in W. Samoa to obtain SPC help in developing control methods for the taro army worm.

4. Transfer technology leading to the development of a taro washer for taro exported from W. Samoa. The taro washer may need to incorporate hot-water treatment technology to provide quarantine security for some importing countries.

5. Assess the potential for exporting fruit juices, fruit purees, and coconut cream from W. Samoa and prioritize needed

technologies to support the development of these export industries. Dr. Harvey Chan, USDA-ARS, should be brought to W. Samoa to help with the assessment and prioritization phase, and in the transfer of needed technologies.

6. Provide information and support for the development of commercial associations, cooperatives, and/or grower/exporter groups for different agricultural commodities to strengthen W. Samoa export capabilities and interface with regulatory and research sectors to facilitate problem solving and eventually develop centralized quarantine treatment and/or packing facilities.

7. Invite regulatory personnel from countries targeted as export markets to identify quarantine problems and acceptable research data and quarantine security statistics for non-host commodities and quarantine treatments as necessary.

8. Assist in determining the marketing potential for exporting kava, which is a commodity that can be processed for export in W. Samoa and that has no quarantine restrictions in the processed form.

EQUIPMENT/COSTS

1. Hot-water immersion equipment.....$ 3,500

PERSONNEL/1992 TRAVEL TO W. SAMOA

1. John Armstrong.....1 trip for 1 week.....$ 3,000
2. Michael Williamson.....1 trip for 1 week.....$ 3,000
3. Harvey Chan.....1 trip for 1 week.....$ 3,000
4. USDA-APHIS-PPQ person..1 trip for 1 week.....$ 3,000

VANUATU

Vanuatu offers the CAD an ideal challenge to directly aid in this country's commercial agricultural development from the initial stages. Vanuatu has good potential for developing commercial agricultural export industries because it has the advantages of possessing large tracts of fallow land, a cost-effective labor force, excellent agricultural conditions for growing a wide range of crops of export importance, and good air and surface transportation capabilities (the airport on Efate is capable of servicing the largest jet aircraft).

In general, Vanuatu has not yet begun the preliminary stage of the QT Flow Chart. Although numerous fruit fly species are believed to occur in Vanuatu, there is little or no definitive information regarding how many fruit fly species actually occur or their locality and host ranges. This is a problem that needs immediate attention

before Vanuatu can begin developing agricultural export markets. For the CAD to proceed accordingly, Vanuatu should be included in the SPRFFP as soon as possible, with a United Nations volunteer placed there to coordinate fruit fly research efforts.

Specifically, Vanuatu needs to begin fruit fly research to:

1. Determine the exact number of fruit fly species that occur in Vanuatu and their locality and host ranges.

2. Determine the host status of fruit and vegetables of export importance at different stages of maturity.

3. Develop mass-rearing techniques for fruit fly species of quarantine importance to provide material for laboratory/field studies to determine host/pest relationships, biology and life cycle information, and (later) baseline studies of tolerance to candidate quarantine treatment technologies.

In addition to the fruit fly research, the presence of other insects, nematodes and other pests of quarantine importance must be determined and adequate quarantine treatments must be developed as necessary. Basic information on quarantine pests should be obtained from regulatory agencies in the countries targeted for marketing. This should be done under the auspices of the Vanuatu Department of Agriculture, Livestock and Horticulture (DALH) PPQ.

Presently, the two major economically important agricultural commodities for Vanuatu are cattle and root crops. The DALH PPQ capabilities are limited primarily to the cattle industry with very little regulatory control of imported commodities. Although Vanuatu has well developed quarantine legislation for livestock, the quarantine legislation covering plants is inadequate. Both PPQ and research facilities are almost non-existent, with the exception of those facilities for the production and germplasm collection of root crops.

To protect Vanuatu agriculture, and as a basis for commercial agricultural export development, the PPQ staff needs to be increased in size to cover all regulatory areas. The personnel must be adequately trained to maintain regulatory standards required to prevent the introduction of quarantine pests and to apply and/or certify treatments of export commodities. Additionally, PPQ facilities and equipment require construction and/or major upgrading to accomplish the goals of PPQ activities, including office and laboratory space.

The present agricultural industry of Vanuatu for both domestic and export commodities consists of individual entrepreneurs without the benefit of any grower and/or exporter associations or groups. Furthermore, there appears to be little or no cohesive interfacing between the commercial agriculture and government regulatory sectors. The CAD should encourage and support the formation of grower and/or export organizations combined with government regulatory support.

The root crop industry, which includes many cultivars of cassava, kava, taro, sweet potato, and yam, provides numerous export opportunities. Since nematodes of quarantine importance exist in Vanuatu, quarantine disinfestation treatments will be required for root crops exported to some foreign markets. Hot-water immersion treatment for root crops, such as yams, offers the best potential as a quarantine treatment technology. Hot-water immersion treatment technology and equipment are available and can be placed in Vanuatu at minimal cost to determine both treatment efficacy and quality. Before beginning research, however, information regarding quarantine requirements must be obtained from regulatory agencies in countries targeted for marketing. The kava production and germplasm collection of vanuatu is the most extensive of the SPIN, and export of kava for non-traditional uses in the herbal and pharmaceutical industries may be of major economic importance. Kava is a commodity that, when processed, has no quarantine restrictions.

Processed foods, spice production and exotic tropical nuts also offer areas of potential export importance for Vanuatu. The CAD should evaluate the economic potential of these commodities. Processed foods, spices and exotic tropical nuts generally have no quarantine restrictions. If economically feasible, the CAD should work with entrepreneurs to develop both the production and marketing aspects, including the formation of producer/exporter associations that interface with the government regulatory sector.

If exotic tropical nuts are found to provide an export opportunity, the research and development of mechanical nut crackers for the different nut species will be required. This work can be done through the University of Hawaii Department of Agricultural Engineering, which has expertise in this area. Spice production may provide similar export possibilities for Vanuatu and should also be evaluated by the CAD for economic feasibility.

SPECIFIC RECOMMENDATIONS AND/OR INTERVENTIONS

1. Expand the SPRFFP to include Vanuatu and assign a UNV to Vanuatu to coordinate and accelerate fruit fly research efforts. The CAD should work closely with the SPRFFP and the commercial sector to prioritize commercial needs for any agricultural commodity with export importance.

2. Assess the export potential for processed foods, exotic tropical nuts, spices, and root crops because processed commodities generally have no quarantine restrictions.

3. If root crops are determined to have export potential, transfer hot-water immersion treatment technology to Vanuatu for quality and efficacy studies for disinfesting root crops of nematodes and other quarantine pests. A washer for root crops may also be required for cleaning the commodity before export. Dr. Michael Williamson, University of Hawaii Department of Agricultural Engineering, should be contacted regarding the development of a root crops washer.

4. Develop training courses and provide study tours for PPQ personnel in the area of import/export regulatory quarantine. Provide direction in the designing, constructing and equipping of modern quarantine and methods development facilities for use by PPQ personnel to facilitate and service an expanding commercial agricultural export industry.

5. Encourage and support the formation of grower/exporter groups for different agricultural commodities to strengthen Vanuatu's export capabilities and to interface with regulatory and research sectors to facilitate problem solving.

6. Bring regulatory personnel from countries targeted for Vanuatu's export commodities to identify quarantine problems and acceptable solutions, including required research data and/or quarantine security statistics for both non-host status and quarantine treatments. The quarantine risk assessment and Bilateral Quarantine Agreement, including maximum allowable pest limits for bananas, provided to Vanuatu by New Zealand MAF (dated July 22, 1991) is a good example of the information needed from the regulatory agencies of importing countries and the starting point for prioritizing the research and development of quarantine treatments.

EQUIPMENT/COSTS

1. PPQ facilities (includes work area/laboratory space and some equipment, such as microscopes).....$50,000

2. Hot-water immersion equipment (if needed).....$ 3,500

PERSONNEL/1992 TRAVEL TO VANUATU

1. Michael Williamson.....1 trip for 1 week.....$ 3,000

CONCLUDING REMARKS AND GENERAL RECOMMENDATIONS

Overall, the success of the CAD in developing commercial agriculture for export from the SPIN depends on close cooperative efforts between the SPRFFP and the CAD, with the CAD working with the commercial sector. The data developed by the SPRFFP must be acceptable to the regulatory agencies of all countries targeted for marketing of exported agricultural commodities.

Other SPIN that are not part of the SPRFFP, such as Vanuatu, should be brought into the program as soon as possible and fruit fly research should be accelerated to obtain the basic information required to begin research and development of quarantine treatments. Likewise, SPIN that have well developed fruit fly research programs, such as Cook Islands and Tonga, should be brought into the CAD to provide uniformity to USAID-sponsored programs in the South Pacific.

Seminars on the research and development of quarantine treatments

given in the SPIN covered in this report demonstrated the need for information transfer regarding this subject. Because the seminar format and information is standardized regardless of country, a video tape of the seminar should be made for use in the SPIN. Using this training technology, the seminar can be given to many different groups and in different SPIN without requiring the presence of a quarantine treatment research and the attendant travel expenses. Furthermore, the information is continually available for review by interested parties.

The development of quarantine treatments and treatment facilities should be industry driven based on export needs. Treatment facilities should be owned and operated by industry associations or private, licensed operators under contract to the user groups. This is standard practice in most exporting countries and a practice that should be encouraged in the SPIN. Government regulatory agencies that become treatment facility operators may not provide the quality of service required by exporting groups and are generally immune to legal recourse.

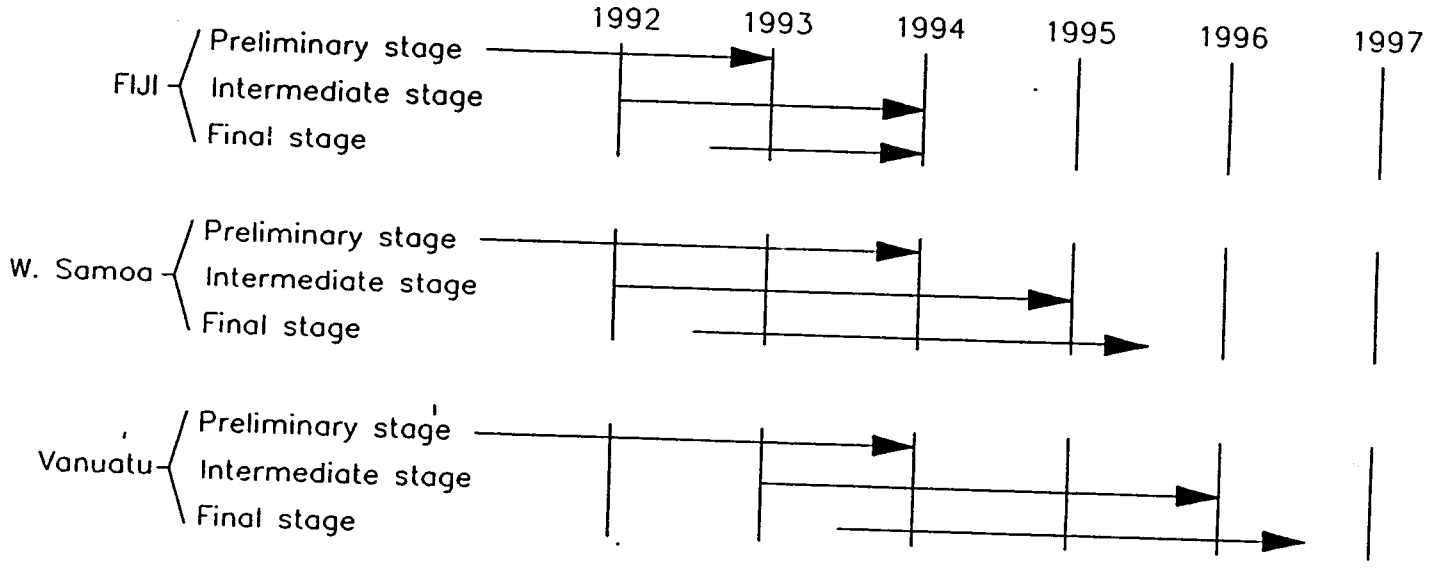
During the intermediate stage of the QT Flow Chart when quarantine treatment technologies are being transferred, emphasis must be placed of the development of quality data along with efficacy data. Furthermore, exporting industries should be actively involved from the onset of quarantine treatment research and development with appropriate opportunity for input to avoid the development of user-incompatible treatments.

Training in new quarantine treatment technologies should be provided for PPQ, research, and grower/exporter personnel to encourage common understanding of the principles, requirements, objectives, and expected results of the treatments.

EQUIPMENT/COSTS

1. Quarantine treatment research and development video, consisting of 2 hours of edited tape that includes an original and 4 duplicates of quarantine treatment lectures, visuals in laboratory, equipment displays, and graphics to show all phases of research @ $75/h for shooting the video and $100/h for editing.....$1,750

Figure 1. Quarantine Treatments Flow Chart 1/ General Time Lines 2/ for Gathering of Baseline Information, Quarantine Technology Transfer, and the Research and Development of Quarantine Treatments Aganist Fruit Flies



1/ From Document 2, pages 3 and 4
2/ Time lines indicate minimum times to completion of preliminary, intermediate and final stages

ANNEX G

FRIENDLY ISLANDS MARKETING COOPERATIVE LTD.

(MARKETING VANILLA, HAND CRAFTS, FISH, FISHING SUPPLIES & VEGETABLES)

Room 220 Tungi Arcade
P.O. Box 523, Nuku'alofa, Tonga

Telephone: 21-988
23-779
Fax: (676) 21-972

Ref/U0100908.081

FRIENDLY ISLANDS MARKETING

COOPERATIVE LTD. (FIMCO)

A STRUCTURAL REVIEW TO ASSESS FIMCO'S STRENGTHS AND WEAKNESSES WITH A VIEW TOWARD APPLICABILITY IN OTHER SOUTH PACIFIC NATIONS

BY: JOHN G. KREAG

AUGUST 1991

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INTRODUCTION

The following will give details on how FIMCO is organized and operates. It should be taken as an example of how a business was structured in a Tongan environment to create the necessary accountability and incentives to flourish.

Any attempt to use FIMCO as a model in other situations should concentrate minimally on the structure, for it is relatively easy to create similar structures. Rather it is much more important to emphasize the right mix of accountability and incentives so as to make it an attractive proposition to all involved, including:

the owners
the management
the employees
the financiers
the public

for the interests of each of the above MUST be kept in a proper balance if the business is to prosper.

It is extremely important to note that FIMCO's business is primarily successful because of the way it is organized and because it has the confidence of the banks, employees and producers.

FIMCO is not dependent upon large amounts of fixed assets, high tech equipment or processing skills, and as such is constantly responding to competitive preasures to perform more efficiently.

THE ENTITY

FIMCO is a producer owned business, in this case a cooperative, however it could have been just as successful as a producer owned company.

Another possibility would be to operate as a producer association. However for legal liability and other reasons is generally more practical for an association to carry out its business activities through a registered and limited liability company or cooperative.

THE OWNERSHIP

FIMCO is 100% owned by individual farmers, fishermen and hand craft producers each of whom has one share. At the end of July there were over 1800 shareholder members as follows:

	MEMBERSHIPS
Vanilla farmers	972
Vegetable farmers	356
Hand craft producers	391
Fishermen	105
TOTAL AT JULY 27, 1991	1824

OWNERSHIP PARTICIPATION

Ownership Participation in decision making at FIMCO is exercised at General Meetings, Section Committee Meetings, and Executive Committee Meetings.

Two general meetings are held each year one on Tongatapu the main island and one on Vava'u the second most important island. FIMCO's business and membership is split almost evenly between the two islands with other islands generating less than 5% of the business.

The annual general meeting is alternated between Vava'u and Tongatapu Immediately proceeding the AGM a general meeting is held on the other island for consideration of the same issues as will appear at the AGM. While this practice is a bit cumbersome, in practice, it has worked very smoothly and has allowed members to have an annual voice at general meetings on the governance of the business.

Four committees of seven persons each are elected at the AGM to represent:

Vanilla Farmers
Vegetable Growers
Hand Craft producers
Fishermen

These committees then select their own chairperson who then becomes a member of the Executive Committee (the primary policy making body) · Two other persons are also members of the Executive Committee. There is an outside representative who is jointly appointed by the 4 Executive Committee members and the Registrar of Cooperatives. For the last few years this has been the Managing Director of the Tonga Development Bank. FIMCO's manager is the Secretary for the Executive Committee, a non voting position.

THE FINANCING

FIMCO has obtained financing from three sources:

1. From Owners - Share Capital and retained profits ($318,000 at 31-3-91)
2. Development assistance - Capital contributions ($287,000 at 31-3-91)
3. Short term bank loans:

   - $1,600,000 for vanilla buying and curing
   - $75,000 bank overdraft facility

A fourth source of financing long term debt is presently being investigated. Consideration is being given to issuing bonds which would be about 3% cheaper than from long term bank financing.

FIMCO has always paid cash for all produce, fish and hand craft purchases. Thus FIMCO has not utilized credit from producers to finance expansion of the business.

THE MANAGEMENT

FIMCO has had the benefit of having technical assistance in the form of its Secretary/Manager or Financial Manager for its first 5 1/2 years. During this period sales grew from T$285,000 to T$3,269,000 per year. While the number of employees remained almost constant during this period, three new senior managers were hired, one with a university degree and two with two year diplomas. In addition the Tongan Secretary/Manager completed a two year Masters Degree program in the USA.

It is most interesting to note that as sales grew there was virtually no growth in employment. It increased from 23 persons at 31-12-86 to 28 persons at 31-7-91. Most of this growth was in senior management. Thus the growth at FIMCO was characterized by increased productivity rather than increased employment. Sales per employee increased from $35,000 in 1986 to $117,000 for the year ended 31-3-91.

GOVERNMENT'S ROLE

The Government of Tonga carries out its regulatory role of performing audits and in general seeing that the business is being conducted within the Cooperative Act and Rules. In the early years of operation, several instances occurred where the Registrar

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attempted to exercise a degree of control over FIMCO that was unacceptable if FIMCO was to operate as a part of the private enterprize sector. Each of these cases were appealed to a higher level and ultimately resolved in favor of FIMCO, however, the process was painful and pointed out the need for Governments to clearly recognize the private enterprize nature of the business.

Likewise for the cooperative to be successful it must remain outside of politics as FIMCO has always done.

Throughout the period of FIMCO's existance Government has maintained a very positive attitude toward private enterprize development which has created the necessary enviroment for FIMCO to prosper. However government is still greatly involved in providing alot of business services that might be expected to be provided by the private sector. To date none of these services or businesses have been privatized. Future development in agriculture and Fisheries would probably be greatly enhanced should Government decide to privatize such services as ice making and tractor ploughing etc.

THE OPERATIONS

The operations of FIMCO are much more dependent on well trained and managed people than on fixed assets, technical skills, or processing techniques.

Every activity that FIMCO is involved in could easily be undertaken by other persons without alot of equity. In fact many have entered and left the vanilla, fish, hand crafts and vegetable marketing businesses during the first 5 1/2 years of FIMCO's life.

Competition has thus been a key factor in keeping FIMCO successful as FIMCO had to struggle for producers loyalty offering better prices and services.

In its first years FIMCO was successful both in growth and profits while depending entirely on rented space and the hiring of transportation. However as it has matured the need for permanent access to vehicles and space has resulted in a few acquisitions. (two trucks and a vanilla curing shed) Leasehold land has also been acquired in both Tongatapu and Vava'u for future building of vanilla curing and vegetable packing buildings.

Detailed comments on each of FIMCO'S operations is as follows:

VANILLA

In virtually every instance in every year FIMCO has paid better returns (purchase price plus bonuses) to growers than was available from the competition. Competitors who paid higher prices have generally gone out of business. However several problems persist. These include:

1. The fact that it is extremely difficult to obtain higher prices for higher quality vanilla from the markets. The minimum level of acceptance by the markets has generally meant that virtually all Tonga vanilla has sold for the same price. This has tended to frustrate attempts to improve quality.

2. The fact that growers are very anxious to harvest vanilla as quickly as possible has led to the harvesting of immature vanilla. The motivations of the farmers are the need for the money, ease of harvesting, and to reduce the risk of theft. This results in the harvesting of alot of immature vanilla with resultant poor curing ratios, lower vanillin content and generally poorer appearance and aroma.

3. The competition between buyers of green vanilla has often resulted buyers accepting immature vanilla in order to retain producer loyalty.

4. Inventory control is extremely difficult as the vanilla beans are being individually handled over a six month period and each individual bean is worth about $.35.

5. The vanilla beans need alot of space to maximize the chances of producing excellent quality vanilla. When the harvest has been extremely heavy as in 1988 and 1990 FIMCO has encountered curing problems brought on by lack of space.

For the 1991 vanilla season FIMCO is making the following changes:

1. FIMCO purchased a 3 ton curing house in April.

2. FIMCO has been extremely strict on the purchase of green vanilla and has rejected immature vanilla. This has caused the amount of green vanilla purchased to decline by about 50% over 1990.

3. FIMCO is working with a customer in the USA to develop a brand name "Van-Tonga" for our vanilla and to have it identified as Tongan vanilla. Previously it was mostly mixed with and sold

as Bourbon vanilla. A considerable price improvement has also been negotiated for vanilla to be marketed as Van-Tonga.

HAND CRAFTS

Hand Craft sales rose quickly from $60,000 in 1985 to just under $300,000 in 1988 and have stayed at that level since then. This has coincided with a decline in the number of visitors during the same period. Probably the most important lesson that FIMCO has learned here is that quality sells. Given a choice of quality products for a higher price the customers will almost always opt. for the quality despite the higher price.

