

UNCLASSIFIED

AGENCY FOR INTERNATIONAL DEVELOPMENT

Washington, D.C. 20523

PROJECT PAPER

ASIA REGIONAL - 498-0267
SOUTH PACIFIC REGION AGRICULTURAL DEVELOPMENT

AUGUST 1980

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AGENCY FOR INTERNATIONAL DEVELOPMENT
PROJECT DATA SHEET

1. TRANSACTION CODE
 A = Add
 C = Change
 D = Delete

Amendment Number _____

DOCUMENT CODE 3

2. COUNTRY/ENTITY
ASIA REGIONAL

3. PROJECT NUMBER
498-0267

4. BUREAU/OFFICE
ASIA 04

5. PROJECT TITLE (maximum 40 character.)
SOUTH PACIFIC REGION AGRICULTURAL DEVELOPMENT

6. PROJECT ASSISTANCE COMPLETION DATE (PACD)
 MM DD YY
09 | 30 | 85

7. ESTIMATED DATE OF OBLIGATION (Under "B" below, enter 1, 2, 3, or 4)
 A. Initial FY 80 B. Quarter 4 C. Final FY 84

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

A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	1000		1000			5,640
(Grant)	()	()	()	()	()	()
(Loan)	()	()	()	()	()	()
Other U.S.:						
1.						
2.						
Host Regional Institution		725	725		5,049	5,049
Other Donor(s)						
TOTALS		725	1,725	5,640	5,049	10,689

9. SCHEDULE OF AID FUNDING (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) EN	100	010		140		860		5,640	
(2)									
(3)									
(4)									
TOTALS				140		860		5,640	

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)

11. SECONDARY PURPOSE CODE

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

A. Code _____ B. Amount _____

13. PROJECT PURPOSE (maximum 480 characters)

To promote agricultural productivity and further socio-economic development for the rural people of the South Pacific region by strengthening the agricultural research, education, and extension programs of the University of the South Pacific.

14. SCHEDULED EVALUATIONS
 Initial 06 | 82 Final 04 | 85

15. SOURCE/ORIGIN OF GOODS AND SERVICES
 000 941 Local Other (Specify) IB 13

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

N/A

17. APPROVED BY
 Signature: Dennis J. Brumbaugh
 Title: Director - ASIA/OPD
 Date Signed: 07 | 07 | 80

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION
06 | 23 | 80

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PROJECT AUTHORIZATION

ASIA REGIONAL

South Pacific Region
Agriculture Development Project
Project No. 498-0267

1. Pursuant to Section 105 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the South Pacific Region Agricultural Development Project (the "Project") for the University of the South Pacific (the "Grantee") involving planned obligations of an amount not to exceed Five Million Six Hundred Forty Thousand United States Dollars (\$5,640,000) in grant funds over a five-year period from the date of authorization, of which amount the sum of One Hundred and Forty Thousand United States Dollars (\$140,000) was authorized on February 14, 1980, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs for the Project.

2. The Project is designed to expand and strengthen the agricultural sectors of countries in the South Pacific by providing assistance to the agricultural programs of the University of the South Pacific. The University will utilize the grant funds to expand its agricultural research, training and extension projects in collaboration with national governments in the region.

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

4. Source and Origin

Except as A.I.D. may otherwise agree in writing, source and origin of goods and services financed under the grant will be in accordance with the provisions of A.I.D. Handbook 13.

5. Conditions Precedent

a. Prior to any disbursement or to the issuance of any documentation pursuant to which disbursements will be made under the Project Agreement to finance training, the Grantee shall provide evidence in form and substance satisfactory to A.I.D. of a schedule for payments of salary and maintenance to participants and their families together with a list of the rights and duties of each such participant after training has been completed.

b. Prior to any disbursement or the issuance of any documentation pursuant to which disbursement will be made under the Project Agreement to finance the scholarship program, the Grantee shall submit evidence in form and substance satisfactory to A.I.D. of criteria and processes to select scholarship recipients, of financial procedures, and of administrative and operation plans of the scholarship program.

c. Prior to any disbursement or to the issuance of any documentation pursuant to which disbursement will be made under the Project Agreement for construction, the Grantee will furnish construction plans prepared by a qualified engineering firm and approved by A.I.D.