One of the biggest problems in hand crafts is quality control. It is even more difficult when the owners of the business are the producers. At times the needs of the business for quality exceed the ability or drive of the owner producers. Price levels and inventory stocking levels also produce conflicts. Therefore it has proven necessing to have some very strong quidelines for the hand craft buyer. Some of these are:

1. Never purchase more than you can sell in three months.

2. Never repurchase items which had to be marked down to sell then in the past.

3. Written records are kept on discussions with each producer which help to insure that product improvements are made.

4. FIMCO has a fixed mark up policy.

VEGETABLES

FIMCO entered the vegetable marketing business in July 1989 with the export of root crops. In August 1990 watermelons exports were began. In June 1991 other vegetables were added. Future expansion will probably include pineapples, eggplant and flowers. The difficulty of entering this business should not be underestimated as it requires a great amount of management and persistence to create a profitable business. This is especially true at the inception when it is extremely difficult for new persons entering the business to anticipate all of the potential problems. These include:

1. Price fluctuations in overseas markets

2. Difficulties is organizing adequate supplies

3. Proper quality control

4. Obtaining the necessary packaging at the right time and price.

5. High transportation costs, frequent schedule changes and odd hours of departure.

6. Production problems caused by disease, drought, shortages of inputs, producers switching exporters or not planting as contracted.

7. Refrigeration and fumigation problems.

In spite of all the potential problems FIMCO is now exporting:

Round yams
Long yams
Sweet yams
Swamp taro
Giant Taro
Taro futuna
Green pepers (capsicums)
Tomatoes
Zucchini
Green Beans
Cabbage
Watermelons

Lessons learned have allowed FIMCO to improve and expand the business each year. In particular it has become increasingly important to work closely with the farmer to insure that farm inputs are available, that planting is done as contracted and that quality requirement are well understood.

FISHING AND FARM SUPPLIES

FIMCO found that the commercial fishermen and farmers did not have the supplies that they needed. Alot of necessary items were not available at any price causing producers to find their own sources of supply from overseas or go without. For items that are available prices were often extremely high. A recent example was on Urea-46 which FIMCO imported, marked up 12 1/2% and sold for $18.00 per bag. Exactly the same fertilizer was selling in the main farm supply store in Nuku'alofa for $24 a bag which implies

a 50% mark up. This size of a mark up on this type of an item is only obtainable when there is insufficient competition.

The result of FIMCO's entry into the fishing supplies business at reasonable markups is that it has always been profitable and now has 80-90% of the fishing supplies business in the country. FIMCO has only entered the farm supplies business in 1991 as a response to the needs of its watermelon and vegetable growers. Prior to this it was not necessary (not appropriate) as no significant farm supplies are required for vanilla or root crops. A key ingredient in the success is that FIMCO has always searched hard for sources of supply for the business to insure that the products can be marketed at very competitive prices.

FISH

Fish marketing by FIMCO is done by buying fish from the Northern Island of Vava'u. The priority for sale of the fish is as follows:

1. Export quality fish are sent fresh to Nuku'alofa then by air to Hawaii (fishermen receive a premium price)

2. Fish that can be sold fresh in Vava'u are kept in Vava'u.

3. All other fish are sent fresh or ice to be sold in Nuku'alofa

Fish are no longer frozen, however octopus and lobster tails are frozen for local sale.

For years FIMCO routinely froze fish as they were purchased and lost money in the process. Only in 1991 has FIMCO adopted a fresh fish only policy which is now begining to produce profits. Also in the past FIMCO had great difficulty obtaining premium prices in Hawaii. This was primarily because in no more than two out of four weeks can FIMCO ship fish to Hawaii due to the constraints of weather and shipping. This was not satisfactory for the Hawaii customers. However FIMCO also had difficulty in meeting the highest quality requirements. These problems have now been solved by joining with an exporter from Tongatapu who can supply more regularity and insures that quality requirements are met. The result is a significant improvement in price for FIMCO's fish from Vava'u.

DEVELOPMENT ASSISTANCE

While some small amounts of assistance for marketing, training and

commodities have come from other sources, the bulk has come from USAID. Most of this has been technical assistance aimed at developing the management systems, operating procedures and training of employees needed to insure success. In part the technical assistance may also have been more effective due to the fact that the person was working in a line rather than as advisory position. Smaller amounts of funds were available for working capital training and capital equipment. The availability of these funds allowed the person providing the technical assistance to introduce new ideas such as, computers, faxes, better displays, ice boxes for fish storage, that were essential to make the business more competitive. This is consistent with the nature of the business in which success depends on organization and people rather than on capital equipment.

RUN DATE 08/09/91

FIMCO
General Ledger
INCOME STATEMENT
FOR PERIOD ENDED 03/31/91

.TIO: INCOME	THIS MONTH	THIS YEAR RATIO	THIS YEAR 12 MONTHS	THIS YEAR RATIO	BUDGET 12 MONTHS	LAST YEAR THIS MONTH	LAST YEAR 12 MONTHS
ICOME							
Sales	702,257.16	2060.8	3,269,194.05	521.4	0.00	136,851.07	1,881,324.54
Sales Discount & Cr. Card	10.71-	0.0-	2,813.63-	0.4-	0.00	107.64-	3,295.53-
Less Cost of Sales	668,170.13-	1960.8-	2,639,345.70-	420.9-	0.00	76,549.20-	1,519,377.84-
GROSS PROFIT	34,076.32	100.0	627,034.72	100.0	0.00	60,194.23	358,651.17
Other Income	1,755.34-	5.2-	20,263.63-	3.2-	0.00	3,899.61-	32,081.46-
TOTAL INCOME	35,831.66	105.2	647,298.35	103.2	0.00	64,093.84	390,732.63
XPENSES							
ERSONAL EXPENSES							
Wages & Commissions	9,431.48	27.7	112,397.87	17.9	0.00	9,062.63	95,097.02
Casual Labour	4,035.86	11.8	143,356.08	22.9	0.00	1,295.10	34,513.13
Leave Pay	0.00	0.0	387.06	0.1	0.00	252.53	5,124.48
Uniforms	0.00	0.0	75.50	0.0	0.00	6.00	12.60
ROPERTY EXPENSES							
Power & Water Supply	3,720.08	10.9	19,711.24	3.1	0.00	1,654.30	16,873.72
Rental Fees	2,480.55	7.3	36,319.30	5.8	0.00	2,086.99	31,258.65
Depreciation	10,759.78	31.6	37,530.55	6.0	0.00	9,853.10	12,354.62
Repairs & Maintenance	643.30	1.9	26,738.13	4.3	0.00	455.69	14,646.07
Insurance	5,219.53	15.3	20,439.76	3.3	0.00	6,872.26	13,187.36
Hylux L2336 Expenses	77.02	0.2	68.59-	0.0-	0.00	85.99-	206.00-
Dyna L2337 Expenses	120.47	0.4	2,121.98	0.3	0.00	102.37-	137.97
INANCIAL & MERCHANDISING							
Interest	20,692.08	60.7	119,041.44	19.0	0.00	9,743.71	42,399.27
Bank Charges	369.97	1.1	9,033.52	1.4	0.00	388.97	3,787.55
Exchange (Gain)/Loss	3,544.94	10.4	20,098.83	3.2	0.00	3,610.14	811.49
Cash (Over) or Short	7.16	0.0	619.25-	0.1-	0.00	4.23-	121.11-
Bad Debts	0.00	0.0	51.92	0.0	0.00	0.00	0.00
Advertising and Notices	621.00	1.8	6,235.98	1.0	0.00	186.40	4,985.15
Marketing Expenses	0.00	0.0	58.80	0.0	0.00	58.50	4,434.42
DMINISTRATION EXPENSES							
Printing & Supplies	446.10	1.3	8,741.68	1.4	0.00	637.10	9,184.54
License and Subscription	78.36	0.2	1,022.20	0.2	0.00	90.00	806.00
Postage	275.60	0.8	1,904.25	0.3	0.00	141.86	1,066.74
Telephone	836.49	2.5	9,292.83	1.5	0.00	466.10	6,683.97
Transport & Travel	1,006.36	3.0	14,353.40	2.3	0.00	417.62	10,517.51
Meeting	50.00	0.1	853.11	0.1	0.00	216.00	5,028.47
Audit & Legal	300.00	0.9	926.00	0.1	0.00	0.00	226.50
Sundry Expenses	212.00	0.6	3,101.35	0.5	0.00	315.96	3,317.75
Expenses Transf'd to WIP	0.00	0.0	19,497.38-	3.1-	0.00	0.00	113,445.85-
TOTAL OPERATING EXPENSES	64,928.13	190.5	573,607.56	91.5	0.00	47,638.37	222,682.02

RUN DATE 08/09/91

FIMCO
General Ledger
INCOME STATEMENT
FOR PERIOD ENDED 03/31/91

TIO: INCOME	THIS YEAR THIS MONTH	THIS YEAR RATIO	THIS YEAR 12 MONTHS	THIS YEAR RATIO	BUDGET 12 MONTHS	LAST YEAR THIS MONTH	LAST YEAR 12 MONTHS
NET INCOME BEFORE TAXES	29,096.47-	85.4-	71,690.79	11.8	0.00	16,455.47	168,050.61
NET PROFIT	29,096.47-	85.4-	71,690.79	11.8	0.00	16,455.47	168,050.61

DATE 08/09/91

FIMCO
General Ledger
BALANCE SHEET
AS OF 03/31/91

	** THIS MONTH THIS YEAR **			** THIS MONTH LAST YEAR **		
ASSETS						
ENT ASSETS						
Cash	10,462.08			17,336.35		
Sundry Debtors	969,751.37			100,912.40		
Provision for Doubt. Debt	0.00			2,435.37-		
Stocks	250,145.39			207,434.48		
Advances and Prepayments	24,613.82			13,646.06		
Total Current Assets		1,254,972.66			356,893.92	
D ASSETS						
Leasehold Improvements	52,554.29			1,484.29		
Motor Vehicles	35,752.58			35,752.58		
Accum. Dep. Motor Vehicle	13,284.93-			7,150.52-		
Furniture & Equipment	235,435.26			189,330.70		
Accum. Dep. Furn. & Equip	74,650.26-			56,776.93-		
Computer Equipment	32,834.78			25,256.84		
Accum. Dep. Computer Eqpt	26,879.89-			20,925.01-		
Total Fixed Assets		241,761.83			166,971.95	
R ASSETS						
Note Receivable	9,959.17			12,541.49		
Total Other Assets		9,959.17			12,541.49	
Total Assets			1,506,693.66			536,407.36
LIABILITIES & MEM. FUNDS						
ENT LIABILITIES						
Bank Overdraft	93,128.20			0.00		
Creditors	72,064.11			8,140.11		
Other Accounts Payable	593.94-			15,993.01		
Vanilla Buying Loan	737,386.49			0.00		
Total Current Liabilities		901,984.86			24,133.12	
TERM LIABILITIES						
Total Long Term Liability		0.00			0.00	
Total Liabilities			901,984.86			24,133.12

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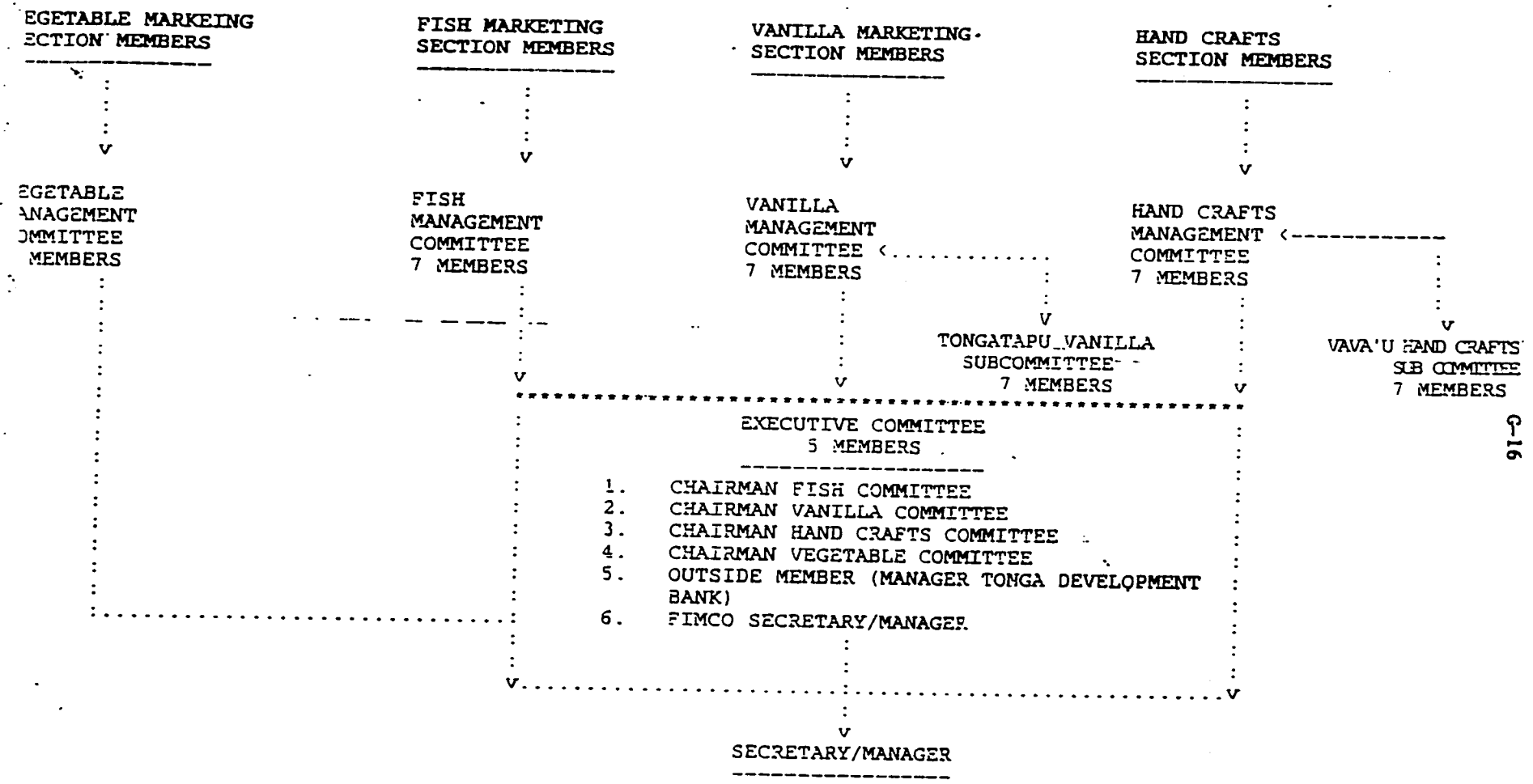
RUN DATE 08/09/91

FINCO
General Ledger
BALANCE SHEET
AS OF 03/31/91

	** THIS MONTH THIS YEAR **		** THIS MONTH LAST YEAR **	
MEM FUNDS				
Member Shares	8,145.00		5,855.00	
Capital Contribution	193,401.49		185,713.60	
Notes Payable TCF	93,241.78		93,241.78	
Statuatory Reserve Fund	3,556.44-		3,556.44-	
Retained Profit	239,786.18		231,020.30	
Current Year Profit	73,690.79		0.00	
Total Member Funds		604,708.80		512,274.24
Total Liab. & Member Fund		1,506,693.66		536,407.36

212

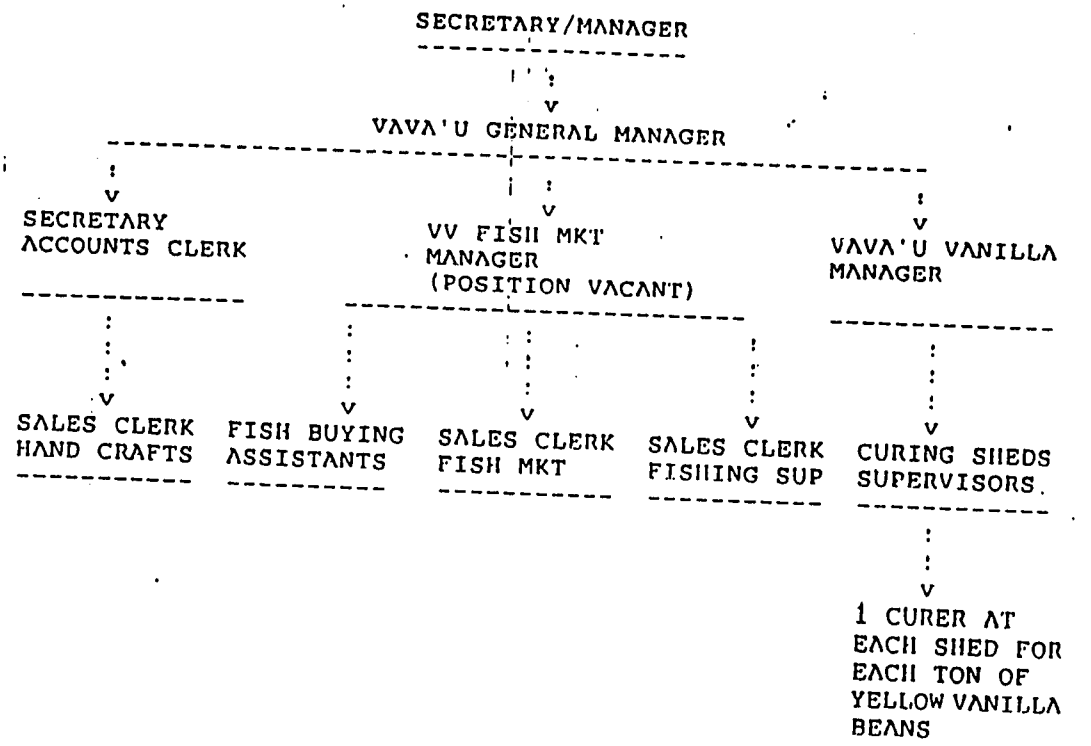
FIMCO ORGANIZATION CHART



232

Ref/A0418107.051

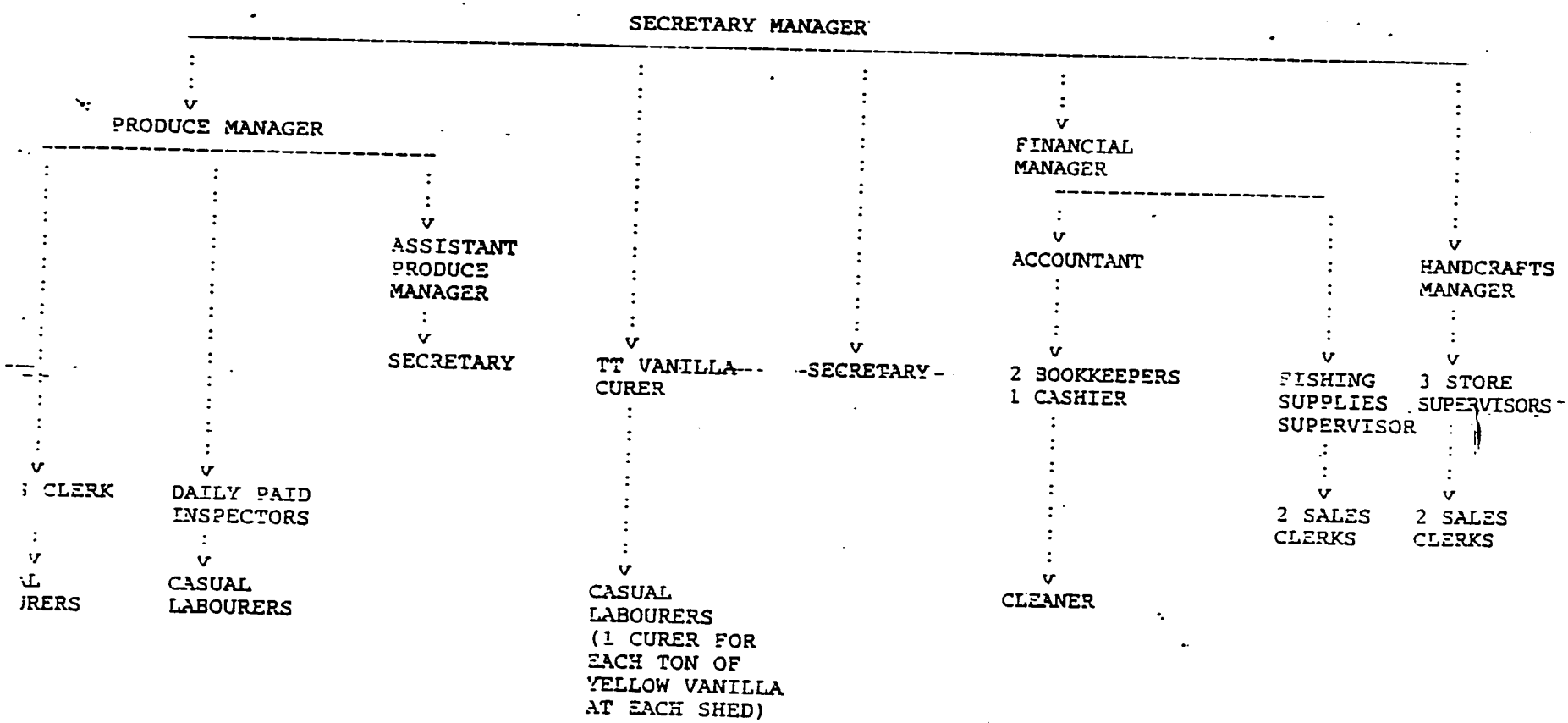
FIMCO ORGANIZATION CHART - VAVA'U



NOTE All vanilla positions are daily paid lasting 5-6 months each year.