Clearances:

<u>Clearances:</u>	<u>Date</u>	<u>Initials</u>
Frederick W. Schieck, DAA/ASIA	<u>8/12/80</u>	<u>FEW</u>
Dennis J. Brennan, ASIA/PD	<u>8/11/80</u>	<u>DB</u>
Thomas Arndt, ASIA/TR	<u>8/12/80</u>	<u>TA</u>
Robert Halligan, ASIA/DP	<u>8/12/80</u>	<u>RH</u>
Herbert E. Morris, GC/ASIA	<u>8/12/80</u>	<u>HEM</u>
David Rybak, ASIA/ISPA	<u>8/12/80</u>	<u>DR</u>

Signature Frederick W. Schieck, acting
 Assistant Administrator
 Bureau for Asia
August 12, 1980
 Date

GC/Asia:AdeGraffenried:8/12/80

ABBREVIATIONS AND CONVENTIONS

AID	Agency for International Development (also USAID)
EEC	European Economic Community
FAO	Food and Agriculture Organization of the United Nations
IRETA	Institute for Research, Extension and Training in Agriculture (University of the South Pacific)
REE	The Research, Education and Extension System
SOA	School of Agriculture (University of South Pacific)
SPC	South Pacific Commission
SPEC	South Pacific Bureau for Economic Cooperation
SPRDO	South Pacific Regional Development Office (USAID)
UH	University of Hawaii (also UHM)
UNDP	United Nations Development Program
USP	University of the South Pacific

Monetary Units:

All values are U. S. dollar equivalents.

Region of Interest:

The term "South Pacific Region" refers to that area which includes the eleven nations which support the University of the South Pacific.

Project Paper Team:

Dr. K. W. Bridges	University of Hawaii
Dr. L. F. Brosnahan	University of the South Pacific
Ms. M. A. Lyle	USAID/SPRDO
Mr. A. C. Hawkins	USAID/Washington
Dr. J. P. O'Reilly	University of Hawaii
Dr. F. Wendt	University of the South Pacific/SOA
Dr. L. W. Zufema	Cornell University

ASIA REGIONAL BUREAU
SOUTH PACIFIC REGION AGRICULTURAL DEVELOPMENT
PROJECT PAPER

PART I. SUMMARY AND RECOMMENDATIONS

A. RECOMMENDATIONS

1. That a grant be authorized to the University of the South Pacific for a five-year project be approved in the amount of \$5,640,000 to be incrementally authorized as follows:
 - * a. FY 80 - \$990,000
 - b. FY 81 - \$1,102,000
 - c. FY 82 - \$1,175,000
 - d. FY 83 - \$1,196,000
 - e. FY 84 - \$1,177,000
2. That \$1,139,000 of project funds will be provided directly to the University of the South Pacific and the remainder will be obligated by an AID contract with a Title XII institution(s) to finance long and short-term technical assistance, commodities training and support services.

B. SUMMARY PROJECT DESCRIPTION

Goal: Promote agricultural productivity and further socio-economic development for the rural peoples of the South Pacific region.

Purpose: Strengthen the capacity and resources of the University of the South Pacific (USP) in agricultural research, education and extension (REE) to:

- a. Develop and reinforce the human resource skills needed for agriculture programs in the region that emphasize equitable social and economic development.
- b. Test, perfect and disseminate practical, cost effective technologies through a viable outreach system, in collaboration with the respective national institutions which serve their agricultural communities.

The proposed project is intended to support development objectives of the USAID South Pacific Regional Development Office as outlined in the Country Development Strategy Statement (CDSS).

An aggressive, long term commitment to agriculture by the respective island countries is central to the economic development of the South

- * Includes \$140,000 to the University of Hawaii at Manoa for project baseline study, design and project paper preparation (Contract No. AID/ASIA-C-1447 dated March 10, 1980)

Pacific region. As the major industry within the region, agriculture contributes the larger share to gross domestic product, provides the major exports and employs the majority of the labor force. Enlightened national leaders acknowledge that political and economic self-reliance will require increased investments in the agricultural sector. What differs are the strategies offered by the various countries to address agricultural concerns. However, all recognize the need to generate the appropriate resources and skills to serve their agricultural communities and all have made commitments to support USP agricultural initiatives.

The USP has been mandated to promote research, education and training activities in agriculture which are responsive to the well being and needs of the island communities within the South Pacific region. At present, the USP is unable to fulfill many of these vital services. Instructional staff, research activities, and the scope and quality of the agricultural curricula are severely limited and do not provide the necessary resource base to address the many complex development issues of the region's agricultural sector.

The agricultural USP outreach systems are not yet organized to adequately assist enough people involved in agriculture. The USP program must be expanded, if it is to serve and support the diverse needs of the respective national agricultural programs.

As outlined in the Baseline Study on the Research, Education and Extension System of the South Pacific region, which is to be completed by August 1980, a strategy must be developed to strengthen the agricultural program at the University of the South Pacific. It must be able to provide appropriate, cost-effective, technological information to the region which addresses concerns in productivity, income, employment and such "quality of life" elements as nutrition, and home and community improvement in rural areas.

This project is viewed as the first stage of a long-term undertaking, extending up to a 15-year period. It is primarily an institution-building effort which supports the USP's stated commitment to develop and use its research, education and extension capabilities in order to assist the nations of the South Pacific address their agricultural development concerns.

The University of Hawaii (UH) as the lead institution* under the Title XII Collaborative Assistance arrangement will provide appropriate technical assistance with long-term and short-term consultants in selected program areas of agricultural education, extension, crop production, soils, applied agricultural engineering, human resources, nutrition and library development. The UH will also be contracted to manage participant training programs, off-site procurement for supplies and training equipment, and specialized support services.

* Cornell University will be subcontracted by UH to provide technical assistance in agricultural education and extension.

Also under this project, funds will be provided by AID directly to the USP. These resources will be used for the construction of contractor staff housing, regional training, scholarships and program support.

The USP contributions to the project, estimated at \$5,049,000 million for the five-year period includes the existing and planned facilities, staff and administrative personnel, equipment and related operational funds.

The following conditions should exist by the end of the project and indicate an achievement of the project purpose:

1. An agricultural research, education and extension (REE) resource base in place at the University of the South Pacific (USP) School of Agriculture (SOA) and Institute for Research, Extension and Training in Agriculture (IRETA) on the Alafua Campus capable of providing support to the respective island country agricultural development programs.
2. An established academic and in-service training program containing expanded and relevant course offerings, improved curricula and skills development that will provide the region with the necessary human resource base adequate to serve the agriculture sector.
3. An operational system within the USP whereby selected packages of appropriate technology in five major activity areas are available for use throughout the region and which can assist in increasing the productivity, improving the nutritional status and/or in increasing the income of rural inhabitants.
4. A functional outreach program by the USP providing timely, continuing and appropriate dissemination of agricultural information and services to national agricultural institutions, private sector, and community organizations.

C. SUMMARY FINANCIAL PLAN

The total cost of the project consisting of AID and USP inputs is \$10,689,000. AID inputs will provide grant assistance in the amount of \$5,260,000. The USP's contributions in the form of expenses for staff salaries, facilities and equipment will contribute approximately \$5,049,000.

D. CHRONOLOGY OF THE USP PROJECT

In the Spring of 1977, the USAID team of Imus and Gulick compiled a list of development projects which reflected the desires of the governments of the South Pacific region. One of the priority items chosen from this list was support for the development of increased regional agricultural capabilities through the strengthening of the University of the South Pacific's School of Agriculture at Alafua, Western Samoa.