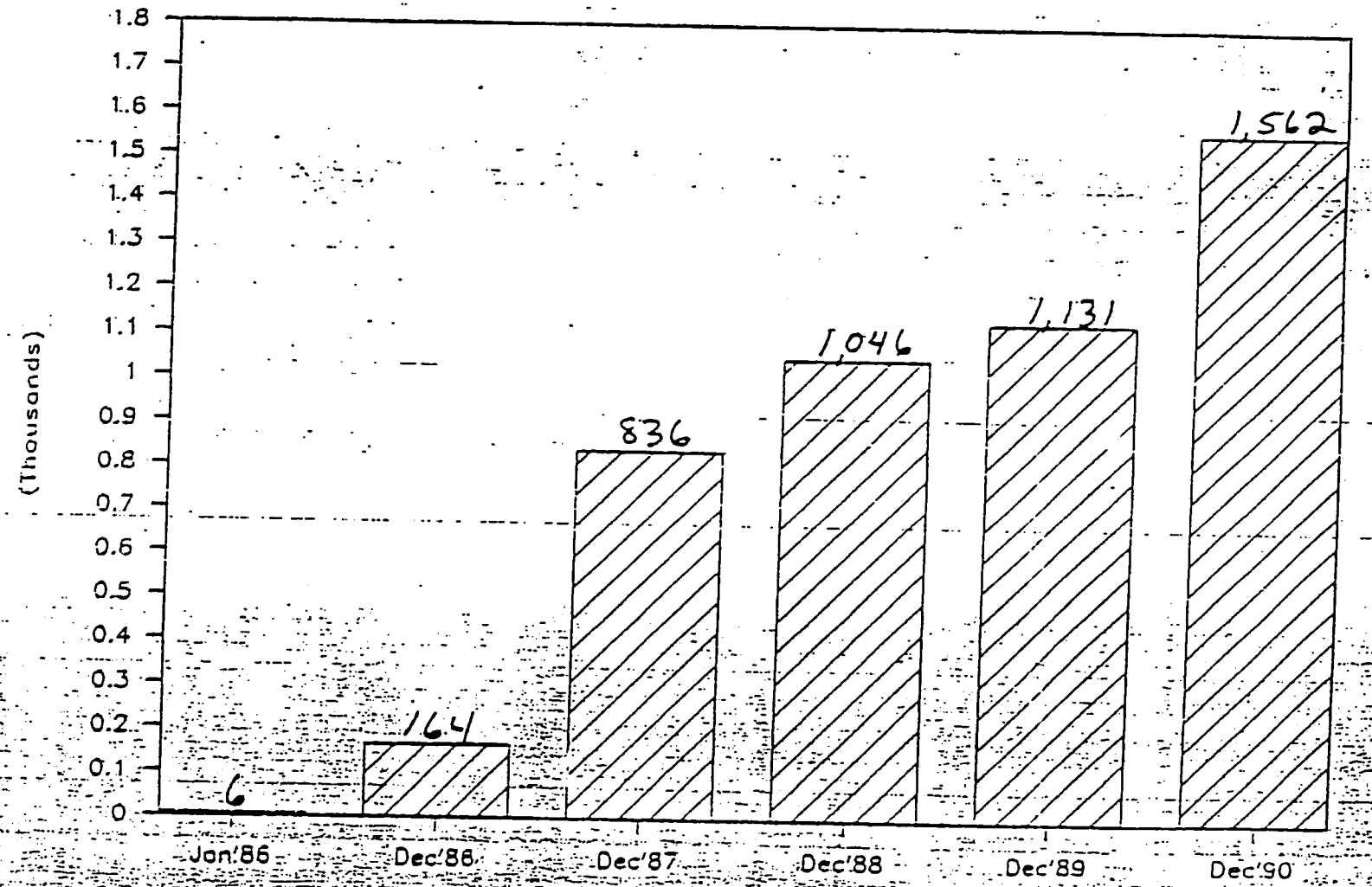
208.051

FIMCO ORGANIZATION CHART - NUKU'ALOFA 3 OF 3



20-

FIMCO MEMBERS



UN DATE 07/02/91

FINCO
General Ledger
BALANCE SHEET
AS OF 03/31/91

	** THIS MONTH THIS YEAR **			** THIS MONTH LAST YEAR **		
ASSETS						
RENT ASSETS						
Cash	10,462.08			17,336.35		
Sundry Debtors	969,751.37			100,912.40		
Provision for Doubt. Debt	0.00			2,435.37-		
Stocks	250,145.39			207,434.48		
Advances and Prepayments	24,613.82			33,646.06		
Total Current Assets		1,254,972.66				356,893.92
ED ASSETS						
Leasehold Improvements	52,554.29			1,484.29		
Motor Vehicles	35,752.58			35,752.58		
Accum. Dep. Motor Vehicle	13,284.93-			7,150.52-		
Furniture & Equipment	235,435.26			189,330.70		
Accum. Dep. Furn. & Equip	74,650.26-			56,776.93-		
Computer Equipment	32,834.78			25,256.84		
Accum. Dep. Computer Eqpt	26,879.89-			20,925.01-		
Total Fixed Assets		241,761.83				166,971.95
ER ASSETS						
Note Receivable	9,959.17			12,541.49		
Total Other Assets		9,959.17				12,541.49
Total Assets			1,506,693.66			536,407.36
LIABILITIES & MEM. FUNDS						
RRENT LIABILITIES						
Bank Overdraft	93,128.20			0.00		
Creditors	72,064.11			8,140.11		
Other Accounts Payable	593.94-			15,993.01		
Vanilla Buying Loan	737,386.49			0.00		
Total Current Liabilities		901,984.86				24,133.12
NG TERM LIABILITIES						
Total Long Term Liability		0.00				0.00
Total Liabilities			901,984.86			24,133.12

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FINCO
General Ledger
BALANCE SHEET
AS OF 03/31/91

	** THIS MONTH THIS YEAR **		** THIS MONTH LAST YEAR **	
FUNDS				
Member Shares	8,145.00		5,855.00	
Capital Contribution	153,401.49		185,713.60	
Notes Payable TCF	93,241.78		93,241.78	
Statuatory Reserve Fund	3,556.44-		3,556.44-	
Retained Profit	239,786.18		231,020.30	
Current Year Profit	73,690.79		0.00	
Total Member Funds		604,708.80		512,274.24
Total Liab. & Member Fund		1,506,693.66		536,407.36

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E 07/02/91

FINCO
General Ledger
INCOME STATEMENT
FOR PERIOD ENDED 03/31/91

COME	THIS YEAR THIS MONTH	RATIO	12 MONTHS	RATIO	BUDGET 12 MONTHS	LAST YEAR THIS MONTH	12 MONTHS
ales	702,257.16	2060.8	1,269,194.05	521.4	0.00	136,851.07	1,881,124.54
ales Discount & Cr. Card	10.71-	0.0-	2,813.63-	0.4-	0.00	107.64-	3,295.53-
ess Cost of Sales	668,170.13-	1960.8-	2,639,345.70-	420.9-	0.00	76,549.20-	1,519,377.84-
ROSS PROFIT	34,076.32	100.0	627,034.72	100.0	0.00	60,194.23	358,651.17
ther Income	1,755.34-	5.2-	20,263.61-	3.2-	0.00	3,899.61-	32,081.46-
OTAL INCOME	35,831.66	105.2	647,298.35	103.2	0.00	64,093.84	390,732.63
EXPENSES							
ages & Commissions	9,431.48	27.7	112,397.87	17.9	0.00	9,062.63	95,097.02
asual Labour	4,035.86	11.8	143,356.08	22.9	0.00	1,295.10	34,513.13
eave Pay	0.00	0.0	387.06	0.1	0.00	252.53	5,124.48
niforms	0.00	0.0	75.50	0.0	0.00	6.00	12.60
EXPENSES							
ower & Water Supply	3,720.08	10.9	19,711.24	3.1	0.00	1,654.30	16,873.72
ental Fees	2,480.55	7.3	36,319.30	5.8	0.00	2,086.99	31,258.65
epreciation	10,759.78	31.6	37,530.55	6.0	0.00	9,853.10	32,354.62
epairs & Maintenance	643.30	1.9	26,738.13	4.3	0.00	455.69	14,646.07
nsurance	5,219.53	15.3	20,439.76	3.3	0.00	6,872.26	13,187.36
ylux L2336 Expenses	77.02	0.2	68.59-	0.0-	0.00	85.99-	206.00-
yna L2337 Expenses	120.47	0.4	2,121.98	0.3	0.00	102.37-	137.97
& MERCHANDISING							
Interest	20,692.08	60.7	119,041.44	19.0	0.00	9,743.71	42,399.27
Bank Charges	369.97	1.1	9,033.52	1.4	0.00	388.97	3,787.55
Exchange (Gain)/Loss	3,544.94	10.4	20,098.83	3.2	0.00	1,610.14	811.49
Cash (Over) or Short	7.16	0.0	619.25-	0.1-	0.00	4.23-	121.11-
Bad Debts	0.00	0.0	51.92	0.0	0.00	0.00	0.00
Advertising and Notices	621.00	1.8	6,235.98	1.0	0.00	186.40	4,985.15
Marketing Expenses	0.00	0.0	58.80	0.0	0.00	58.50	4,434.42
TRATION EXPENSES							
Printing & Supplies	446.10	1.3	8,741.68	1.4	0.00	637.10	9,184.54
License and Subscription	78.36	0.2	1,022.20	0.2	0.00	90.00	806.00
Postage	275.60	0.8	1,904.25	0.3	0.00	141.86	1,066.74
Telephone	836.49	2.5	9,292.83	1.5	0.00	466.10	6,683.97
Transport & Travel	1,006.36	3.0	14,353.40	2.3	0.00	417.62	10,517.51
Meeting	50.00	0.1	853.11	0.1	0.00	236.00	5,028.47
Audit & Legal	300.00	0.9	926.00	0.1	0.00	0.00	226.50
Sundry Expenses	212.00	0.6	3,101.35	0.5	0.00	315.96	3,317.75
Expenses Transf'd to WIP	0.00	0.0	19,497.38-	3.1-	0.00	0.00	113,445.85-
TOTAL OPERATING EXPENSES	64,928.13	190.5	573,607.56	91.5	0.00	47,638.37	222,682.02

ATE 07/02/91

FINCO
General Ledger
INCOME STATEMENT
FOR PERIOD ENDED 03/31/91

INCOME	THIS YEAR THIS MONTH	THIS YEAR RATIO	THIS YEAR 12 MONTHS	THIS YEAR RATIO	BUDGET 12 MONTHS	LAST YEAR THIS MONTH	LAST YEAR 12 MONTHS
NET INCOME BEFORE TAXES	29,096.47-	85.4-	73,690.79	11.8	0.00	16,455.47	168,050.61
NET PROFIT	29,096.47-	85.4-	73,690.79	11.8	0.00	16,455.47	168,050.61

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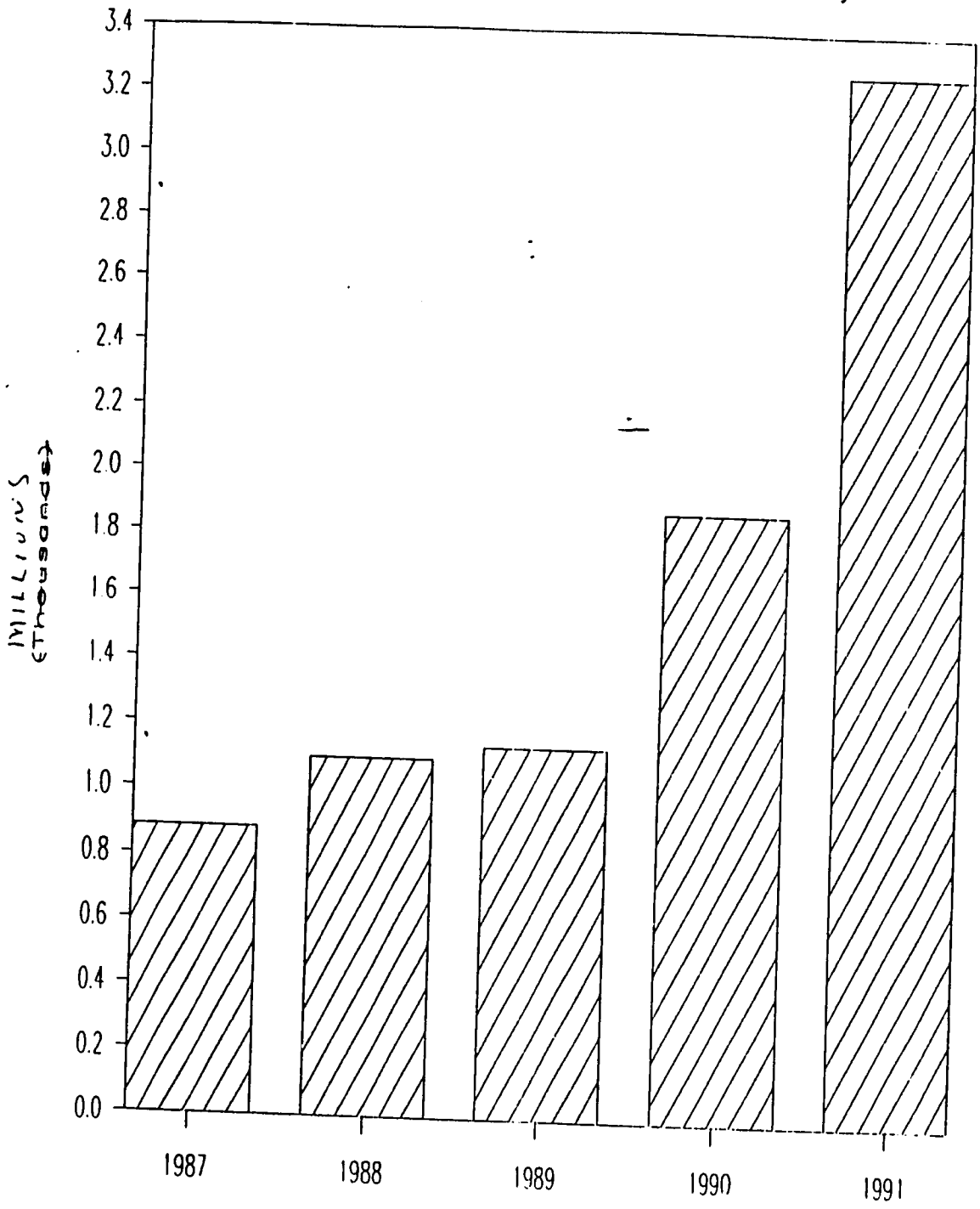
TOTAL SALES

YEARS ENDING 31 MARCH



$864,000 $1,098,000 $1,139,000 $1,881,000 $3,269,000

ANNEX H

TECHNICAL ANALYSIS

The development of export agriculture in the South Pacific was based historically on the establishment of plantations, owned by foreign companies or single families which maintained strict control over labor. For the most part, these systems were monocrop, low value commodities, produced in bulk and exported by sea. Traditional societies raised small plots of basic foodstuff, such as taro, yams, fruits, for their own consumption and become increasingly involved in semi-commercial operations.

Since the Pacific Island Nations have gained independence, these agricultural production systems have changed radically. Plantations, have returned the traditional landowners who sometimes converted these to small holder operations. The policy environment has also changed to favor the business sector and national development plans support diversification into high value crops for export. However, management expertise needed for quality control, competitiveness has not kept pace, and South Pacific exports are at risk both from a quality and consistency of supply point of view.

I. The Development of Agribusinesses.

Identification of priorities

The project design team met with industry and exporting companies in six of the RDO's ten countries in the development of the PP. Everywhere, industry representatives identified the following areas as needing improvement if the Pacific Islands were to reach their export potential:

Establishment of quality control and quarantine regulations

Management advice and assistance

Training in the establishment of control standards (quarantine and quality)

Changes in production practices which influence competitiveness the introduction of new commercial processing technologies

Performance of commercially relevant research

Networking marketing and research information

CAD will cover most of these industry-identified problems through the provision of technical assistance, training, and commodities however for technical assistance to be effective in the identified areas and in a regional context, the assistance rendered must be replicable and must reach the largest number of participants possible. Governments must be supportive of changes in quality control and quarantine practices and must be prepared to assume the legitimate role of government in the creation of agribusinesses (ie, regulatory and enforcement). This limits the possibilities of project interventions to:

- Assistance in the privatization of government owned monopolies and marketing activities. Parastatals have proven to be particularly inept at handling fresh produce, furthermore none of these programs have been enduring because of the fundamental weaknesses in parastatals which relate to their primarily political structure and the monopoly situation they create.

- Assistance to individually-owned businesses-a number of these exist and are profitable and will receive export marketing advice under CAD. However, because of the replicability concern, the thrust of the project has been aimed at grower owned and controlled associations- These groups are in various stages of development in the South Pacific at present. Some are recently established and exist for marketing purposes only, others are coops which have been established to secure both inputs and marketing assistance.

- Cooperatives and grower-owned associations :

Over the past six years, AID has been assisting the Friendly Island Marketing Cooperative (FIMCO) in Tonga to become a self sustaining, producer owned and managed business. Our assistance has been primarily in the form of Technical Assistance and training to achieve profitability. Over the six years of implementation FIMCO has grown from a $300,000 to a 3,000,000 dollar business. The majority of exports have been vanilla beans, root crops, capsicums, fresh produce and fish. In every case, the emphasis has been on achieving quality control and continuity of supply to gain higher prices.The very successful transformation of FIMCO to multi-million dollar business has been the basis of our design of interventions under CAD. However, FIMCO has received more technical assistance than will be possible under CAD, therefore, we will be working with industries and associations and cooperatives in more advanced states of development than FIMCO some examples are:

<u>Fiji: The processed ginger industry</u>: Immature ginger is processed and exported by the Tropical Food Products (TFP's) which is 100% owned by National Marketing Authority (NMA). The GOF is interested

in privatizing the processing plant and making it a producer-owned establishment. The ginger processing operations of the NMA were profitable in 1989. In 1990 the processing operations suffered a loss of $62,000. However, in 1990 there were substantial increases in costs in certain areas that can be reduced in the future.

Any privatization and restructuring of the business would have to be accomplished in a way that would reduce some of these costs, so as to create the conditions for sustained profitability in the future.

In addition Tropical Food Products (TFP) is the owner of the Batiri Citrus Orchard which has had sustained losses. Batiri is primarily an orange plantation on the island of Vanua Levu and as such is irrelevant to the operations of the young ginger industry located on Viti Levu. Batiri should either be retained by NMA or quickly disposed of by TFP. In a privatization effort TFP would become significantly more profitable than it is at present; the new (growers) owners would ultimately benefit. In addition there is a significant undersupply of young ginger products on the world market and thus significant potential exists to increase both production and processing.

While the present product from TFP is of acceptable quality there is room for improvement. In particular, improvement in field practices and in the post harvest handling before the ginger reaches the factory could greatly increase the returns to producers, by both increasing production and lowering the rejection percentage. The factory would also achieve substantial savings if the percentage of waste could be reduced as a result of better field practices producing larger sized young ginger.
CAD has targeted this industry for assistance if privatization progresses.

<u>In Fiji with the fresh ginger exporting industry</u>. Fresh ginger in Fiji is grown for the North American West coast market at a time when no ginger is available from Hawaii. There is thus no competition with the U.S. ginger industry. In fact the two industries are complimentary, with Hawaii's largest grower exporter being the biggest importer of Fiji ginger.

The fresh ginger industry in Fiji is producing ginger of minimum acceptable quality for the North American market. The price received is among the lowest and Fiji ginger has recently been losing market share to Indonesia and Brazil.

The Fiji Fresh Ginger Exporters Association (FFGA) has been working to improve the quality and thereby the price for Fiji's fresh ginger. These steps have included the establishment of minimum grading standards and prices for export ginger. They have

also established a self assessment program to fund a field extension advisor who works with the growers. Exporters have also been the primary financiers of the fresh ginger growers, as the banks have been unwilling to fund fresh ginger growers due to the lack of collateral and the high risk of failure.

The FFGA intends to improve the industry by taking the following steps: (some of these would be conditions of CAD working with the association)

a. Bringing in the growers as equity owners of the export businesses;

b. Increasing the self assessment to provide for funding of a second field extension officer;

c. Establishment of export grades for fresh ginger;

d. Consideration of exporting Fiji's ginger under a single label; and

e. Working more closely with the banks so as to access additional funding allowing the industry to expand and to shift part of the burden of financing from the exporters to the banks.

The long term T/A advisors under CAD will assist in the development of a much stronger industry wide association with the aims of improving both quality (thus price) and production. The assistance will also include short term T/A utilizing a Hawaiian ginger farmer to supplement the extension efforts of the association. Trials to develop environmentally sustainable production methods will also be supported. Should the association agree to adopt and enforce a significantly better grading and pricing system support for, through the prime contractor, CAD will provide initial funding a manager to lead the association in its transition from a voluntary association to a commercial business. This person will provide the direct link between the long term CAD team and the association in the development of the business.

Other examples of emerging associations exist in the South Pacific and they are in varying states of development. Some such as the Fiji Fresh Produce Exporters' Association are loosely formed and exist primarily to give the industry a voice in dealing with such problems as quarantine restrictions and freight problems. The common denominator in assistance is that the organization be producer-owned, this is the key for replicability and this will be the focus of CAD.

II. Product Competitiveness:

Resolution of Quarantine Issues

The isolation of the Pacific Islands has meant that they previously had few natural pests to content with. However intra-island trading, and the advent of the colonial era followed by the development of the tourist industry have caused a rapid spread of pests from island to island so that now lucrative markets are closed to south pacific produce because of quarantine restriction. Of special concern in the CAD project are the many species of fruit flies which have been identified in the Pacific Islands, these fruit flies are now being controlled by a quarantine regimen which includes the use of fumigants no longer tolerated in most of the target markets.