The following Spring, 1978, a USAID-funded team from the University of Hawaii visited the region to develop recommendations for a long-range

institutional development program for USP-SOA. Revisions to their recommendations were made in Spring, 1979, following discussions with AID/W and further regional meetings with USP administrators. These revisions included a reduction in scope of support and increased emphasis on USP-SOA research, education and extension capabilities.

In the fall of 1979, in response to an AID/W request for an expression of interest in the project, the University of Hawaii at Manoa and six other American universities provided statements of qualifications to work in the South Pacific and tentative project directions. The UHM was selected to initiate the design of a Project Paper and Baseline Survey. Work on these activities began in April, 1980.

PART II. OVERVIEW AND PROGRAM DESCRIPTION

A. PROJECT DESCRIPTION

1. Summary Overview

The South Pacific region served by the University of the South Pacific encompasses 11 nations: the Cook Islands, Fiji, Kiribati, Nauru, New Hebrides, Niue, Solomon Islands, Tokelau, Tonga, Tuvalu, and Western Samoa. This is a large region, covering a sea area larger than the United States, with a wide range of environments, social and economic settings (see Annex C).

The 1.3 million people living in this tropical region come from three major ethnic and geographical areas. Such differences are also tied to a complex developmental and political history. As might be expected under such a diverse set of conditions, there is a rich mix of agricultural practices.

Agriculture is of primary importance to the region (except in phosphate rich Nauru). It is the leading employer and the backbone of the economy. In this key role, there is a need to keep agriculture strong and, if possible, provide for its further expansion and diversification. Such goals are difficult to achieve in the region due to many types of problems, such as very limited land areas, quarantine restrictions, poor access to markets and limited and infrequent transportation.

While the economic role of cash-crop agriculture is relatively clear in the region, the importance of subsistence agriculture must also be recognized. These agricultural systems have been developed over long periods and have provided the people of the region with a dependable, high quality diet. The shifting from subsistence systems to mixed subsistence and cash-cropping systems (or in some cases to plantation enterprises) has considerable economic, as well as social and environmental implications.

Developmental programs which are appropriate to the island setting, and have potential for assisting subsistence farmers have some realistic economic promise, can be formulated and implemented. But such solutions are not easily found. Too often, there is insufficient expertise within a single nation to do the comprehensive examination which is required.

Several institutions have been established in the region to assist in such situations. Of these, the University of the South Pacific appears to hold the greatest potential for strengthening so that it may fully participate in agricultural development programs in the region.

2. Current Situation

The University of the South Pacific, through its School of Teaching and Agriculture, and its new Institute for Research, Extension and Training in

Agriculture, is in a key position to assist in the agricultural development of the South Pacific region. It has acquired the facilities and staff necessary to teach a basic curriculum which is relevant to the general agricultural needs of the region. It is now in a position to expand, in a carefully determined way, to take a more active research and outreach role, and more fully realize its mandate as a regional institution.

The facilities of the School of Agriculture are in the process of expansion and the current construction program is expected soon to provide the basic buildings for a regional agricultural program. Only a few specific facilities, such as faculty housing (which is not available in the area), need to be supplied. The current faculty, now numbering 19, must devote most of their attention to teaching because of the demands of the curriculum and numbers of students. The addition of a limited number of faculty, staff and support personnel will allow both the current and new members to increase the breadth of the curriculum in the few areas where there are known deficiencies, take on new research projects which have high regional priority, and begin a systematic outreach program to transfer appropriate agricultural technology into the region. In addition, of course, appropriate support such as regional travel and specific equipment and supplies are also needed for the new activities.

The expanded agricultural program will have lasting benefit when it is integrated into the recurring programming and budgeting of the University of the South Pacific. Before this can happen, it will be necessary to educate and train a cadre of new faculty and staff to serve as replacements for the expatriate faculty who will provide the initial support for the expanded School of Agriculture activities. Over the life of the assistance project, this is expected to lead to increasing USP support for the new activities.