The Pacific Islands must be brought into the mainstream of quarantine treatment methods if they are to continue to export high value crops such as papaya, fresh vegetables, etc.

The research and development of quarantine treatments requires the following general procedures and information:

1. Determine which fruit fly species are present in the area where crops (e.g.; fruit) are harvested for export, the fruit fly distribution, host range and quarantine importance to importing countries (includes preliminary contacts with the regulatory agencies of importing countries).

2. Determine the host status of the fruit for fruit fly infestation and host/pest relationships for fruit that are hosts.

3. Develop techniques for mass-rearing fruit flies of quarantine importance in the laboratory for experiments (includes fruit fly biology and life cycle information).

4. Select candidate quarantine treatment technologies, (e.g., heat or cold treatments) that the fruit will tolerate. Quarantine treatment technologies, primarily laboratory equipment and research methods necessary for basic studies, are transferred at this point.

5. Perform tolerance/quality tests of treatments against fruit in the laboratory.

6. Develop thermal mortality data for fruit fly eggs and larvae.

7. Develop treatment efficacy data that is acceptable to the regulatory agencies of importing countries (includes approved quarantine treatment security statistics). Commercial treatment technology and equipment is transferred to coincide with the completion of efficacy data and the initiation of confirmatory testing.

8. Perform confirmatory tests as required by the regulatory agencies of importing countries.

9. Submit data to the regulatory agencies of importing countries for approval. All research data may require review by the regulatory agencies of importing countries, and regulatory personnel may directly observe experimental procedures, particularly during confirmatory tests.

The post-fumigation-era quarantine treatment technologies available today use head and/or cold treatment in the form of hot-water immersion, vapor heat, high-temperature forced-air, and refrigeration. These treatments increase or decrease the temperature of the host beyond the thermal limits of the target quarantine pest. Pesticide use, especially for postharvest use on fruit and vegetables, has declined in the developed nations over the past decade. It should be noted that none of the quarantine treatment technologies available for transfer to the Pacific Island Countries use toxic compounds. In fact, both hot-water immersion and high-temperature forced-air treatments were developed as alternatives to fumigation for tropical fruits, such as litchi, mango, and papaya.

Australia, Japan, New Zealand, the U.S., and other countries have private, state and/or federal research agencies that supply scientific data from the research and development of quarantine treatments to the regulatory agencies. In these countries, the needs of the commercial sector and regulatory agencies directly influence research activities. Grower/exporter groups usually represent the commercial sector. The existence of and close working relationship between regulatory and research agencies and commercial sector groups facilitates the timely development of quarantine treatments in developed countries.

Under CAD, the participating countries will receive assistance by the staff who developed Hawaii's quarantine regimen and training in certification, operation and maintenance of equipment, development and enforcement of acceptable treatments. In order to speed up the development of HTFA treatments, the project will purchase prototypes for research and development of protocols and for industry to serve as a model for other countries in the region.

IIA Product Competitiveness:

Quality Control Standards. A Hallmark of product competitiveness, especially with high value products is quality control. The economic analysis contains although rending of the economic returns to be reaped from small increases in quality followed by careful grading for export. Quality standards are set by importing countries and must be maintained if markets are to be assured. Rejection of produce by importers is a costly mistake for the exporting business and is a continuous problem of South Pacific exporters.

Quality standards which relate to health and nutrition are generally established by the exporting government, but standards which relate to consumer appeal (appearance, size, packaging, color etc) are governed by the standards of the importer and must be regulated by exporting industries. Industries need to establish the standards, publicize them for producers and enforce them at the point of purchase.

CAD has an important role to play in this regard. Working with Agribusinesses to

A) find out the specifications of importing countries;

b) assist in the development of grading manuals (USP);

c) advise associations on technical packages and (pre and post harvest) which contribute to the quality of the final product.

III. The Sustainability of High Value Crops

The crops which show the most potential for the CAD project are listed in table 1. With only a few exceptions (coffee, ginger) they require very little inputs in terms of fertilizer or pesticides. Vanilla, for example, is a member of the orchid family and requires no chemical inputs. However, ginger is to be a main emphasis in the project and other crops should be using more sustainable production practices in order to ensure product sustainability, the hallmark of competitiveness. Hence an environmental report which discusses current production practices and recommends more environmentally design practices where applicable was commissioned (Annex K). The reports' recommendations have been included in the body of the paper.

Most of the niche crops are grown by small holders with limited access to chemicals and many would qualify for "Organic" Certification in the US and other markets. The project will explore the possibility of obtaining certification and, hence, premium prices for these products during implementation.

IV. Empowerment of Industry to influence the Commercial Research Agenda:

Agricultural research in the South Pacific is conducted on a national basis (generally the ministries of agriculture or Primary Industries) and on a regional basis. (By the University of the South Pacific.

The agricultural campus of USP at Alafua services twelve independent nations in the South Pacific. The Institute for Research, Extension and Training for Agriculture (IRETA) has been assisted under the SPRAD project for almost 10 years. Under a subcontract with the University of Hawaii and Cornell University, the IRETA center was established and staff were trained and facilities were constructed. The institute has received contributions from many other donors over the course of the project and USAID assistance now constitutes only a little over one-third of the operating budget. The original goal of the SPRAD project was to increase food production so that the member countries could reach self sufficiency in food crops. IRETA has been involved in basic food crop research and has built up an impressive inventory of publications and information. It has not, however been well linked to commercial producers or exporters, nor has the Institute's research agenda been influenced by in determining their workplan or research agenda.

Despite these rather weak links to the export sector, IRETA is a unique center in the region, it represents the only source for dissemination of marketing and quality control information in nine of the ten countries served by the RDO/SP and is one of the main information centers geared to supplying agricultural information among the South Pacific nations. In addition the training and research facilities developed under SPRAD are unique in the region.

<u>Establishing USP- Commercial Agricultural Links</u>. USP staff have drawn up a proposal for CAD funding which would align IRETA MORE closely to the commercial agricultural sector. While the details of the proposal need yet to be worked out, it represents a radical departure from USAID's past assistance to USP. All activities will be product oriented and funded on the basis of their response to CAD objectives and research topics will be identified by industry associations.

A cooperative agreement will be negotiated with USP to fund the following tasks:

- producing three export quality manuals for root crop, fresh fruits and vegetables, and spices;

- changing the ALO network to establish information links to the commercial sector;

- conducting a series of workshops on quality control for export and other topics as identified by industry;

- the producing three training videos on topics to be determined by the project coordination committee;

- conducting export research grants on topics of importance to commercial agriculture as approved by the project coordinating committee.

- supporting the Agricultural Information Network (AIN) to improve the solicitation of commercial agricultural enquiries, the researching of the responses and the dissemination of information to participating nations.

- coordination of CAD with the SPC biological control project will also be done by the project coordinator and reported in the contractor's quarterly reports.

ANNEX I

ECONOMIC ANALYSIS

The purpose of CAD is to increase the value of agricultural exports by the private sector. This will be achieved mainly by inputs directed at enhancing the marketability of produce by improving quality and continuity of supply.

Improving product quality: the economic rationale

There is ample evidence that whenever an agricultural industry establishes and enforces quality control and grading standards, the industry (including growers) benefit. Within the Pacific islands this is exemplified by the PNG cocoa industry where superior quality has consistently brought growers significantly higher prices than their counterparts elsewhere in region. For horticultural export industries, Hawaiian papayas and New Zealand apples provide excellent examples of benefits from industries enforcing high quality standards.

The Pacific islands region generally has a poor quality image to overcome in the market place for most of its agricultural products, particularly fresh produce exports. A report commissioned by the Pacific Islands Development Program (PIDP), describes the reputation of Fiji papaya in the Australian market:

> The complaints of Australian wholesalers concerning the variable presentation and packing standards told to and seen by the author in 1987, 1988, and again in 1989 were virtually the same: i.e., poor packing, underweight cartons, and the inclusion of both over and under-ripe fruit, which had it been harvested prematurely would have never ripened. Yet Fiji papaya that did meet the standards, were readily acceptable and received premium prices (Eaton 1990).

The situation described for papaya is not atypical for fresh produce from the island. One of the largest importers of Fiji ginger in the United States recently commented:

> "Quality wise you have a long way to go. In general, Fiji's quality has not improved over the years. The general opinion is that Fiji

> has no grading standards. All Fiji ginger is considered "field"-run (i.e. everything into the box irrespective of size)". (In response to a questionnaire sent by the AID's Commercial Agricultural Development Advisor in January 1990 to Fiji's North American ginger importers).

The lack of quality control has made it difficult to market produce from the region and to obtain attractive prices, with most prices gravitating to the lowest common denominator in terms of quality.

Improving the quality of high value exports can lead to substantial economic benefits relative to the cost incurred - particularly in the case of an existing industry. The reasons for this are as follows:

- there are significant price premiums for quality;
- there is considerable scope for improving the quality of Pacific island produce exports;
- the high cost of freight and handling have to be met regardless of the quality of the produce. Thus any price improvement represents a net foreign exchange gain that is passed on to the exporting industry;
- less resources are usually required to increase the quality of production than the volume of production, although there will be some time lag in achieving better quality particularly if improved field practices are required; and
- revenue increases can be achieved within existing freight capacity;

Estimates of returns to quality improvements are included in the discussion of Fiji ginger.

Airfreight capacity for horticultural exports

Sizeable markets have been identified for horticultural exports from the Pacific islands to Pacific rim countries. Producing exports of sufficient quality to capture these markets is a major focus of CAD. However, there must also be adequate and reliable air cargo capacity available if significant horticultural industries are to be established. For perishable horticultural and marine products the existing air cargo capacity is currently

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insufficient to allow the development of large industries. Fiji, with 36 outward wide-body flights per week to Pacific Rim markets, is by far the best placed. Of these flights, 16 Air Pacific flights and two Air New Zealand flights originate in Fiji and thereby offer backloading capability. Fiji currently has around 300 tonnes of outward capacity available weekly of which about one third on average is being utilized. Vanuatu is next best served, with five flights per week to Australia and New Zealand markets, all with backloading opportunities for produce. The higher outward freight rates of produce from Fiji compared with Hawaii indicates that the Pacific islands have not been able to bargain freight rates that reflect backloading opportunities [1]. The outward capacity to U.S. markets from Western Samoa and Tonga needs to be substantially discounted due to the unreliability of the service provided.

While air cargo is a major constraint, sufficient capacity already exists for the development of a significant fresh produce industry in the context of a small island economy, as evidenced by the development of the Cook Islands papaya and Fiji fresh fish and early season ginger exports. The prospects for expanding tourism, particularly for Fiji and Vanuatu, suggest that air cargo capacity will be increasing over time, creating horticultural export opportunities similar to that provided by tourism from Hawaii.

Coordination problems sometimes mean that full use often is not made of available capacity. Part of the case for Air Pacific establishing a service to Japan was to provide an outlet for fresh produce to this highly remunerative market. Yet with the exception of fresh fish the company has been very disappointed with the cargo response to the service, which was established in 1988. However, a lag in supplier response to available cargo space is inevitable--a problem exists with orchestrating the two. It is encouraging to note this service has provided confidence for significant Hawaiian investment in cut flower development, with the first exports to Japan having recently commenced.

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1. The rate for Fiji cut flowers to Japan is $1.20/lb which is approximately three times the rate from Honolulu to Japan.

Estimation of Project Benefits

The direct project benefits are the increase in export revenue from target agricultural products. For some project interventions, as with Fiji and fresh produce, it will be relatively easy to separate the "with project" from the "without project" situation. For more minor intervention it will be more difficult to accurately attribute the impact of the project to change in export revenue. An example would be the impact of the development of a taro washer on the value of Western Samoan taro exports. An illustrative list, on a product basis, of indicative economic benefits that could be expected from the project is presented below.

Fiji

Fresh Ginger

The main market for Fiji ginger is North America. The Hawaiian industry (off-season to Fiji) sets the market standard in terms of quality. On account of its superior quality Hawaiian ginger receives a price 15% to 20% higher than Fiji. This represents a $5 to $9 differential per 30lb case on the Los Angeles wholesale market. As a result of quality improvements arising from the project it is projected that the difference in the price differential can be halved. This will take three to four years to achieve since quality improvement requires changing field practices and the introduction and acceptance of grading standards. Halving the price differential would represent a price increase of about $0.4 million in wholesale value of Fiji ginger based on current exports of around 1,600 tonnes (or 120,000 cases). Virtually all of this increase represents a net gain to the Fiji economy and industry since all shipping, packing, and packaging costs have already been met. It is estimated that halving of the price differential between the Hawaii and Fiji prices would increase the FOB revenue of the Fiji industry by approximately 25% with no increase in the volume of sales. The volume of sales, however, is also likely to increase as a result of the project because the rate of post-harvest rejects should be reduced (currently around 40%). Thus it is reasonable to expect that by the end of the project Fiji will be exporting 2,000 tones of improved quality ginger to North America, which would increase the FOB revenue of the industry by another $0.3 million (at an FOB price of $1,000/tonne). The projected 10 year revenue stream increase attributed to the project is estimated in Table 1.

Processed Ginger

Opportunities have been identified to substantially increase the export revenue earnings from this long-standing industry. The

main market is the EEC where there is scope for considerable expansion. There are market opportunities in the U.S. However the achievement of this expansion will require consistently higher quality, capital investment in processing, and product promotion. In addition scope for cost savings has also been identified. A necessary condition for these improvements is the privatization of processing and marketing, and CAD expects to be directly involved in this process. A $1 million increase in the net revenue accruing to the industry is seen as an achievable target over five years, of which approximately 50% might be attributed to the interventions of CAD.

Table 1: Ginger Exports: Forecast Revenue Increase

Year	1	2	3	4	5	6	7	8	9	10
				(FOB revenue increase US$million)						
Fresh Ginger	-	-	.2	.7	.8	.8	.8	.8	.8	.8
Processed Ginger	-	-	.1	.3	.3	.4	.5	.5	.5	.5
Total	-	-	.3	1.0	1.1	1.2	1.3	1.3	1.3	1.3

Fresh Produce

Outstanding market prospects have been identified for fresh fruit and vegetables, particularly in Australia. This development has been constrained by two key factors; antiquated post-harvest facilities operated by government and lack of industry-enforced quality standards. These constraints will be addressed directly by CAD. Furthermore the deregistration of the chemical fumigant EDB means future export of products such as papaya will depend on the successful implementation of CAD.

The benefits from these interventions will start to be realized in year four when a commercial high temperature forced air treatment facility will be operating. Indicative forecasts of the increased value of Fiji's fresh produce exports over the next 10 years arising from the project are presented in Table 2. The "without" project situation assumes there would be no exports after year four as quarantine restriction will close down the market completely. These estimates, which are regarded as

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conservative, are based on various studies of market potential and Fiji's horticultural production capability[1]. The projections assume some modest increase in outward freight capacity above present levels after year six. Approximately 50% of the increase in produce exports is attributed to CAD, with the balance assigned to the collaborating SPC/FAO Regional Fruit Fly Project (See Annex F). The success of both projects is seen as a necessary condition for expanding the value of Fiji's fresh produce exports.

Table 2: Fresh Produce Export: Forecast Revenue Increase

Year	1	2	3	4	5	6	7	8	9	10
FOB revenue Increase (US$million)	-	.1	.3	.5	2	3	4	5	5	5

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1. Asian Development Bank Fiji Agricultural Sector Study Volume III (Commodity Profiles), Manila 1985.

   Atkinson, Gath Exporting Fruit and Vegetables to New Zealand: A Guide to Pacific Trade Office, Auckalnd 1991.

   Hardin and Associations The Australian Market for Fruit and Vegetables from Pacific Island Countries. Report prepared for the Forum Secretariat Seminar on Exporting Fresh Produce to Australia, Suva, 1990.

Cocoa

The development of the Fiji cocoa industry has been constrained by an inefficient government marketing monopoly and poor standards of dry bean processing. CAD expects to be directly involved in the privatization of the industry, and the establishment of quality standards and the means for their enforcement. As a result of these interventions the quality of Fiji cocoa is expected to increase along with the efficiency of the marketing. As a consequence the unsubsidized returns to growers will be greater than would have otherwise been the case.

For a commodity, the absolute price of which is determined by world market conditions, it is difficult to quantify the expected revenue gains to growers. However it is noted that at present Fiji cocoa receives approximately a 10% quality discount. In contrast New Guinea Island Produce (NGIP) Ltd, whose expertise will be drawn on by the project, currently receives a quality premium of $40/tonne above the PNG average price which is in turn well above the Fiji price. The objective of CAD will be to remove Fiji's quality discount. The successful achievement of this modest goal, at current price and production levels, would result in an $80,000 increase in revenue. Virtually all this increase would accrue to the industry since all shipping and handling costs have already been met. In addition to revenue increases, cost savings are expected to arise from a more efficient marketing system. With increased incentives and returns to growers a significant increase in exports could be expected over the project period, even from existing plantings. The world market prices are expected to increase significantly over the next five years creating a positive environment for cocoa industry reform. A $200,000 net revenue increase by the end of the project is taken as a working assumption of the benefits that could be attributed to the project. The projected 10 year revenue increase stream attributed to the project is shown in Table 3.

Table 3: Cocoa Exports: Forecast Revenue Increases

Year	1	2	3	4	5	6	7	8	9	10
FOB revenue increases (US$ million)	-	-	.1	.1	.2	.3	.4	.5	.6.	.7

Papua New Guinea

Management Training Capability: The initial emphasis of CAD activities in Papua New Guinea will be to develop regional management training capability utilizing a successful Papua New Guinea management company, NGIP Ltd.

Papua New Guinea's commercial agricultural businesses will be the direct beneficiary of this program through enhanced quality of produce, improved marketing and increased efficiency of operations. It is difficult, however, to quantify these improvements in terms of increased export earnings.

NGIP's management training is expected to be an ongoing program beyond the initial assistance from CAD. Thus the East New Britain Province (ENBP) will be "exporting" expertise to the region which will generate foreign exchange. A successful ongoing training program might generate between $50,000 to $100,000 per annum in foreign exchange in terms of participant fees and consultancy payments.

Apart from management training, CAD will be utilizing NGIP as a producer-owned business to stimulate agricultural development and diversification in ENBP. A.I.D. has already stimulated serious interest in the development of a UHT coconut cream project, the successful implementation of which would generate several million dollars of increased revenue to the coconut farmers. CAD may also provide technical inputs to facilitate tropical fruit development. However at this stage it would be premature to try and estimate these potential benefits and to attribute any contribution to CAD.

During the course of the project, depending on funding availability, CAD will look to working with other industry groups, (e.g. Papua New Guinea Growers Association, and the Papua New Guinea Spice Growers Association) to increase export earnings.

Western Samoa

Taro

Taro vies with coconut products as Western Samoa's largest export earner, with FOB values ranging from $2 to $4 million over the last few years. The rapid growth in Western Samoa taro exports since 1986 is a direct result of privatizing marketing. However, further revenue expansion is being constrained by "cut-throat" competition by individual exporters, absence of industry quality standards, shipping problems, and pests. CAD will focus on some of these constraints.

At the request of the industry the project will try to facilitate the development of a low cost taro washer drawing on research already undertaken by the University of Hawaii. If this innovation is successful it will improve the quality of Western Samoa taro and enhance marketing efficiency. The marketing coordinator, located at USP, will prepare a market driven marketing/quality standard manual for root crops, and will work with the industry and government for the adoption and enforcement of these standards. He or she will work with the industry to form a commercial association to improve and coordinate the operational aspects of marketing. If all these interventions are successful it would not be unreasonable to attribute a 25% increase in taro FOB revenue (around $1 million) to the project by the end of the period.

Bananas

Western Samoa is trying to re-establish an export banana industry to New Zealand. Bananas were Samoa's major export up until the end of the 1960s. Trial shipments are currently been made by Morris Hedstrom's (WS) Ltd. Western Samoa could realistically establish a 10% market share (2,000 tonnes value approaching $2m), based on the superior taste and the significantly shorter sailing time compared with Central American suppliers. Soil and climatic conditions are excellent for bananas in Samoa. There are, however, major quality related marketing problems to be overcome, particularly with respect to field practices and quarantine. Should a decision be made to move into a commercial phase of bananas exports then CAD will have a part to play in facilitating this process, with New Zealand aid probably taking the lead role. Some potential areas of CAD activity might include:

- supporting research to determine the fruit fly status of Samoan bananas;
- facilitate access to simple post-harvest treatment technology to enhance the appearance and prolong self life; and
- to provide organizational and operational assistance for the formation of a commercial banana growers association.

All these activities taken together could have a significant impact on the successful reestablishment of a banana export industry. However at this stage it is not possible to meaningfully quantify the possible magnitude of these benefits.

Vanuatu

Root crops

Yams in Vanuatu are a well developed traditional industry with good export prospects, particularly to Australia. However the cost of internal shipping is a major constraint. Also nematodes preclude exports to some markets including Hawaii and other Pacific Islands. Thus any significant commercial development is likely to on the island of Efate and will probably involving some mechanization and quarantine treatment.

CAD expects to provide organizational and operational assistance to the Syndicate D'Agricole and its associated member industries. Root crop exports may be one of the industries supported.

Under its quarantine treatment component, CAD will look to facilitate the development of a commercially operated hot water treatment facility for root crops. This will substantially expand the opportunities to export superior quality yams. The marketing and quality control manual for roots will provide the basis for industry enforced standards.

All these measures taken together are expected to facilitate the establishment of a new export industry. How quickly such an industry might develop is impossible to predict. However, in the project's five year time frame, it would be reasonably to assume that Vanuatu's root crops could exceed $300,000 million.

Black Pepper

The Vanuatu government has been promoting pepper as a small-holder diversification crop particularly in isolated areas. The experience of the Pohnpei industry has shown that the world market for premium quality (gourmet) black pepper is under supplied and that a small island nation can establish a successful industry. Vanuatu, like Fiji, has the additional advantage of being able to build an industry on supplying gift packages to a growing tourist market. Furthermore Vanuatu's labor supply situation is far more favorable than that of Pohnpei. However the Vanuatu industry lacks organization, and private sector involvement in processing and marketing is required. CAD expects to work with the Plantation Support Association, (as a member of the Syndicate D'Agricole) in developing its pepper marketing capability. However, it is premature at this stage to estimate what the value of such an industry might be.

Solomon Islands

Ngali nuts

The Solomon Islands wishes to develop the export of the indigenous ngali nut as an exotic tropical rain forest product. This delicately flavored nut would appear to have excellent potential if correctly packaged and promoted. However, a major constraint to commercial development is the nut's exceptionally hard shell. A simple cracker is required that allows sufficient volume to be handled in a cost effective manner. CAD will look to develop such a cracker. If this proves successful and the industry develops, CAD may also look to assist in the creation of a grower-owned ngali nut exporting company. However at this stage it is not possible to estimate what the value of such an industry might be.

Tonga

Fresh Produce exports

Tonga will not be an initial focus of CAD. (This could change substantially if additional funding were to be made available). However Tonga will benefit from the transfer of non-chemical quarantine treatment technology into the region. Tonga has already developed a substantial fresh produce export industry, thus along with Fiji stands to gain most from the successful transfer of this technology. As a rough guide the increased revenue might be set at half that forecast for Fiji.

Benefits in relationship to costs

The project investment to achieve the benefits described above is $6 million over a five year period. Additional project funding would increase and accelerate the benefit stream.

There will also be additional cost incurred by industry to achieve the increased value of exports. It is assumed that these costs will not exceed the cost of the project, since no major capital investment in high costs areas such as land development are envisaged. For calculating purposes it is assumed that industry costs will be the same as project, but spread over 8 years.

Comparison of these costs with the indicative identifiable and estimatable benefits are made in Table 4. The calculations exclude a range of products and activities for which no estimate of future benefits have been made. These include, black pepper, vanilla, specialty coffee, ngali nuts, and bananas. However the cost of the

expected project interventions for these products and activities are included. A more detailed list of likely project products and activities is described in Table 5.

Table 4: An Indicative Comparison of Benefits and Costs

Year	1	2	3	4	5	6	7	8
Benefits (B) (US$million)	-	.1	.9	2.0	3.9	6	7	8
Costs								
Project	.7	1.5	1.8	1.2	.8			
Industry	-	.2	.5	1.6	.8	1	1	1
Total Cost (C)	.7	1.7	2.3	2.8	1.6	5	6	7
B-C	(.7)	(1.6)	(1.4)	(.8)	2.3	5	6	7

IRR = 40%

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ANNEX J

SOCIAL SOUNDNESS ANALYSIS

by

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November 1991

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I. SUMMARY OF POLICY RECOMMENDATIONS

As a result of performing the following Social Soundness Analysis (SSA) of the USAID/RDO/SP Commercial Agricultural Development (CAD), Project No. 879-0025, the following recommendations are made to assist the design team and project staff in their further efforts to make the CAD project a success:

1) Incorporation of SSA into Curriculum Development Efforts of Management and Training Programs (e.g. Scope of Work for NGIP);

2) Recording of Women in Development (WID) Findings in Quarterly Reports of U.S. Contractors (e.g. disaggregated data on factors discussed below such as participant and beneficiary levels); and

3) Incorporation of Commodity-Specific Sustainability Assessment of Land Use Practices in Project Monitoring and Curriculum Development Efforts (e.g. ginger-growing practices in Fiji).

II. SOCIO-CULTURAL CONTEXT

A. Background and conceptual framework

From a socio-cultural perspective, the South Pacific island nations associated with the CAD project are all involved in the process of modernization. This process is typically defined in terms of the changes that occur when hitherto relatively localized socio-cultural systems become increasingly linked in a variety of ways to socio-cultural systems outside their areas. The fact that a unique combination of locally evolved socio-cultural characteristics is involved in each particular modernizing process, and that each has different combinations of linkages with the outside world over its history of change, adds to the complexity of such processes. In every case there are new modes of resource utilization and production, new forms of social organization, and new ways of thinking involved. Although the intent in the design of modernization projects is ultimately always to improve the quality of life in general, the specifics of social landscapes in areas where populations are involved in the modernization process are often uglier and worse off than many would care to admit. Avoiding important issues with the potential to cause unacceptable levels of socio-cultural disruption can be counterproductive, particularly when social unrest and disorganization fester until the point when revolution becomes unavoidable. This is particularly true during periods of rapid and radical change. For this reason Social Soundness Analysis should not be viewed as merely an annex to the

initial project design phase, but as an ongoing process that should extend beyond the life of the project. SSA provides a mechanism by which significant impediments and potential impacts of specific change proposals are identified and addressed at the design stage of project development. The overall intent of the analysis is to help ensure that the project, when implemented, will have the maximum likelihood of accomplishing its goals and the minimum likelihood of causing negative socio-cultural consequences.

The current degree of overall socio-cultural modernization varies considerably within the South Pacific region. Of the countries more centrally involved in the CAD project, the Melanesian countries (PNG, Solomon Islands and Vanuatu) are less modernized than Western Samoa (Polynesian), which in turn is less modernized than Fiji, where the exposure to outside influences has been the greatest. It can be useful to draw on the experience of cultures which are further along in the modernization process when directing change in areas which are less modernized. Such analysis helps to identify impediments and potential impacts of change, as well as to include the idiosyncratic factors of a particular area in the design of project components (1).

Historically the Pacific islanders had no conept that their islands formed a "region" of the world, not that the Pacific could be divided into three culture areas. These notions, which were developed relatively recently by Europeans, are somewhat arbitrary yet have helped to shape the Melanesian, Polynesian, and Micronesian identities islanders have come to assume in the course of shaping regional affairs.

There is great variation, both within and among the areas of the high-lying countries selected for CAD project activities,in their socio-cultural contexts. The time depth of human occupation and the physical characteristics of the islands have had a considerable influence on linguistic, cultural, and settlement patterns in the Pacific. The major islands of Melanesia have been settled the longest, are largely continental in type (supplemented by volcanic and low-lying coral island types), and have the largest populations, linguistic and cultural variation, resource bases, and inland waters. Hence they have developed varied and complex agricultural systems to support traditional lifestyles, and have considerable agricultural potential to support increasing aspirations to participate in modern lifestyles and nation-building efforts as well. The major islands of Polynesia are typically volcanic in type (supplemented by atolls), and to a lesser degree exhibit agricultural potential (2). The Pacific island countries targetted by CAD are the five high-lying nations in the region with the greatest agricultural potential: Papua New Guinea, the Solomon Islands, Vanuatu, and Fiji in Melanesia (although culturally Fiji is more similar to its Polynesian neighbors), and Western Samoa in Polynesia.

Minimal project activities are planned in the remaining five countries associated with the USAID South Pacific Regional Project Office.

Similar to each Pacific island country, however, is an underlying and dynamic tension between traditional attitudes concerning extended-family responsibilities, and modern attitudes supporting individualistic, entrepreneurial behaviors. Traditional values supporting identification with and responsibility to an individual's extended-family/clan are deeply-rooted in the belief systems of most Pacific islanders. Historically, extended families shared relatively small land areas, but with the advent of nationhood islanders increasingly identify with people beyond their immediate geographical area, including villagers who have migrated to urban areas or overseas and maintain ties to kin groups groups through regular remittances and participation in group decision-making processes (3).

Similarly, in each country traditional patterns of land tenure and use must be factored into the design of contemporary commercial agriculture development programs. Typically, smallholder (less than two hectares) land tenure and use patterns for commercial purposes cause the least disruption to traditional land use and cultural patterns (this factor is discussed in more detail below). Although it is not within the scope of this project to change existing land tenure and use patterns, their existence both limits the choice and shapes the design of commercial agricultural commodities and practices investigated by CAD, including considerations of beneficiaries, participants, socio-cutural feasibility, project impact, and social issues with a particular bearing on the success of the project.

Additional constraints which all Pacific island nations are faced with are related to their rugged land features and large expanses of ocean, straining the efforts of governments to provide their populations with adequate communication, transport, and shipping facilities. The export performances in the past decade of the bulk commodity crops, which have traditionally played subsistence and/or commercial roles in many island economies (e.g. copra and cocoa), have been lacklustre. Yet the potential exists for commercial agricultural export commodities to contribute more significantly to increased wealth of individuals and nations alike. Hence the CAD project focuses on high-value, value-added, and lower-bulk commodities, often designed for niche markets abroad (e.g. ginger, vanilla and other spices, fresh produce, taro, and cut flowers). Countries which have established a significant tourism development potential, and associated outgoing air cargo capacities, are especially well poised to tap the lucrative markets for such commodities in Australia, New Zealand, the United States, Canada, and Japan (4).

Efforts to overcome two remaining broad categories of constraints

to commercial agriculture development are the focus of CAD activities: a) strengthening commercial exporting enterprises (e.g. improving organizational/operational aspects, expanding businesses and privatizing parastatal businesses); and b) improving product export competitiveness (e.g. production, processing, quarantine treatment, marketing, and policy aspects). These efforts basically involve people and the products of their contribution of labor and capital resources to land resources. Capital resources are the focus of a separate annex, but in this annex human and land resources are discussed below in more detail.

B. Human resources

1. Labor force

Table 1 gives a brief summary of statistics commonly used by national planners to give an overview of a nation's human resources, with a particular view to rural agricultural resources (5). Although there are many interesting points which could be noted about the facts reported in this table, for example the outmigration pressure release factor in Western Samoa or the 800+ local languages in Papua New Guinea, it is at least as important to note that women are very often responsible for the majority of activities involved in getting an agricultural commodity to the farm gate, yet statistics on their role in the (agricultural) labor force are rarely collected (this issue is discussed further below).

Across the Pacific there are relatively high rates of population growth and modern educational systems which increasingly penetrate remote rural areas (albeit at a slower rate in much of Melanesia than in the rest of the South Pacific), creating an ever-growing cadre of young, cash sector job-seekers. Yet relatively few jobs are created each year to meet this rising demand level. In addition, there is typically a scarcity of indigenous people with the skills in highest demand on the job market (especially business and managerial skills required to successfully export high-value agricultural commodities abroad), and even semi-skilled people are scarce in parts of the region. While there is an abundance of people familiar with the traditional agricultural methods required to meet subsistence needs, and even a significant population which has gained some experience in growing crops traded on the world market (e.g. cocoa, coffee and copra), the potential of the commercial agricultural sector to generate additional cash incomes and associated improvements in the quality of life is considerable. Activities in the CAD project are associated with movement from the subsistence to the semi-commercial labor category (i.e. into the nation's "labor force") for some, and movement further along the continuum to the fully commercial agricultural commodity producer/processer/exporter category for others.

Although the theory in international economics is to pursue a nation's comparative advantage in exporting commodities in which the factors of production are especially well-suited to a particular nation's natural endowment (e.g. location in the Southern hemisphere, few natural pests), organization of the factors of production can be critical to the "level at which life is lived" on the part of project beneficiaries. The CAD design team has been very careful to emphasize the participation in the project of smallholders in producer-owned companies which have processing and marketing functions as well (6). Ownership models which will be promoted are 1) the cooperative model (e.g. the Friendly Islander Marketing Cooperative (FIMCO) in Tonga); and 2) large, producer-owned companies (e.g. New Guinea Island Produce (NGIP) in Papua New Guinea)(7). The CAD project also emphasizes the need to improve the quality rather than the quantity of agricultural commodities produced for export markets, creating the potential to generate greater cash incomes for <u>in situ</u> farmers and minimizing the pressure for scarce land resources. The CAD project also emphasizes crops which are grown in rotation with subsistence-type crops (e.g. ginger rotated with root crops). The combined CAD emphasis on smallholders in producer-owned companies, growing high-value, high-quality crops on a rotational basis, indicates sensitivity to traditional land tenure/land use patterns. This emphasis on the part of the CAD design team also indicates the potential of the project to improve nutritional levels in cases where significant amounts of cash income are spent on otherwise difficult-to-obtain protein sources. Past (especially in the colonial era) commercial agriculture development efforts have often focused on developing (large) non-producer-owned agribusinesses, and in cases where both cash and land resources have been inadequate on the part of the agricultural workers, nutritional status has even declined (8). Efforts of the CAD design team to avoid such mistakes of the past serve to maximize the potential for success of the CAD project.

An additional problem associated with increasing levels of population pressure in the Pacific is the requirement for change in traditional views towards natural resources as an immediate source of income, to sustainable views of resources as a source of capital which must be preserved to assure a flow of benefits far into the future (9). Although traditionally practices allowing for fallow periods and taboos associated with agricultural use of specified (e.g. steep) areas contributed to the sustainability for milennia of such practices, population pressures, exacerbated by uncertainty in the duration of customary land user-rights, all too often result in environmental degradation (e.g. ginger growing practices in Fiji), downward revisions to projected flows of project benefits, and fewer options for future generations.

2. Accumulation of wealth

Traditional attitudes in the Pacific towards the accumulation of wealth are significantly at odds with those advocated in the pursuit of profit-maximization in the private sector. Traditionally resources are viewed as something to be redistributed in support of a complex system of extended-family relationships, and any accumulation of business stocks and profits may be targetted for community consumption rather than reinvestment. Erratic work schedules, including frequent rescheduling to meet traditional social obligations, are accepted within traditional systems where a high value is placed on caring, the sharing of resources, and community solidarity. Many an islander has experienced the inward struggle often associated with trying to accomodate opposite value systems within a single lifestyle. Such struggles should be anticipated during project implementation, and creative solutions sought to accomodate both value systems when clearly project participants/beneficiaries are not prepared to discard the traditional for the modern value system. Despite the fact that the nexus between human and land resources (especially customary land user-rights) is so crucial to achieving projected outputs, it is not possible to assess in advance the details of a particular nexus when the project implementation strategy has deliberately been designed to be flexible enough to respond to specific demands within the region for broad categories of project inputs as they arise during the life time of the project. As participant and project site details associated with specific project activities become known during project implementation, it will be important to include social scientists as well as technicians in the design of training materials etc. An obvious example is the projected activity involving the transfer of managerial and operational expertise from the NGIP experience on the island of New Britain in Papua New Guinea to other areas of PNG and the Pacific region.

In assessing the motivation for islanders to participate in the cash economy, especially when traditional subsistence roles are still actively pursued and valued, it is important to not misinterpret a desire to obtain cash for specific purposes (e.g. clothing, school fees, imported food items) as a desire to accumulate profits/wealth in a modern, capitalistic sense. It is also important that a realistic assessment is made of the constant wealth-levelling pressures at work in and island community associated with the project. Such assessments may support more creative design approaches to the distribution of benefits accrued as a result of particpaton in commercial agriculture development other than simple individual cash payment schemes. For example, it may prove functional to factor as a cost of doing business a portion of business earnings earmarked from the start for communal consumption.

3. Entrepreneurship

Successful efforts to date in the Pacific region to export high value agricultural commodities have often been associated with foreign investors and resident minority groups. Management structures and operations in keeping with international business principles are typically foreign to the traditional value systems of Pacific islanders. Current national development plans in the countries involved in the CAD project assume a prominent role in the economy for export-oriented agriculture, despite the scarcity of people with a strong background and understanding of business development principles. Entrepreneurs do exist, but the scope and scale of their activities may require adaptation to the realities of modern business practices. Assistance with this adaptation process is an important focus of CAD project activities.

As indicated in Table 1, with the exception of Fiji, a minimum of 93% of the population of each of the countries associated with the CAD project is indigenous. The average incomes of indigenous populations in the Pacific typically lag behind those of (foreign investors and) non-indigenous populations. In an effort to "catch up," national planners increasingly target indigenous populations as the intended beneficiaries of project inputs. In Melanesia in particular, the exposure of indigenous people to successful entrepreneur models associated with migratory and/or multi-cultural population patterns has been minimal. The challenge to accelerate income growth within indigenous Pacific island populations is especially great, given the fact that the value systems of the majority of those involved in past export ventures (especially Europeans and Asians) are traditionally more in keeping with the values supporting successful entrepreneurship models (e.g. reinvestment of accumulated wealth) than the traditional value systems associated with Pacific islanders. National development banks in the Pacific have been at the forefront of efforts to find creative solutions to bridging this gap. Customary land user-rights often require adaptation to the modern business environment, yet rapid and radical changes are to be avoided for the reasons discussed above.

4. Women in development

The subject of Women in Development (often referred to as WID) is at least as trendy in international devlopment agency circles as the subject of environment is. There is a logical explanation for this phenomenon of the present development decade. If the 1950's are considered to be the First Development Decade of the post World-War II era (particularly for Less Developed Countries or LDCs), then we are now in the Fifth Development Decade. In only a few cases have prescriptions for "take-off" in the pursusit of economic growth been successful (e.g. Newly Industrialized Countries (NICs, such as Taiwan and Singapore),

while the development landscape is littered with debt- and poverty-ridden examples such as Zaire and Brazil. In the case of the ever-growing list of crisis-ridden countries, few would argue that the majority are better off after pursuing conventional development wisdom for four decades. Hence the flurry of activity in the "rethinking development" department. As a resuslt of such exercises, women and/or environment typically move to the top of the list of under-factored components contributing to past development failures.

The subject of the role of women in traditional vs. modernizing Pacific island societies is especially important to the success of the CAD project, especially in context of Melanesia. While hereditary chiefdoms and social stratification are more common in Polynesia, they are rare in Melanesia where the "big man" tradition operates. According to this tradition,

> men acquire status by deeds of warfare, oratory skills, demonstrated leadership ability, and the capacity to acquire and distribute wealth. A "big man's" status is never secure,and ambitious younger men are always standing off state waiting for their opportunities....The status of "big man" is symbolic of another important difference between Melanesian and Polynesian societies. Melanesian societies were and are male dominated. Women are definitely inferior in social status, and by and large, do not participate in political and major decision making processes. Women are viewed as the keepers of children and pigs (highly valued in the area), and a variety of taboos separate the sexes. In Polynesia, males occupy most chiefly and other important public roles, but women are not without influence. Women in chiefly roles are not unknown, and often, women have social hierarchies that parallel those of males. The sisters and other female relatives of chiefs and other notables have enjoyed exceptionally high status, and this has carried over into comtenporary times (10).

The traditional lack of particiation by women in political and major decision-making processes (including decisions regarding land tenure and user-rights) in Melanesia, and to a certain extent in Polynesia as well, is an important factor to consider in designing CAD activities. Although village men typically interface with visitors when initial decisions are to be made about project involvement, it is important that efforts are made throughout the course of the project to analyze existing patterns of women's involvement in growing, harvesting, processing, and marketing products intended for export markets, as well as in financing, managing and other operatinal activities.

Differentiation of gender-specific factors involved in successful (vs. unsuccessful) in-country CAD activities will be useful in replicating such activities. There is little precedent for such anaysis in the region, although a start has been made (e.g. a United Nations project in the Pacific region (RAS/89/W01) entitled "Integration of Women into Mainstream Development Planning," and parallel YWCA efforts region-wide to enhance the role of women in development efforts at the grass-roots level) (11). Statistics exist (see Table 1) in Vanuatu and the Solomon Islands, for example, on the number of women in the labor force. Data on gender-specific smallholder activities in the Solomon Islands are, unfortunately, rather limited in their scope. Efforts by CAD to initiate the collection and analysis of such data will be a useful contribution to national planning efforts in the associated countries, as well as in the design of CAD activities.

C. Land Resources

1. Land tenure and user-rights

The subject of land tenure and user-rights has already been touched upon in numerous discussions above, including those on traditional value systems and the role of women in traditional Pacific island societies. In Table 2 aspects of land resources in the five project countries are detailed, including a breakdown of customary, government, and freehold acreage, as well as information on lengths of leases, etc.

Careful analysis of the subject of land tenure and user-rights is so crucial to the success of the CAD project that it is worth summarizing several important observations made by social scientists familiar with the region: 1) the alienation of ancestral lands is anathema to most Pacific islanders; 2) women by and large do not contribute to major decision-making (including decisions about land use); and 3) women often perform essential key roles in the process of getting an agricultural export commodity. Detailed knowledge of the interface between traditional and modern, as well as human and land resources, must be specific with respect to the commodity, project site(s), and participant(s) involved in each project activity. A key aspect of the project strategy is flexibility, within the two broadly-defined project components mentioned above, to respond to regional requests in an evolutionary manner as the project breaks new ground with respect to revitalizing or energizing export levels of certain traditional export commodities (e.g. cocoa, coffee), and introducing new crops included in a separate annex to this document (e.g. vanilla, ngali nuts). This flexibility is valued more in the project design that the certainty of a specific statement such as "In year A management-level training with respect to commodity B will take place at site C, utilizing the experience of established enterprise D, and include

participants from areas E and F of countries G and H." Until such details are known, this analysis can only point to the more important categories of issues which are likely to ensure the accomplishment of project goals or minimize the likelihood of causing sociocultural consequences if project staff are aware of their importance and their continued analysis during the course of project implementation.

2. Smallholders vs. plantations

Table 3 gives details of traditional agricultural export commodities in the five project countries with respect to the number of hectares planted in crops which have recently been listed in national export statistics and their export value, as well as indicators of the number of smallholders planting such crops and their relative contribution to export earnings. Such statistics serve a particularly useful role as a benchmark from which project achievements can be measured.