In addition to the on-campus activities, it will be necessary to transfer agricultural skills to the communities of the region. This requires more opportunities for students to attend the School of Agriculture and to make their education even more relevant to their countries' priority needs. The addition of a program of agricultural teacher training is expected to have long-term benefit in the region as the students return to their countries and educate others in contemporary agricultural practices. The inclusion of extension-outreach skills to the curriculum will also have an impact on the region as the graduates make a more effective transfer of information to the farmers. The provision of a small group of Agricultural Outreach Agents into the region will facilitate the full range of programs and serve as a direct link for the two-way flow of information between the campus and the countries.

Five major program areas have been identified as having the highest priority for subject-area expansion or addition. The Agricultural Education and Agricultural Extension areas have already been mentioned.

The Agricultural Engineering area must expand to meet the needs of small scale farm mechanization and assistance to community development activities. This includes the introduction of many basic engineering skills, such as welding, plumbing and carpentry, which are essential to the support of development programs. Additional faculty are required in Crop Production and Soils. This will allow an enhancement of the existing crops varieties, agronomic practices, and transfer of appropriate agrotechnology in the region. These activities will be complemented by the expansion of soils and crops diagnostic services for regional use.

A Nutrition and Food Technology Department does not currently exist at The School of Agriculture and its addition will promote better use of foods and increase the nutritional well being in the region.

The entire REE program requires considerable technical support and several activities have been identified as having high priority. The addition of skills to address social, cultural and economic issues will help insure the other activities are appropriate to the needs of the region. Expansion of the library capabilities will allow other personnel to make use of results obtained on similar problems elsewhere.

Such an approach is based on considerable historical precedent. There is substantial evidence that there is a consistently high rate of return associated with REE Projects, with such rates of return being generally higher in the developing countries as compared to that obtained from REE activities in the developed world. Such patterns of high returns from REE investments have been found to extend across different commodities and countries, and to be higher when based on a decentralized organizational structure.

3. Project Goals and Purposes

This project contributes to the overall sector goal of promoting agricultural productivity and improving the socio-economic well-being of rural inhabitants within the South Pacific region. The process of arriving at this focal point has involved the comprehensive analysis of the economic and environmental factors within the region and the unique social systems which together determine the patterns and quality of life in the South Pacific.

The project will strengthen the University of the South Pacific's commitment to the region in agricultural research, education and extension. It will do this by:

- a. Systematizing and reinforcing the human resource skills needed for agricultural programs in the region which will promote equitable social and economic development, and
- b. Testing, perfecting and disseminating practical, cost effective technologies through a viable outreach system with the respective national institutions into the region.

The following factors were examined in determining this goal:

- a. The current regional agricultural, economic, social and environmental situation,
- b. The USP mandate and its absorptive capacity to effectively serve the region in agriculture, and
- c. The US strength and capacity to address specific developmental issues of the region and the complementarity of these activities with other external donor assistance programs.

This project was designed in response to the analyses and recommendations being developed in the Baseline Study on the REE System within the South Pacific region. In particular, the following elements were considered to have primary importance:

- a. Any enhancements to the REE system must be part of a comprehensive process which seeks integrated solutions to problems of improving agricultural productivity and meeting consumer needs.
- b. A critical mass of trained people is required to develop and maintain an institution which can contribute the inputs necessary to find solutions to agricultural development problems.
- c. The research programs should emphasize applied activities which lead to cost-effective, practical solutions. These must fit the technology appropriate to the region and be compatible with its environmental constraints.
- d. The REE system must have vigorous outreach (extension) activities which make the most effective use of the people available to carry out this function. It is expected that the outreach approach will be refined and fine tuned to meet the variety of conditions found within the different nations.
- e. The utilization of the REE system is most likely if its value can be demonstrated in a relatively short period of time, and it is found to be relevant to the needs of the region.
- f. The US collaborative institutions must demonstrate their technical and administrative competence as they are used to backstop the REE system. The elements described in the End-of-Project Status must have been delivered by a project which was reasonably cost effective and which demonstrated a sensitivity to the social, economic and environmental conditions of the region.