In the past, export commodities which have been big earners of foreign exchange in the Pacific have often been grown on (large) plantations rather than on small plots of land (e.g. less than two hectares). A wealth of useful information on management and operational practices exists as a result of operating many of these plantations, which were often owned by non-indigenous people. Since independence national planners have placed greater emphasis on commercial agricultural development using a smallholder model rather than the plantation model popular during the colonial period. The smallholder model is much more appropriate to traditional land tenure practices, and allows the farmer the flexibility of retaining traditional subsistence aspects of one's lifestyle while venturing into the modern cash economy at a pace suitable to the specific farmer and cultural context.

The design of the CAD project has been very conscious of this trend in the Pacific towards increasing use of the smallholder model to organize the land, labor and capital inputs to commodity development, while retaining the larger-scale appraoch to processing or other aspects of the field-to-consumer contiuum if dictated by concerns for economic efficiency etc. Each component of the CAD project has been carefully designed, weighing at each step known technical, economic, environmental, and sociocultural parameters needed to determine the best choice of commodity, technology, people and places to pursue in meeting project objectives.

III. BENEFICIARIES

The beneficiaries of the CAD project are at several levels:

1) in the field, where individuals participate in production, harvesting, (processing) activities etc.;

2) in the private business sector, from which training materials will be developed, and for which these materials and the majority of other project inputs will be targetted;

3) in industry-specific organizations, e.g. ginger growers and/or ginger exporters;

4) in regional institutions, where research, training, and other project activities will take place, including a reorientation from the government to the private sector as the focus for future commercial agriculture development activities; and

5) in government agencies, where CAD will assist in efforts to regulate and certify quarantine procedures and other aspects essential to successful marketing abroad which have to proved to be bottlenecks in the past.

The project is designed and will be implemented as a regional project, even though work will be focused in only five of the ten counntries associated with the USAID SP/RDO. No bilateral aid is involved, although there will be Memorandums of Understanding (MOUs) signed by these participating countries. Because of close existing relationships between the Foundation for Peoples of the South Pacific (FSP) and country governments and the close linkage between this project and other FSP efforts in those countries, host country commitment is expected to be high. In addition, USAID will continue its close working relationship with the USP/Alafua Campus, which was developed through activities of the SPRAD project (1985-1990). The CAD project will work with the New Guinea Islands Produce Co. Ltd. (NGIP) to develop training materials relevant to the cocoa and other industries. The United States Department of Agriculture (USDA) will be involved in the implementation of the project, providing technical assistance on such matters as the development of quarantine procedures.

IV. PARTICIPATION

Participation of the above-mentioned beneficiaries during project development was possible through a number of visits by the design team to the following countries:

1) individuals in the field--Western Samoa, Fiji, Vanuatu, and Papua New Guinea;

2) private business sector--Western Samoa, Fiji, Vanuatu, Papua New Guinea, and Tonga;

3) industry-specific organizations--Fiji, Vanuatu, Solomon Islands, Papua New Guinea, and Tonga;

4) regional institutions--Western Samoa and Fiji; and

5) government agencies--Western Samoa, Fiji, Vanuatu, and Papua New Guinea (including provincial as well as national level in latter case, e.g. East New Britain Province).

V. SOCIO-CULTURAL FEASIBILITY

Work at each of the above-mentioned levels of the project will involve a mixture of understanding of constraints and opportunities associated with the following:

1) traditional vs. modern value systems;

2) the state of the art with respect to technology transfer associated with particular commodities;

3) international, regional, national, and local business management and organizational principles, depending on the specific context of an activity;

4) agricultural commodity export markets, especially those in the United States, Canada, Japan, Australia, and New Zealand; and

5) institutional settings in the government (including quasi-government and statutory bodies) and private sectors, and at international, regional, national, and local levels, depending on the specific context of an activity.

Opportunities and co straints of a technical, economic and environmental nature are the subject of other annexes to the CAD project document.

An example of a potential socio-cultural constraint, which could be particularly relevant in some countries (e.g. Western Samoa, Tonga or, to a lesser extent, Fiji) is the taboo associated with the practice of Christianity in some countries whereby (serious physical) work is prohibited on Sundays. Some interpretations of this Sunday restriction are stricter than others: for example, one might be able to pollinate vanilla plants on a Sunday (a quiet and delicate task which must be done every day of the week if the project is to be successful), but resistance could be

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expected to the cleaning of a vanilla fermentation vat in Tonga on a Sunday. There are many areas of social taboos associated with activities permissable by women and/or men, but these are more specific than the above example, which is applicable in several countries. It will be important to include social scientists (other than economists) in the composition of multi-disciplinary consulting teams which will be called upon to assess the feasibility of specific project activities during the implementation phase of the project.

VI. IMPACT

Due to the design of the CAD project, there exists significant potential for a spread effect within smallholder communities because of the training component and because of the behavioral modeling on the part of smallholders and business persons and institutions and the project team. Another important design element of the CAD project is the "follow your successful neighbor" principle, which will be utilized whenever possible rather than bringing in models of successful farmers and business people from outside the region. The spread effect will be possible within one area or between several regions within a single country, as well as between different countries within the region.

VII. ISSUES

There are several issues that were discussed at length during the project design process, and for which a response has been integrated into the design of the project. These issues have been discussed above, and are the basis for the organization of human and land resource issues highlighted in the first section of the paper. In addition to these issues, project flexibility concerns and efforts to achieve a spread effect were incorporated into the project design. On the whole, the sensitivity and the thoroughness of the design team with respect to careful analysis of these issues, given the flexible design of the project, has laid the foundation for a sound and most likely path breaking project, which will in turn be likely to serve as the take-off point for future projects designed to promote the development of commercial agriculture in the South Pacific region (and elsewhere).

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10) Kiste, Robert, 1990, ibid., pg. G-4.

11) Personal communication with Suliana Siwatibau, a member of the design team and former project manager of UNDP/UNIFEM project RAS/89/W01.

Table 1: Commercial Agriculture Development: Human Resources

FACTOR	WESTERN SAMOA	FIJI	VANUATU	SOLOMON ISLANDS	PAPUA NEW GUINEA
Population(1989)	160,000	727,000	143,000	314,000	3,500,000
Popul.growth /yr.	0.6%	2.2%	3.3%	3.3%	2.3%
Popul. % under 15	45%	38%	46%	47%	43%
Capital (population)	Apia (20,000)	Suva (70,000)	Port Vila (25,000)	Honiara (28,000)	Port Moresby (136,000)
Languages	2 (Samoan, English)	3+ (Fijian, Hindi,English, few dialects)	3+ (Bislama, English,French, 115 vernaculars	2+ (Pidgin, English, 87 vernaculars)	3+ (Pidgin, Motu, English, 800+vernaculars
Indigenous as % of total population	99%	48%	94%	93%	99.9%
Indigenous out-migrants (est.)	50,000-60,000	<10,000	Minimal	Minimal	Minimal
Percentage rural	87%	61%	86%	91%	93%
Labor force * (% total popul.)	42,000 (26%)	240,000 (34%)	51,000 (36%)	24,000 (15%)	n.a.
Govt. employment as % wage labor	Majority	26%	Moderate	37%	50,000 employees
Women as % of labor force	n.a.	n.a.	22,177 (43%)	3,876 (16%)	n.a.
Agriculture as % labor force	n.a.	106,305 44%	39,145 76%	8,039 33%	>50%
Labor shortages	Skilled, management	Skilled, management	Skilled, management	Semi-skilled, skilled, mngt.	Semi-skilled, skilled, mngt.
Adult literacy rate	90%	80%	53%	45%	47%
Life expectancy at at birth (years)	67	71	70	70	55
Real GDP per capita (1988, US$)	1870	3610	1620	2540	1960
Agricultural sectoral share of GDP (%, 1990)	n.a.	23%	22%	50%	33%
Human Development Index (HDI)	0.62	0.69	0.49	0.52	0.35

* Cross-country comparison of data related to labor force is difficult due to different national definitions of "labor force."

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Table 2: Commercial Agriculture Development: Land Resources

FACTOR	WESTERN SAMOA	FIJI	VANUATU	SOLOMON ISLANDS	PAPUA NEW GUINEA
Land type	Volcanic	Continental, volcanic,atoll	Continental, volcanic,atoll	Continental, volcanic,atoll	Continental, volcanic,atoll
No. of islands	10	320	80	60	>100
Land area (km sq)	2,934	18,330	12,189	29,785	461,690
Total (ha)	293,400	1,833,030	1,218,900	2,978,500	46,169,033
Customary (ha)	234,700	1,520,775	1,218,900	2,621,080	43,966,077
Freehold (ha)	12,000	216,675	0	<178,000	216,628
Government (ha)	29,500	91,125		>178,000	1,982,581
WSTEC leases(ha)	12,800				
Govt.agric.leases (ha)				256,900	
Density (popul.per km sq)	55	39	11.5	10.5	7.6
Arable land					
Hectares	71,000	240,000	145,000	57,000	388,000
Percentage of total	26%	13%	12%	1.9%	0.8%
Land tenure	80% under customary title, alienation of such titles forbidden, 10% govt.,4% WSTEC, 4% freehold	83% customary land ownership (mataqali), 7% government, 10% freehold	Tribal groups, clans and/or individuals w/ user rights only, agric. lease process often lengthy. Most land not registered.	88% customary ownership by clans (wontoks), 12% alienated (government or freehold)	95% unalienable clan holdings, 4.5% government (0.6% agricultural leases), 0.5% freehold. Major land registration program to allow leasing.
Land use	Communal stewardship vested in clan's chief (matai).	28% leased out by NLTB etc., 20% to non-Fijians.	User rights use-specific but do not necessarily correspond to geographic claims, village chief must be consulted on all decisions.	Customary land use primarily according to unwritten rules, some titled for commer.leases. Registered, alienated land use guaranteed by written law.	Native custom regulates use by indigenous community or person of unalienable land. Govt.converting freehold to leasehold, 40-60 yr. leases.

Sources:

1) Douglas, Norman & Ngaire Douglas (eds.), 1989. Pacific Islands Yearbook, 16th edition. Angus & Robertson Publishers, North Ryde, NSW, Australia.
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4) United Nations, 1990. Statistical Yearbook for Asia and the Pacific, 1990. New York.

Table 3: Commercial Agriculture Development: Traditional Export Commodities

FACTOR	WESTERN SAMOA	FIJI	VANUATU	SOLOMON ISLANDS	PAPUA NEW GUINEA
AGRICULTURAL EXPORT COMMODITY--Hectares (Export Value, US$ M*)					
Commodity	1987	1990	1989	1989	1990
Coconut products	28,000 (5.6)	56,000 (3.7)	70,000 (6.5)	16,000 (9.2)	280,000 (21.3)
Cocoa	8,400 (1.2)	2,255 (0.5)	5,223 (1.5)	800 (3.4)	65,000 (31.4)
Taro	15,000 (2.4)				
Sugar		70,000 (141)			
Ginger		229 (3.7)			
Coffee		212 (0.1)	100		
Papaya		70 (0.4)			200,000 (93.0)
Mango		(0.1)			
Vegetables		(0.3)	—		
Vanilla		2 (0.002)			
Palm oil				1984	
Tea				4000 (13.5)	26,000 (34.3)
Rubber					4,000 (10.5)
Pyrethrum					16,000 (1.8)
					10,000** (0.7)
SMALLHOLDERS--Number (% of total production)					
Coconut products	5,500 (60%)	7,000 (60%)	14,000 (82%)	(77%)	170,000 (61%)
Cocoa	4,000 (80%)	4,000 (80%)	5,000 (81%)	(41%)	20,000
Taro					
Sugar		22,200 (100%)			
Ginger		1,465 (100%)			
Coffee		(0%)	200 (<90%)		
Papaya		(100%)			200,000 (70%)
Mango		(90%)			
Vegetables					
Vanilla		(100%)			
Palm oil				(50%)	
Tea					4,000 (47%)
Rubber					300 (0%)
Pyrethrum					3,700 (26%)
					30,000 (100%)

* Conversion rates for export years indicated:
WS$=US$0.44, US$=0.67, US$=Vt 116, US$=SI$2.932, K = US$1.0511
** 1985

1) Bank of Papua New Guinea, 1991. Quarterly Economic Bulletin, vol. XIX, No. 2.
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ANNEX K

A REPORT ON A REVIEW OF USAID'S C.A.D. PROJECT PROPOSAL

Prepared by

ENVIRONMENTAL CONSULTANTS (FIJI)

DECEMBER 1991

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1 Terms of Reference

2 A review of Plant Protection and fertiliser recommendations for crops included in the USAID's CAD Project Proposal.

1 CONCLUSION AND SUMMARY OF RECOMMENDATIONS

This review of the draft CAD project paper which is approaching design completion has focused on the current use of biocides in the target crops selected, the potential for integrated pest management and on farming practices.

This review considers the design of the CAD project to be aimed at generally improving the quality of the target industries rather than expanding production *per se*. Conceptually this is far more likely to be a sustainable approach than merely attempting to increase production and total revenue from the industries.

The review has not revealed any practice or use of biocides which can be singled out as obviously unsustainable, this is to be expected because the review is too distanced from field conditions. Opportunities for promoting proper biocide use are documented, principally through incorporation in planned courses, in the production of publicity material and in industry regulations and bye-laws.

The review singles out ginger as a crop with major environmental problems which CAD will have to address. Given that little or no control can be expected from the Government or other auhorities, then the possibility that the industry itself can introduce changes which will place its production base on a sustainable footing, **should be given full support.** This alone justifies the CAD involvement.

The assistance to the Ginger industry should therefore include three environmental safeguards:

1 <u>Demonstration of sustainable ginger growing</u>
Demonstrations of sufficient size to be widely appreciated by both farmers and government that ginger can be grown continuously on flat or undulating ground.

2 <u>Monitoring</u>
The CAD project should include a monitoring programme to ensure that the objective of shifting the ginger industry to a sustainable footing is not sacrificed or over-riden by other objectives of the project, which may inadvertently encourage unsustainable practices.

3 Reviews and Termination

Periodically the monitoring should be reported in the form of a review at which time if it is concluded that the industry is not co-operating in the move to a sustainable production base, then the CAD assistance should be terminated.

It is also recommended that CAD should incorporate the following in its programme of assistance to the ginger industry:

1/ Conditions of assistance

Conditions for CAD working with the Fiji Fresh Ginger Exporters Association (FFGA) should include a commitment to moving the industry onto a sustainable growing base. (p 28).

2/ Environmental by laws.

In assisting the Fiji Fresh Produce Exporters Association (FFPEA) 'in the drafting of by laws and in the development of operating policies for the business' (p.30), CAD should ensure that sustainable growing practices are included.

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2 INTRODUCTION

2.1 Commercial Agricultural Development - Project Outline

The goal of the Commercial Agricultural Development Project (CAD), as detailed in the draft Project Paper, is to increase economic growth in the agricultural sector, based on private enterprise development.

As currently envisaged there will be two broad components to CAD with ten sub-components:

A - Strengthening commercial exporting enterprises

1 Privatising parastatal and government agribusiness activities.
2 Improving organisational/operational aspects of the enterprises
3 Identifying business expansion opportunities

B - Improving product export competitiveness

4 Establishing industry standards
5 Changing the policy/regulatory environment
6 Changing pre and post harvest practices to improve the quality and sustainability of the product
7 Introducing quarantine treatments
8 Introducing new processing technologies
9 Researching commercial problems and opportunities
10 Distributing information to enterprises and producers

2.2 Terms of Reference

The Terms of Reference for this report were drawn up following brief discussions between Dick Watling of Environmental Consultants (Fiji) Ltd. and Ms Sharon Fe of USAID/RDO/SP in conjunction with Dr Andrew McGregor - Agricultural Development Officer and are appended as Attachment 1. Dr McGregor provided further briefings and assistance as required.

Environmental Consultants (Fiji) Ltd. indicated that they would be able to provide 3 man days for the review within the time available. This was subsequently apportioned - Dick Watling, 2 days and Russell Dunham, 1 day.

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2.3 CAD Documents

The CAD Documents provided for the review were:

The draft project proposal (untitled;dated 25/11/91)

Initial Environmental Examination and follow up fax from APRE/BR/TR

Aid Handbook 3,App 2D. Environmental Procedures (for reference only).

Dr McGregor was available for briefings and assistance as required during the review.

2.4 Work programme

The review documents were collected on Monday 25 November 1991. work on the project was undertaken on Wednesday 27,Friday 29 and Saturday 30 November. The work was purely a desk study, there were no official interviews or site inspections. The objective of the litereature review was to find out if routine practices in the industries or sectors, irrespective of whether they are officialy recommended or not, were environmentally unsound either because of inappropriate use of biocides or other unsustainable practices. Resource discussions were held with three well-qualified persons associated with one more of the topics covered in the review. The work was divided approximately as follows, one quarter day - CAD document review, one and three quarters day - litereature search, one half day - discussions, three quarters of a day - report writing.

2.5 Comment on the Terms of Reference and the nature of CAD

It is clear that the goal and primary objectives of CAD are essentially removed from direct involvement with issues of environmental concern. It is also clear that CAD intends or has the potential of embracing, assisting or affecting a vast array of agricultural and techical issues, some of which extend to a direct environmental interface. In total they are far too many to review in detail under the current scope of work. This review has focused on the current use of biocides in the crops selected, the potential for integrated pest management and on farming practices. Some target crops for CAD have not yet been identified or referred to generically - floriculture, fresh produce, spices, root crops. The most likely crops were reviewed, otherwise such groupings were not followed up.

3 SUSTAINABILITY AND THE CAD PROJECT

In recent years, 'sustainability' has become embedded as essential development jargon but with little consideration of the true concept of sustainable development. This has been compounded by muddled thinking and a lack of definition.

For many there is a paradox, an inherent contradiction in the term 'sustainable development'. The former implies growth, increasing use of natural resources while the latter implies limits, the physical impossibility of indefinite growth. Whether a marriage between these concepts can be viable is debatable.

If, however, development is defined as an improvemnent rather than growth, quality rather quantity— the ability to convert a constant level of resources into an increasing amount of human satisfaction, then sustainable development can be realised and the paradox unfurled.

This review considers the design of the CAD project to be aimed at generally improving the quality of the target industries rather than expanding production *per se*. Conceptually this is far more likely to be a sustainable approach than merely attempting to increase production and total revenue from the industries.

This is particularly so in the South Pacific islands where land resources are strictly limited, in some places severely. Even in the case of a relatively land prosperous nation such as Fiji, all the first class agricultural land is being used. To use the remainder in a 'sustainable' manner will need considerable land management. At the present time the resources and direction for undertaking such management is almost completely absent which compounds the problem.

Thus the CAD project should be appraised as to its likely affects not merely with regard to on-site characteristics of the target crops but the likelikhood of growth, of the need for acquisition of further land resources for which it may not be suitable. It appears that no CAD component is directly concerned with increasing areas under cropping, but it does not mean that it will not happen and the CAD project would be ultimately responsible. An appraisal of this nature is all but impossible to do given the wide ranging nature of CAD and the generally derived

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or early intervention nature of its components. In most cases the interventions are clearly well removed from the environmental interface, but it is impossible to predict what direct or secondary changes might be brought about through the project, some of which could quite easily change biocide usage, cultivation practices or result in rapid and uncontrolled growth.

The only way that any such deleterious effects could be detected and then changed is either by monitoring or periodic review. It would seem more cost-effective if periodic reviews were incorporated into CAD to specifically look at the sustainable aspects of the target crops and technologies as they develop and are incorporated into the industry.

The most appropriate farming model for the steeplands which are increasingly being brought into production on the larger Pacific islands is one based on tree or shrub crops. Thus the development of a new crop such as the Ngali or Pili Nut *Canarium* spp is to be strongly encouraged.

4 BIOCIDE AND FERTILISER USAGE, INTEGRATED PEST MANAGEMENT AND BIOCONTROL

The review of the current usage of pesticides and fertilisers on CAD's target crops reveals a wide variety of recommendations and practices. Attachment 2. Integrated pest management is being developed for certain crops, but large scale implementation of IPM is effectively lacking. Developing education and training programmes would be necessary for it to become widespread. It is difficult to see this being done for any of the CAD target crops in the near future. Conventional biocide usage will prevail. However, the presence of the South Pacific Commission's Plant Protection Service will probably see IPM better co-ordinated and funded throughout much of the south Pacific. The CAD project should be aware of this during the duration of the project and co-ordinate its advice to the various industries accordingly.

The review has not revealed any practice or use of biocides which can be singled out as obviously unsustainable, this is to be expected the review is too distanced from field conditions. The important point with respect to biocide usage, is that in the current state of biocide usage and farming practice in south Pacific countries, problems usually occur as a result of inappropriate use by farmers either knowingly or but more normally through lack of awareness and ignorance. The offenders are nearly always in ignorance of the consequences either social or ecological.

The CAD project cannot be expected to become directly involved in biocide control and usage in all its target crops, or in biocide education and extension. However, it should be standing policy of the project, that whenever it is involved in drawing up industry guidelines, bye-laws or regulations or whenever courses are run, or publicity material produced, then the appropriate inclusions with respect to biocide usage are made.

This applies to the courses to be run at NGIP (Component A.2), the assistance to the various parastatals as they become commercial firms with bye-laws, regulations etc.(Components A.1 and A.2). The establishment of Industry Standards should also include environmental standards (Component B.1 and B.3). Distribution of information to enterprises and producers (Component B.7) should include information on unsustainable practices and/or other environmental problems.

Similar reasoning and recommendation can be extended to the cultivation of the target crops but with one notable exception, which is ginger.