4. Outputs and Inputs

ACTIVITY 1: AGRICULTURAL EXTENSION

Purpose - To strengthen and further develop agricultural extension/communications activities to provide USP with appropriate skills and technology

to support agricultural extension programs in the region and improve the capacity of the island nations' extension programs to serve their rural communities.

This activity addresses the following objectives:

- a. Development and teaching of courses in agricultural extension and basic communications methods and practices for diploma and degree level students.
- b. Development of program linkages through training with the USP Extension (adult and continuing education) Program, including the use of the satellite facilities.
- c. Organization and implementation of workshops, short courses and seminars for in-service training of extension workers within the region in cooperation with subject-matter specialists.
- d. Preparation of technical agricultural information and materials for use by extension workers in the region, by assisting subject matter specialists.
- e. Implementation of a staff development program for sustaining the agricultural extension effort with indigenous personnel.
- f. Creation of a network of in-country agricultural outreach agents who are able to assist in the rapid and efficient implementation of programs.

Activity Outputs

At EOPS, this activity expects to have:

- a. Incorporated up to 2 courses in agricultural extension methods and practices, and 1 course in basic communications in the USP curriculum for diploma and degree level students.
- b. Created a functional program linkage with the overall USP Extension Program, including the use of the satellite facilities.
- c. Implemented up to 12 regional or country in-service training programs, supported by subject matter specialists, for up to 100 agricultural extension workers for up to 700 person days of training.
- d. Prepared and disseminated functional agricultural materials and information from a operational facility at USP to serve agricultural institutions and organizations of the South Pacific region.
- e. Trained at least 1 indigenous extension person who may be placed at USP for continuing the programs in agricultural extension/communications.
- f. Established a network of up to 8 in-country agricultural outreach agents.

Activity Inputs (US)

a. Technical Assistance

24 person months (long term) and 18 person months (short term) of professional assistance to USP in developing and strengthening their agricultural extension/communications skills and capacity for in-house programs and services to the region. Tasks will be directed to staff development, training programs, and information and dissemination services that are coherently interlinked with the agricultural research and education efforts of USP. 336 person months of local hire in up to 8 countries to implement the network of agricultural outreach agents and backup secretarial/clerical support. Tasks will focus on the movement of programs developed at USP into the region and the back transfer of information to USP to assist in program development.

US Contribution for Technical Assistance

US \$ 516,500

b. Training

48 person months of U.S. training at post-Bachelor degree level for 2 or more persons as part of staff development for extension at USP. Funds for up to 21 regional or in-country in-service training programs for up to 100 extension workers under Project auspices.

US Contribution for Training

US \$ 136,800

c. Technical Supplies and Equipment

All general purpose extension, training and demonstration equipment in this project will be coordinated by this activity, including most of the materials required by the Agricultural Education effort and the extension needs in the commodity areas such as crops, soils, nutrition and agricultural engineering.

Commodities include: specialized reference/teaching texts; printed instructional/demonstration materials; instructional visual aids; projects/slides/cassettes/recorders/tapes/screens/speakers; cameras/related photography equipment/supplies; support equipment (file/security equipment, desks); printing equipment for field seminars, regional training, off campus and special programs.

US Contribution for Supplies and Equipment

US \$ 55,000

ACTIVITY 2: AGRICULTURAL EDUCATION

Purpose - To develop and establish new teacher education programs at USP which will reinforce and expand capabilities of vocational agriculture in the public/private schools and continuing education activities of the region.

This activity addresses the following objectives:

- a. Development of a curriculum for diploma level education and short term training in agricultural education.
- b. Introduction and teaching of agricultural education courses which will be included in the general agriculture curriculum.
- c. Preparation of curricula and teaching aids for use in vocational agricultural courses at public/private schools and continuing education programs.
- d. Development of an in-service training course for use in countries throughout the region to upgrade existing agriculture teaching.
- e. Implementation of staff development plans and programs for sustaining this activity with indigenous personnel.