5 GINGER

Ginger is currently Fiji's third most important agricultural industry. It has attained this position with a rapid and sustained growth over the past two decades. Fiji currently earns over F$5 million in export revenue from the industry. However, in its current form the Ginger industry is clearly not sustainable. it is based on some of the worst examples of expansive land mis-management to be seen not only in Fiji but in the South Pacific. The National State of the Environment Report for Fiji (in press) cites the ginger industry as a major environmental issue.

The problems are widely known and have received considerable attention, a concise review is Buresova and McGregor (1990) but there has been little or no improvement in recent years.

It appears that Government and the NLTB (as the custodian of the majority if not all the land which is being degraded by the industry) are unable or unwilling to introduce the necessary control and management measures to shift the industry onto a sustainable production base. Indeed every encouragement appears to be given to expanding the industry in its present form.

Given that little or no change can be expected from the Government, then the possibility that the industry itself can introduce changes which will place its production base on a sustainable footing, **should be given full support.**

However it is essential that the CAD project does not inadvertently support the industry in its present form, or worse, provide for its expansion without change to a sustainable production base.

The assistance to the Ginger industry should therefore include three environmental safeguards:

1 <u>Demonstration of sustainable ginger growing</u>
Demonstrations of sufficient size to be widely appreciated by both farmers and government that ginger can be grown continuously on flat or undulating ground.

It is important that these demonstrations are of sufficient size to be appreciated by farmers ie normal farm size, not just research plot size.

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2 Monitoring

The CAD project should include a monitoring programme to ensure that the objective of shifting the ginger industry to a sustainable footing is not sacrificed or over-riden by other objectives of the project, which may inadvertently encourage unsustainable practices.

3 Reviews and Termination

Periodically the monitoring should be reported in the form of a review at which time if it is concluded that the industry is not co-operating in the move to a sustainable production base, then the CAD assistance should be terminated.

It is also recommended that CAD should incorporate the following in its programme of assistance to the ginger industry:

1/ Conditions of assistance

Conditions for CAD working with the Fiji Fresh Ginger Exporters Association (FFGA) should include a commitment to moving the industry onto a sustainable growing base. (p 28).

2/ Environmental by laws.

In assisting the Fiji Fresh Produce Exporters Association (FFPEA) 'in the drafting of by laws and in the development of operating policies for the business' (p.30), CAD should ensure that sustainable growing practices are included.

REFERENCES

Buresova, N.V. & A.M.McGregor 1990. The economics of soil conservation: The case study of the Fiji Ginger industry. Proceedings of the Fiji Symposium, June 1990 *Research Needs and Applications to Reduce Erosion and Sedimentation in Tropical Steeplands*. 247-255.

Watling,D. & S.A.Chape (in Press). *National State of the Environment Report for Fiji*. National Environment Management Project, Ministry of Housing & Urban Development, Suva.

ATTACHMENT 1:

Terms of Reference for the Review

ARTICLE - I

Project: To provide a report to USAID/RDO/SP on the sustainability of various high value crops and on the probable effects on the environment of increased production of these crops.

ARTICLE II - OBJECTIVES/SCOPE OF WORK

The Contractor will work under the general direction of the USAID/RDO/SP's Agricultural Development Officer.

The Contractor will be required to:

1. Review all CAD reports to date and all available literature on the environmental interactions, both potential and actual, in the production, quality control, quarantine treatment and marketing of high value niche and value added commodities in the countries within our region. These crops include, but are not limited to, ginger, vanilla, coffee, cocoa, value-added coconut products, pili nuts, vegetables, squash, spices, taro, and various fruits such as banana, pineapples, papaya and mango.

   The literature search should cover:

   i) The potential for IPM (including biological control methods under investigation or approved).

   ii) Potential effects on biological diversity in production areas (i.e. in the use of currently approvad pesticides).

   iii) Potential negative and positive environmental consequences of intensive production in the short term.

   iv) Where known, the long term effects on soil fertility and water quality of intensive production under current practices.

   v) Whether mitigation packages are in practice.

2. The Contractor will recommend alternative practices to avoid or reduce potentially harmful activities where such recommendations are already in existence, but not used, or consultant will suggest possible incentive and training programs to encourage adaptation of sustainable practices. A monitoring program which evaluates the effect on the environment of a changing production process should also be identified in the report.

ATTACHMENT 2:

PLANT PROTECTION AND FERTILSER RECOMMENDATIONS FOR CROPS INCLUDED IN USAID'S COMMERCIAL AGRICULTURAL DEVELOPMENT PROJECT.

PLANT PROTECTION AND EERTILSER RECOMMENDATIONS FOR CROPS INCLUDED IN USAID'S COMMERCIAL AGRICULTURAL DEVELOPMENT PROJECT.

This attachment documents the recommended pesticide and fertiliser usage for selected crops included in USAID's Commercial Agricultural Development project. These refer primarily to recommendations for Fiji but are in the main Pacific wide in application.

The potential for Integrated Pest Management and current biocontrol status data has relied on South Pacific Commission sources. Their Plant Protection Project is the largest working in the field in the South Pacific.

All pesticides stated throughout the report are referred to by adopted chemical names and fertiliser by elemental ratings unless otherwise specified. Chemical rates are stated as active ingredient per hectare.

The hazard status of the pesticides cited throughout this report are listed in Appendix 1.

As the recommended pesticides and fertilisers and indeed standard practices adopted vary so much for the individual crops selected for the project, the report will be structured on crop by crop basis.

1. Bananas (*Musa* spp.)

1.1 Current recommended pesticides.

Herbicides: Dalapon at 3 Kg/Ha for control of grass weeds.
: Paraquat at 600 mls/Ha as a directed spray.

Insecticides: Diazinon (14gms/13l) of waterused a dip for planting material in the control banana weevil borer.

Fungicides: Benomyl (800mls/Ha) for control of foliar fungal diseases.

1.2 Current recommended fertilisers

: Urea (200 Kg/Ha) at establishment.
: Superphosphate (50 Kg/Ha)
: Potassium sulphate (300 Kg/Ha)

1.3 Standard practices

Very few farmers use fungicides on Bananas as the effectiveness of the chemicals is limited, primarily due to the high infection rate of these foliar fungal pathogens. Many farmers are using Carbofuran and other soil applied insecticides and nematicides for the control of weevil borer and burrowing nematode.

1.4 IPM, Biocontrol and other relevant information.

IPM may have an important role for it is generally believed that the future for commercial banana production in the Pacific lies in the establishment of suitable cultivars that have high resistance to black leaf streak disease. Several resistant cultivars have been made available to the Tissue Culture Laboratory at South Pacific Commission.

Biocontrol for two pests is being attempted in Tonga - most importantly the control of the aphid which spreads Bunchy Top disease.

2. Pepper (*Piper nigrum*)

2.1 Current recommended pesticides.

Nil

2.2 Current recommended fertilisers

: NPK 12:5:4 at 2.7 kg/plant/year, appliedevery three months while establishing.

2.3 Standard Practices.

Current practices carried out in pepper cultivation at Naduruloulou Research Station, Fiji do not include the use of herbicides, insecticides or fungicides. Substitution of regular inorganic fertiliser applications with organic fertilisers (poultry manure, cow manure etc.) is recommended.

2.4 IPM, Biocontrol and other relevant information.

Due to the small amount of pepper presently grown commercially in the Pacific island countries, the incidence of major insect and disease pests is minimal.

Physical weed control is practiced and the use of resistant varieties (Belantung) deals with the most serious disease of pepper (Foot rot caused by *Phytopthora palmivora*). Pink disease (*Corticcium samonicolor*) and pepper weevil are presently, adequately controlled by cultural methods.

3. Cocoa (*Theobroma cacao*)

3.1 Current Recommended Pesticides.

<u>Herbicides</u>: Paraquat at 800mls/Ha when weeds appear, (contact, no residual activity, non-selective)

: Glyphosphate as 12% solution applied by wick wiper. (systemic, non-residual and non-selective)

: Dalapon at 6.0 Kg/Ha, applied to established coffee plants for grass weed control, remains active for a few weeks.

Insecticides: Carbofuran at 20g/tree applied 3-4 times/year for stem borer control. (*Xyleborus fijianus*)
: Acephate at 800 gms/ha for control of cluster caterpillar (*Spodoptera litura*), rose beetle (*Adoretus versutus*) and green lopper (*Pulisa* spp) when outbreaks occur.

Fungicides: Copper oxychloride at 4g/l of water, spray tree every 2 weeks during wet periods for control of black pod, pink disease and thread blight.

3.2 Current Recommend Fertilisers

No fertiliser recommended for new plantings on fertile soil. For cocoa on poorer soil the following is recommended: (Kg/Ha)

	Urea	Super phosphate	Sulphate of Potash
Year 1	30	50	40
Year 2	60	100	80
Year 3 and over	90	150	120

(Apply in a 2 split doses every 6 months).

Sulphate of potash is preferred over Muriate of potash as cocoa is sensitive to chloride toxicity.

3.3 Standard Practices

Majority of village cocoa projects use no herbicides or insecticides. Physical control of weeds is common, as is mulching.

Fertiliser usage varies widely throughout different cocoa projects.

Control of the fungal pathogen causing black pod by washing infected pods with a mixture of one part Janola (commercial bleach) to 10 parts of water has proved to be effective.

3.4 IPM, Biocontrol and Other Relevant Information.

Although insect pests of cocoa are not a serious as fungal pathogens (blackpod and stem canker) their role as pests are now being given more serious consideration as cocoa plantings become more intensified. Insect pests of cocoa like those of coffee are susceptible to the implementation of biological control programmes as there are relatively few major insect pests, little or no insecticides are currently used and it is a long term perennial crop.

The use of tolerant varieties to black pod and correct sanitary

practices lessens the need for fungicide applications.

Weeds can be a serious problem to cocoa during the first few years, however this could be minimised by manipulating the temporary shade.

4. Coffee (*Coffee arabica* and *Coffee canephora*)

4.1 Current recommended pesticides

Herbicides: as per cocoa (section 3.1)

Insecticides: Acephate at 800 gms/Ha and Endosulfan at 650gms/Ha for sporadic infestations of berry borer.

: Acephate at 800gms/Ha for control of mealy bug and green scale.

Fungicides: Copper oxychloride at 1.5 Kg/Ha for the control of berry blotch (*Curiospora coffeicola*) and coffee rust (*Hemileia vastatrise*).

4.2 Current Recommended Fertilizers

: NPK, 13:13:21 at 365 Kg/Ha for coffee less than one year old and 700 Kg/Ha for coffee more than one year old, applied annually, normally prior to flowering.

4.3 Standard Practices.

The largest coffee plantation in Fiji (Carpenter's Taveuni) uses only Paraquat for weed control, due to the high cost of Glyphosplate and the narrow spectrum of species activity of Dalapon. Much of the large coffee plantings in Papua New Guinea is hand weeded.

4.4 Other relevant information.

Coffee being a long term perennial with little need for pesticide application apart for out breaks of coffee borer lends itself to possible biological control programmes for its major insect pests. Biocontrol of the coffee borer is being investigated in Papua New Guinea.

Coffee rust only attacks *arabica* variety in Fiji, hence fungicide applications for rust are limited to this variety. As the crop canopy establishes itself, the need for the use of herbicides decreases substantially. Coffee uses large amounts of nutrients from the soil, especially potassium, much of which is contained in the pericarp, which if processed on site can be returned to the soil as a mulch.

5. Ginger (*Zingiber officinalis*)

5.1 Current recommended pesticides

Herbicides. Atrazine at 2.5 kg/Ha, applied immediately after planting.

: Diuron at 3.5 Kg/Ha applied after planting.

5.2 Current recommended fertilisers.

: Poultry manure at 10t/Ha incorporated at land preparation.

: NPK 13:13:21 at 1t/Ha applied as a split application, 50% at time of planting and 50% 3 months after.

: Urea (46%) at 300 Kg/Ha applied as a top dressing.

5.3 Standard Practices

The comprehensive extension services provided by the Fiji government for the crop and the regular monitoring by the ginger exporters ensure that the above recommendations are normally adhered to by the majority of farmers. However when poultry manure is unavailable, farmers will substitute NPK applications with manure application, often up to 2.5 t/ha.

The use of atrazine with its long residual period is favored by the majority of farmers.

5.4 IPM, Biocontrol and other relevant information

The continual use of inorganic nitrogenous fertilizers is currently and is likely to continue to decrease the pH of the soil, this is further extenuated by the high leaching rate in the areas where ginger is currently grown in Fiji.

The present localisation of the ginger industry in the Central Division ensures a high labour supply. This allows for a relatively high amount of physical methods of pest control, which would otherwise be substituted by other methods, including chemical control.

The most serious plant protection problem for ginger is the burrowing nematode (*Radophlus similis*) and the resultant secondary fungal pathogens (*Pythium* and *Fusarium* spp). Current control methods include the correct selection of planting material, hot water treatment of planting material and correct plant rotation. A few farmers have been reported to use a nematicide, carbofuran at 1kg/Ha applied at planting with some success. It is generally believed that if the above mentioned cultural practices are carried out correctly then the use of nematicides is unnecessary.

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6. Mango (*Mangifera indica*)

6.1 Current recommended pesticides.

Herbicides: Glyphosphate (1l/Ha) applied as a ring spray around trees.

Fungicides: Benomyl (800ml/Ha) for control of anthracnose on fruit.

6.2 Current recommended fertilisers.

: NPK, 13:13:21 at 60 Kg/Ha to 480 Kg/Ha, depending upon age of the tree and fruit bearing stage.
: Urea at 30 Kg/Ha to 300 Kg/Ha depending upon age of the tree.

6.3 IPM, Biocontrol and other relevant information

Commercial growing of mango is relatively small scale, with few intensive commercial growers. The major threat to commercial mango production are fruitflies. An intensive IPM programme is being undertaken in Fiji by the FAO/UNDP at the present and this will be extended to some other South Pacific countries in the near future. Another major threat is the mango weevil, this cannot be controlled by pesticides as such and is a threat of quarantine significance.

No major pesticide use in an expanded Mango industry is envisaged.

7. Pawpaw (*Carica papaya*)

7.1 Current recommended Pesticides.

Herbicides: Paraquat at 3 l/Ha, around base of trees when needed, approximately five applications per year.

7.2 Current recommended fertilisers.

: NPK 13:13:21 at 600 Kg/Ha/year, divided into 3 applications at a rate of 150 gms/plant.
: Urea 300 Kg/Ha, divided into 2 application at a rate of 110 gms/plant.

7.3 Standard Practices

Once the trees are established weeds are normally controlled mechanically by mowing rather than by the use of herbicides.

7.4 IPM, Biocontrol and other relevant information.

Fruitfly is a problem which is the subject of an intensive IPM investigation in Fiji at the current time, as for Mango (above). There are few insect pests and diseases in Fiji that cause major

economical losses, but birds can become a problem if fruits are not picked green.

Anthracnose and shot hole diseases are prevalent during the hot wet months and may require fungicide applications. *Phytophora* root rot can be a serious disease in poorly drained sites.

8. Pineapple (*Ananas comosus*)

8.1 Current Recommend Pesticides

Herbicides: Diuron at 3.2 Kg/Ha applied after planting (residual weed control)
: Bromacil at 3 Kg/Ha applied after planting.

Insecticides: Diazinon at 1.5-2l/Ha for control of mealy bug.

Fungicides: Benomyl at 1gm/liter of water, mixed as a dip for planting material for control of base rot.

8.2 Current Recommended Fertilisers and Hormones

Fertiliser: Superphosphate at 250 Kg/Ha at planting. 3 applications of NPK, 13:13:21 at 250 Kg/Ha at 3-4 month intervals.

Hormones: NAA (Planofix) at 10 ppm mixture, and 50 mls of mixture/plant to increase fruit size and induce flowering.

8.3 Standard Practices

The use of the residual herbicides especially those recommended is widely practiced by the majority of commercial farmers.

Many farmers are now using Acephate for the control of mealy bugs rather than Diazinon, suggesting it to be more efficacious.

The use of hormones is becoming common practice among the larger commercial growers.

8.4 IPM, Biocontrol and other relevant information.

There is no IPM programme developed or envisaged, thus the crop relies on conventional pesticide use. The tolerance to acidic soils exhibited by pineapples allows it to be cultivated on soils unsuitable for many other crops.

9. Squash (*Cucurbita* spp.)

9.1 Current Recommended Pesticides

Herbicides: nil

Insecticides: nil

Fungicides: Mancozeb at 500 gms/Ha for control of Downey Mildew and anthracnose.

9.2 Current Recommended Fertilisers

: NPK, 13:13:13 at 200 Kg/Ha applied at planting.
: Urea at 100 Kg/Ha applied as a top dressing at flowering.

9.3 Standard Practices

The use of Acephate for the control of aphids is common among larger growers. Poultry manure is often used in conjunction with NPK applications or as a substitute, at rates up to 5 tonnes/Ha by smaller farmers who have access to a supply.

Benomyl is often used by commercial growers for the control of powdery mildew.

Weed control is normally by physical and mechanical methods.

9.4 IPM, Biocontrol and other relevant information

The most serious plant protection problem of squash are foliar fungal diseases. The use of fungicides appear to be the only viable control measure available at present. Fruit fly and a beetle are other reported pests and these are controlled through conventional pesticide usage which can be heavy.

10. Taro (*Colocasia esculenta*)

10.1 Current recommend pesticides:

Herbicides: Paraquat 600 mls/Ha applied as a directed spray before canopy closes.

Insecticide: Malathion 14 mls/13l of water for control of white fly, plant hoppers and cluster caterpillar.

10.2 Current Recommended Fertilisers:

: Nitrogen at 100 Kg/Ha as split application at 5, 10 and 15 weeks after planting.
: NPK, 13:13:21 at 400 Kg/Ha at planting.

10.3 Standard Practices.

Inorganic fertiliser usage for Dalo is high, particularly amongst farmers producing Taro for export. Weed control is essential in the first three months of growth, many farmers produce taro on slopes whihc are unsuitable for mechanical weed control, thus the use of contact herbicides, such as paraquat, is prevalent with up to three applications before the canopy closes.

More recently some farmers have reported success with low rates (1 Kg/Ha) of Atrazine, while in Samoa low rates of Dalapon (3Kg/Ha) have been successful after planting.

10.4 IPM, Biocontrol and other relevant information.

There has been a number of biological control agents released for the control of insect pests in Taro in Fiji. The success of these agents have been restricted by the use of broad spectrum insecticides, this is despite the lack of evidence of yield reduction as a result of the activities of these pests. The high prices and the demand for quality in Taro grown for export, further influences the farmers into increased use of pesticides.

11. Vanilla (*Vanilla fragrans*)

11.1 Current recommended pesticides

Nil

11.2 Current recommended fertilisers:

: NPK, 13:13:21 at 100 Kg/Ha, applied when flowering first commences.

11.3 IPM, Biocontrol and other relevant information.

Vanilla requires little or no use of pesticides or fertilisers. It requires no weeding except for one meter around its base which is done by physical methods. The use of mulching material normally provides sufficient nutrients for vanilla. Curently the biggest threat to Vanilla are virus diseases for which cultural and genetic control has been developed.

12. Yams (*Dioscorea* spp)

12.1 Current recommended pesticides

Herbicides: Atrazine at 4 Kg/Ha or Diuron at 3 Kg/Ha applied immediately after planting for residual control.

: Paraquat at 600 mls/Ha as a directed spray when weeds appear.

Insecticides: nil

Fungicides: Benomyl (1 Kg/Ha) foranthracnose control at 2-3 weekly intervals.

12.2 Current recommended fertilisers.

: Nitrogen at 100 Kg/Ha as 3 split applications; 10, 14 and 18 weeks after planting.

: Superphosphate at 200 kg/Ha at planting.

: Potassium at 80 Kg/Ha at planting.

12.3 Standard Practices.

The majority of farmers use nitrogen fertiliser only and use no fungicides.

The residual activity afforded by the use of Atrazine or Diuron herbicides is being increasingly appreciated by farmers.

12.4 IPM, Biocontrol and other relevant information

The most serious disease of yams, anthracnose, is most severe on the susceptible variety "Taniela", so where possible, resistant varieties are recommended for planting.

The planting of yams has steadily decreased in Fiji, mainly due to the more lucrative returns afforded by Dalo and Ginger.

13. Ngali, Pili Nuts (*DCanarium* spp)

13.1 Current status

Ngali or Pili Nuts have long been a seasonal food of great importance in the Soloman Islands. As a traditional staple, Ngali nut trees have been carefully conserved, planted and harvested on an annual basis, it is a tree well integrated into rural lifestyle in many parts of the Solomon islands. Recently there has been great interest in developing this practice into an export industry but nothing significant has yet been undertaken. The basics of yields, husbandry requirements, propagation and varietal differences etc. still need research and documentation.

As indicated in the main text of the report, the land resources of the Pacific island nations is strictly limited. In some countries such as Fiji, Samoa and Vanuatu, there is little or no first class arable land remaining, future agricultural expansion will be into the hill lands and steep lands. The most appropriate and sustainable agricultural industries in these areas are perennial tree or shrub crops and not cultivated, short duration crops.

ANNEX L

Discussion Paper
on
Privatization of Ginger Processing
by the
Tropical Food Products Manufacturing (Fiji) Limited
(Presently 100% owned by NMA)

It has been a long stated goal of both MPI and NMA that eventually the ownership of the young ginger processing industry should pass to the producers. Officials with MPI and NMA have both indicated that they believe that now is the time for this privatization to occur. There are several reasons why the timing is now, including:

1. The NMA is just beginning a major new activity of becoming the wholesale supplier to village stores and to government and thus has less time available to devote to ginger.

2. The CAD project is expected to be able to give assistance in privatization planning and implementation.

Some of the background on the industry is as follows:

Young ginger. The ginger operations of Tropical Food Products (TFP) were profitable in 1989. In 1990 the processing operations suffered a loss of $62,000.

However we note that in 1990 there were substantial increases in costs in certain areas that might be reduced in the future such as:

- Management fees increased from $80,000 to $170,000.
- Bad and doubtful debts, primarily with growers increased from -0- to $61,000.
- Bank interest increased from $68,000 to $96,000.
- Interest to NMA increased from -0- to $20,000.
- Director's fees increased from -0- to $10,000.

Any restructuring of the business would have to be accomplished in such a way so as to reduce some of the above costs and create the conditions for sustained profitability in the future. The design team believes that this can be done.

In addition the design team note that TFP is the owner of the loss- leading Batiri Citrus Orchard which sustained losses of $185,000 in 1989 and $83,000 in 1990. Batiri is primarily an orange plantation on the island of Vanua Levu and as such is irrelevant to TFP operations or the young ginger industry located on Viti Levu. Thus Batiri should either be retained by NMA or quickly disposed of by TFP. We believe that through privatization TFP could become significantly more profitable than it is at present, and that the new grower owners would ultimately benefit. In addition the design team understands that there is a significant undersupply of processed young ginger products on the world market and that significant potential exists to increase production and processing.

While the present product from TFP is of acceptable quality there is room for improvement. In particular improvement in field practices and in the post- harvest handling before the ginger reaches the factory could greatly increase the returns to producers by both increasing production and lowering the rejection percentage. At the same time the factory would achieve substantial savings if the percentage of waste could be reduced as a result of better field practices producing larger sized young ginger.

The final shape of the privatization of TFP will include a process that will consider the views of the many interested parties such as:

1. The growers
2. NMA
3. MPI growers
4. The bankers
5. Others

The following is a partial list of ideas that will need to be considered by the above parties during the structuring of the industry's privatization. These ideas which have come from discussions with a lot of different persons are presented for consideration and should <u>not</u> be taken as a recipe for privatization.

1. Valuations of the ginger processing and Batiri Citrus operations should be made.

2. The Batiri Citrus operation should either be retained by NMA or should be disposed of by TFP soon after privatization. This is because Batiri is of little interest to the ginger farmers or the processing factory and consistently loses money.

3. Agreement must be reached on the price to be paid by NMA the ginger growers for TFP.

4. NMA could be paid through the issuance of 10% cumulative preferred stock with the right to one seat on the Board of Directors to go to the owners of preferred shares.

5. Ginger farmers could begin to acquire shares in NMA as follows:

   a. By TFP withholding one cent per kilo from all purchases of ginger to be applied toward purchase of shares by the growers.

   b. From TFP profits after payment of the preferred dividend to NMA. It is suggested that growers should receive a 100% dividend on the profits of TFP in direct proportion to the amount of ginger they have sold to TFP. The dividend would be paid 50% in cash and 50% in additional shares.

   c. Should TFP find that they can pay higher prices for the ginger, 50% of the price increase should be retained by TFP and applied toward the purchase of additional shares by the grower.

   d. At some future date sufficient capital will have been paid in by growers. At that time the share purchase plan will continue as before. However all proceeds from the sale of new shares will then be used to retire first the preferred shares and then the ordinary shares with the older shares being retired first.

6. The Board of Directors should represent the spectrum of interests that affect the industry and as such the design team suggests that it might have seven members as follows:

   a. three growers (four after all preferred shares are purchased from NMA);

   b. two outside members (possibly including a government member and a banker);

   c. the preferred shareholders representative; and

   d. the managing director.

   Election of the above persons would be done by the shareholders at the annual general meeting, however the by-laws would require selection of outside representatives to ensure a continuing balance of expertise on the Board.

7. As soon as possible after privatization TFP should set up its own headquarters office to handle marketing, accounting, purchasing and other business currently done by NMA.

8. As part of the privatization process the following issues should be discussed and agreed upon with the growers.

   a. the procedures for establishing and monitoring grading.

   b. the procedures for establishing a pricing formula for purchase of ginger.

   c. the method of expanding or contracting production contracts with farmers.

   d. the criteria for selection and contracting with new farmers for production of young ginger.

   e. the criteria for discontinuing contracts with farmers who fail to meet their contracts.

f. the method of buying back shares of farmers who discontinue young ginger production (It may be that they will be issued preferred shares to replace their common shares).

9. It is essential to the success of the industry's privatization that adequate financing is available. This means that the bankers must be satisfied that at least the following three criteria are being met:

a. That there is adequate collateral for loans.

b. That there is strong assurance of profitability and cash flow to repay the loans.

c. That the new management is both competent and trustworthy.

A major factor for the future health and profitability of the industry will be the extent to which the bankers will insist that farmers adopt improved cultural practices as a condition of granting loans. It is the belief of the design team that substantially improved returns to the farmers can then be achieved. While the present quality of young ginger is acceptable there is considerable room for improvement. The young ginger grown by most farmers is still too small, with too much fiber, and too high a percentage of rejects. Improvement in field practices could increase the size, reduce fiber content and reduce rejects. The increased returns to the farmers and resultant increased efficiency and quality at the factory could make this a much more attractive industry for the country. It will be essential that the farmers, the bankers, MPI and TFP work together to ensure that this potential is realized.

ANNEX M

New Guinea Island Produce (NGIP) Ltd:

Background Paper

The Company

NGIP is one of PNG's oldest and largest nationally-owned public companies. It was formed in 1971 and has some 6,000 shareholders, most of which are farmers and landowners from the East New Britain Province (ENBP). The company had its origins in the Tolai Cocoa Project which was established in 1955.

Plantation redevelopment on behalf of landowner: NGIP manages 23 projects covering 4,400 ha of redevelopment of plantations previously owned by foreign companies. These projects are located on the islands of New Britain and New Ireland (See Fig. 2). Loans of K10.6 million had been provided for this development. This finance would not have been available to the new Papua New Guinean land owners without the involvement of NGIP. The company carries out feasibility studies, makes loan applications and manages redevelopment on behalf of land owners. These projects currently produce 2,000 tonnes of cocoa and are projected to reach an output of 6,500 tonnes. The NGIP also owns outright two plantations totalling 540 hectares. Both plantations have been redeveloped with hybrid cocoa and are the location of the company's diversification efforts, which have included areca nut (betel nut), papaya and other tropical fruits, and balsa wood. One of these plantations will provide the sight for the management training course.

Processing operations: NGIP now owns the largest cocoa processing facility in PNG. Built at a cost of K1.2 million, this two stage facility has a capacity to handle 2,500 tonnes of dry beans per year. Standby facilities give the company an ability to process 3,500 tonnes through its processing division. About 1,500 tonnes are purchased from smallholders as wet beans, which makes NGIP the largest cocoa buyer in East New Britain.

An emphasis on technological innovation, quality control and marketing: NGIP, utilizing Malaysian expertise, pioneered the commercial introduction of hybrid cocoa seed into PNG. This was a major factor in the rehabilitation and expansion of this highly successful industry.

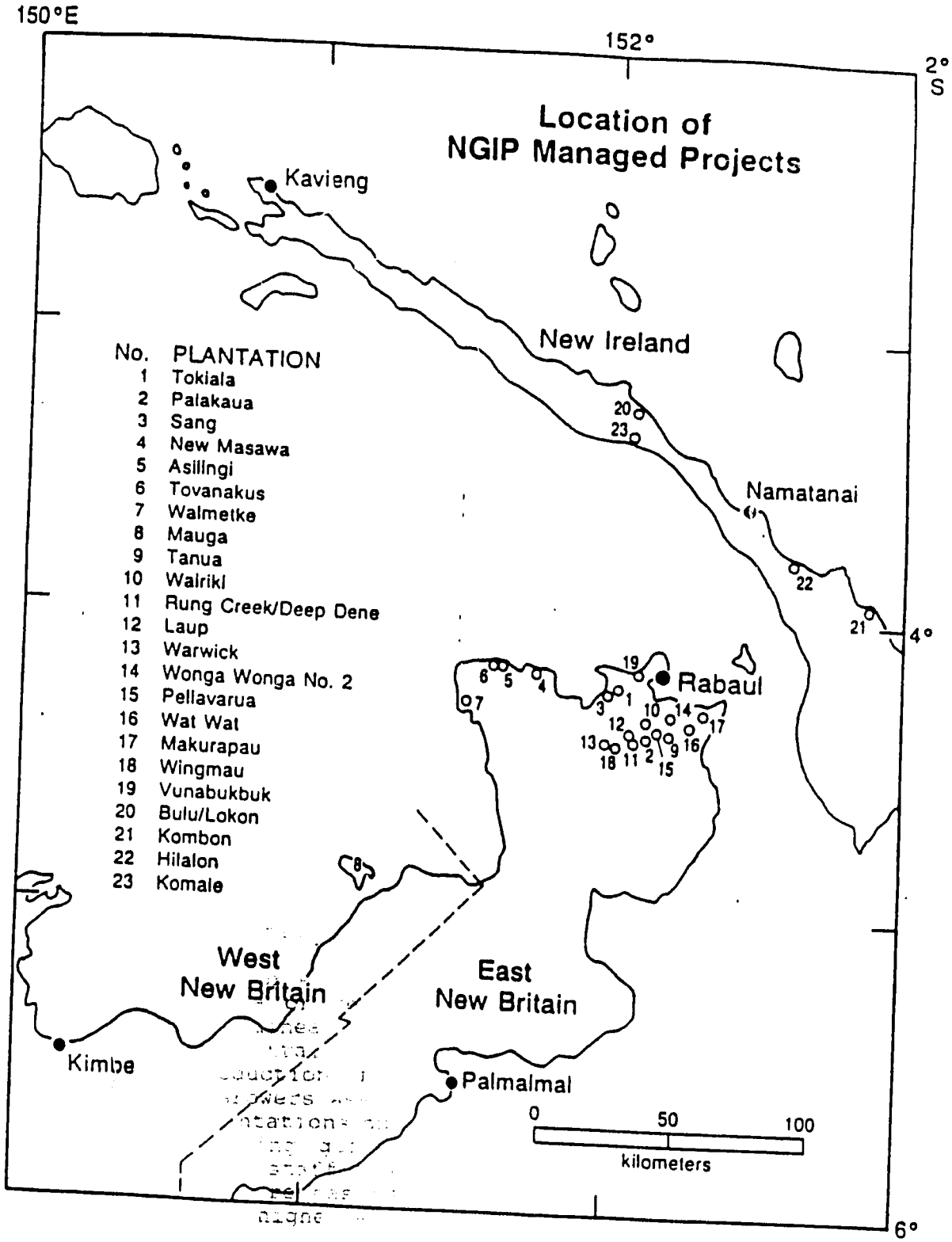

Fig. 2: NGIP map

A mini-laboratory has been established that enables cocoa to be sold on the basis of measurable qualities (this is not done elsewhere in the Pacific). Centralized processing and quality control, together with a successful export marketing joint venture, has enabled NGIP to earn significant price premiums above world market prices (the premiums are currently about $40/tonne). The identifiable quality is such that NGIP cocoa has its own "marks" (brands) and is sold to specific markets. Such premiums are of crucial importance during the current prolonged period of depressed prices.

This has resulted in substantial cost savings to NGIP and to other farmers throughout the province. NGIP's export marketing joint venture Agmark (Pacific) Pty Ltd. currently accounts for 40% of PNG'S cocoa exports (around 12,000 tonnes) and makes it by far the largest cocoa exporter in the region. The creation of Agmark in 1989 enabled the bulk purchase of inputs from Asian sources rather than through the traditional Australian linked importers.

Company Profitability: Throughout the 1980s the company was profitable (See Table 1).

Table 1: NGIP Profitability

Year	Operating Profit/Loss (Kina)
1983	132,500
1984	246,096
1985	84,109
1986	234,490
1988	12,310
1989	29,651
1990	(437,512)

However, a substantial loss was recorded in 1990. This was the result of the combination of historically low world prices for cocoa and copra and the civil war on Bougainville island, which necessitated a one time write-off of NGIP's investments on that island.

NGIP's response in trying to bring operations back to profitability has been the development of an integrated operation that provides inputs more cheaply, produces a high quality uniform product that can command a price premium, and involves a marketing agency devoted to obtaining that premium. There has been a major emphasis on cost control, which has involved seeking less expensive sources of materials (via Agmark), combined with better utilization

of management and labor.

There has also been an expansion of operations to reduce overheads. A 50% share was purchased in another management company, Kina Gillbanks (KG) Ltd. This brought an additional 6,000 ha under management and resulted in an infusion of high- level agricultural expertise. This expertise will be an invaluable resource in the management training project. KG now carries out all plantation management functions.

Perhaps the most significant development for the longer term has been a shift in priority towards the diversification of agricultural operations. The company is currently undertaking a full feasibility of a coconut cream plant utilizing UHT packaging, and the project is expected to proceed. The project was initially identified as a result of A.I.D.'s Coconut Products Study. A.I.D. also funded a study tour of U.S. markets by NGIP's managing director. Pilot alternative crop projects have commenced with papaya and other tropical fruits, areca nut (betelnut), and balsa wood, and other projects are under consideration as well. The establishment of a UHT plant offers a range of realistic options for fruit juice and puree options.

These measures taken together have made the company structurally stronger. Now with the improved medium price prospects for cocoa, the company is expected to return to sustained profitability.

NGIPs longstanding commitment to management training:

Due to lack of investment in PNG's export agriculture during the period 1960-80, there was no available pool of skilled manpower. Management practices had been largely exploitive. As a result NGIP made a conscious effort to seek expertise from Malaysia and to emulate Malaysian management practices.

The company places major emphasis on training. All staff are required to hold a diploma or certificate from an agricultural institution in Papua New Guinea. Senior staff have been sent to Malaysia for six month training periods. NGIP has been instrumental in the introduction of a training scheme established by the Papua New Guinea Growers Association (PNGGA). The company has introduced its own plantations operations manual, which serves as a training as a training guide and reference book. NGIP initially recruited mature staff that had been in the industry. However in recent years there has been a shift in policy toward hiring younger people with higher education levels.

The company's management has indicated an enthusiastic willingness to take a lead role in the development and implementation of a regional commercial management training course

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of the type proposed under CAD. NGIP is regarded by the design team to be the best equipped of any private sector organization in the region to provide such training. It has experienced staff and an operating system required to provide hands-on management training for enterprise managers from the region. The expectation of the company is that this will develop into an ongoing business activity that will constitute an important part of NGIP's diversification program.

East New Britain Province (ENBP): An Appropriate Location for Management Training:

The headquarters of NGIP are located in Rabaul, the capital of the province. ENBP is seen as an ideal location for management training for the following reasons:

i) Conditions and challenges facing ENBP are typical of the countries participating in CAD. The province, while generally more technologically advanced, is typical of Pacific island lowland agricultural conditions. It has a coconut and cocoa economy grappling with the problems of structural change. The stronger technological and managerial base of the province means that it is better placed to play a lead role in addressing the region-wide need to realistically diversify exports. Participants from other Pacific islands will be able to identify with the set of agriculture conditions of ENBP, yet at the same time set their sights at a higher level of technology and management.

ii) A strong research and institutional base. In close proximity and linked by an excellent roading network are the following institutions:

- The Lowlands Agricultural Experimental Station (LAES) at Kerevat. This is the largest lowlands agricultural research station in the South Pacific region and is of international standing. Of particular relevance to the training project is the emphasis in recent years on crop diversification within the context of coconut and cocoa cropping systems. A range of potential export crops are currently under trial, with priority being given to spices, essential oils, and nuts. The LAES Director is an entomologist who places emphasis on biological and cultural control of pests and diseases. It is the view of commercial industry that LAES research is of high

quality and relevant to their needs. It is expected that LAES will be a collaborating institution in the training project. An effective commercial manager must be able to deal with and get the most out of researchers. An important objective of the training project is to familiarize participants with this process.

- Cocoa and Coconut Research Institute (CCRI). This industry funded and directed research institution is located adjacent to LAES with some facilities shared. This is the leading coconut and cocoa research institution in the region, and has an international reputation in areas such as plant breeding. Priority research areas are currently entomology (bio-control), plant pathology (particularly related to black pods), and quality improvement to enhance the marketability of PNG cocoa. The latter is being assisted by an AIDAB funded project, which is an other resource to be drawn on by the training project.

- The Vudal Agricultural College. Vudal was the premier lowland agricultural college in the region and drew its students from throughout the region. However over the last decade its reputation has slipped in the face of funding cuts and lower levels of staff qualifications. The government has recently announced plans to substantially upgrade Vudal. Vudal may offer a valuable resource that could be utilized.

- The Papua New Guinea Growers Association (PNGGA). The Growers Association, which represents coconut and cocoa growers throughout PNG, has its headquarters in Rabaul. The Managing Director of NGIP is the current President. The PNGGA has a strong commitment to training and has recently developed its own on-the-job management training curriculum for its members. It places heavy emphasis on diversification. Discussion with the PNGGA management indicated strong support for the proposed management training project. The participation of the PNGGA will be crucial in curriculum design, course promotion, monitoring and evaluation, and certification. PNGGA has indicated a willingness to participate at all of these levels.

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- The PNG Spice Growers Association. This newly formed group is also headquarted in Rabaul. Since spices represent one of the major export diversification opportunities for the region's coconut and cocoa areas, the active participation of this group would be highly beneficial. Furthermore, ANCO, a large Australian-owned commodity marketing company, is undertaking a number of pilot spice projects in the province. It is proposed that the fourth course to be offered will focus specifically on spices. It is expected that PNGSGA will play a major role in this course.

(iii) The strong support of the provincial government: ENBP's economy is almost entirely based on agriculture, which has been under considerable pressure with the prolonged depression in commodity prices. The provincial government sees the CAD project as a practical way of strengthening that economy by increasing the value of exports. In a broader sense the project contributes to ENBP diversification efforts by "exporting" skills and expertise to the rest of PNG and the South Pacific region.

ANNEX N

CAD AND MARC PROJECTS COORDINATION

There is much scope for coordination of resources between the Commercial Agriculture Development Project and the Market Access and Regional Competitiveness Project on agricultural products seeking market entry or investor interest in North America. While the CAD project will work only on agricultural products gearing them toward any target markets, the MARC project can work on products from any field of production but is focussing only on the North American markets.

Scope of CAD

The CAD project is designed to assist producer-owned agribusinesses to overcome organizational and pre- and post-harvest commercial production problems including quality control, continuity of supply and product marketability leading to higher value exports and the ability to succeed in competitive export markets. Examples of assistance could include private industry restructuring and privatization of parastatals, establishing and achieving export-quality industry standards, establishing export standard quarantine treatment, introducing new technologies, researching commercial problems and opportunities and disseminating commercial production and marketing information to the private sector.

Scope of MARC

For agricultural commodities, the MARC project will assist private sector agribusinesses that demonstrate they can meet the price, quality and continuity of supply required to be successful in competitive export markets. MARC will work with such industry groups or individual enterprises to assist entry of their products into North American markets, their access to North American investor interest for business development or expansion, and packaging & promotion to achieve higher competitive advantage in the marketplace. Examples of assistance could include provision of information on product-specific regulatory, certification, and packaging requirements of North American markets, development of product-specific marketing plans, industry networking to identify market interest, execution of market and niche market exploration, identification and matching of investor interest to South Pacific business opportunities including privatization of government assets.

Nature of Coordination and Cooperation

In the division of labor, the CAD project will provide all pre-harvest assistance, both projects will be involved to a certain degree in post-harvest assistance requirements with CAD focussing on quality control issues such as quarantine treatment and MARC assisting with product presentation and packaging specific to market requirements. MARC will assist with market and investor identification in the North American markets.

Where CAD will be undertaking South Pacific industry-identified research on commercial problems and opportunities through USP Alafua in Western Samoa, MARC can mobilize within US industry short term expertise that can lend industry and market perspective to the research agenda and activities from the North American viewpoint.

Both projects will be able to work on privatization prospects for government-owned agricultural industry properties with MARC also assisting to identify prospective U.S. investor interest when foreign investor participation is sought.

Both projects will assist with securing and disseminating information on regulatory, labeling, packaging and marketing requirements. Since MARC will have a services network located in the U.S., it may be better positioned to secure information. The CAD project with its presence at USP Alafua and its field-based work with agribusiness may more advantageously disseminate and translate the information into practice.

Both projects will also cooperate on assistance to improve the business regulatory and operating environment, working together on regional issues such as freight rate rationalization by product and freight space availability to North American markets.

Management Coordination

Both projects have one long term regional advisor scheduled to be fielded to Suva. The MARC project will have a regional field operations manager and the CAD project will have a regional agribusiness advisor. It is proposed that these advisors may co-locate in office space in the private sector to maximize opportunities for exchange of ideas and resource and activity coordination.

Periodic meetings will be held to promote coordination between the two projects. This may include MARC management participation in CAD quarterly or biannual project reviews and vis versa or wholly separate meetings devoted to project coordination. An exchange of project representatives will be

invited for occasional meetings such as that of the MARC Regional Advisory Council or the CAD/USP Alafua Commercial Research Council once such entities are operational.

The management of both projects will arrange exchange of all information that could be supportive of the activities of the other project or offer scope for activities collaboration.

An example of coordination might include the following:

<u>organic coffee</u>

MARC networks in the U.S. could secure the information needed to inform agribusiness in the South Pacific of U.S. certification requirements for organically grown, harvested and packaged products, advice on acceptable labeling and packaging.

CAD could ensure that such information is broadly disseminated and understood among potential organic coffee producers in the region.

CAD could work with agribusiness and related producer groups on pre- and post- harvest procedures to achieve and maintain internationally recognized organic credentials.

MARC could work with agribusiness to secure key business contacts for market exploration in North America, test market interest in South Pacific organically grown coffees and to secure preliminary niche markets.