Activity Outputs

At EOPS, this activity expects to have:

- a. A functional, diploma-level agricultural education program at USP providing up to 20 student graduates per year.
- b. Incorporated up to three specialized agricultural education courses in the diploma program.
- c. Prepared up to 6 manuals (guidelines) with appropriate teaching aids for use in vocational agricultural courses at public/private schools and continuing education programs.
- d. Developed a functional, in-service teacher training course which is offered up to 2 times each year for 30-40 vocational agriculture teachers from region.
- e. Trained a teaching staff of up to 3 indigenous professionals through appropriate programs in the USP countries of the region.

Activity Inputs (US)

- a. Technical Assistance

48 person months (long-term) and 6 person months (short-term) to provide professional assistance to USP in developing teacher education programs for diploma level education and continuing education.

tion activities within the region under USP auspices. Tasks will be directed to curriculum development and implementation, developing teaching aids, preparing instruction manuals, training counterpart staff and organizing and implementing regional continuing education programs in vocational agriculture through workshops, conferences and short courses.

US Contribution for Technical Assistance

US \$ 387,100

b. Training

48 person months of US training at post-Bachelor degree level for 2 or more persons as part of staff development in agricultural education at USP and provision of funds for approximately 8-11 workshops/in-service training programs for vocational education teachers in the region during the life of the project for approximately 120-125 teachers.

US Contributing for Training

US \$ 121,800

c. Technical Supplies and Equipment

Demonstration reference/text books, visual aids, projectors, and other media and related equipment needed to promote the formal and non-formal education programs. Those items which can be shared by several activities are listed under the extension activity.

US Contribution for Supplies and Equipment

US \$ 8,000

ACTIVITY 3: AGRICULTURAL ENGINEERING

Purpose - To strengthen and reinforce the applied agricultural engineering programs at USP and develop skills in the outreach programs whereby appropriate cost effective technologies based on basic agricultural engineering principles can be used in rural communities throughout the region.

This activity addresses the following objectives:

- a. Development of new courses and reinforcement in existing courses in applied agricultural engineering at the diploma level.
- b. Incorporation of basic laboratory/vocational instruction in engineering and manual skills for such areas as mechanics, carpentry, metal work, welding, electrical skills, and plumbing.
- c. Development of program linkages with which the vocational agricultural engineering skills are provided to outreach workers in formal instruction or through workshops and in-service training programs.

- d. Adaptation of basic technologies using agricultural engineering skills to assist extension workers with problems on farms and in the rural communities.
- e. Establishment of cooperative arrangements with the agricultural disciplines at USP to provide technical services and maintenance for applied research and demonstration programs.

Activity Outputs

At EOPS, this activity expects to have:

- a. Instituted up to 3 new agricultural engineering courses for diploma and degree programs at USP and enhanced the workshop/classroom curriculum in up to 2 existing courses.
- b. Introduced instructional programs for up to 6 new areas such as carpentry, mechanics, metal work, welding, electrical skills and plumbing.
- c. Developed a functional program linkage between agricultural engineering and the agricultural education and extension training and outreach activities and participated in up to 10 regional or in-country workshops, short courses or seminars that involve agricultural engineering interventions.
- d. Applied technologies which have been developed for farms and homes as demonstrations in 3 areas such as structural, mechanization, processing, storage and shop engineering.
- e. Produced an operational support system for other USP disciplines to assist in equipment adaptation, use, and maintenance.

Activity Inputs (US)

- a. Technical Assistance

24 person months (long term) and 18 person months (short term) to provide professional assistance to USP in developing agricultural engineering programs for diploma and degree level students as well as for USP outreach programs to the region. Tasks will be directed to curricula development and implementation, preparation and implementation of workshops and short courses for regional and country activities, training of counterpart staff and the conduct and field testing of appropriate technologies.

US Contribution for Technical Assistance

US \$ 298,500

- b. Training

24 person months of US training at post Bachelor degree level for one or more persons as part of USP staff development in agricultural engineering and provision of funds for approximately 6-10

workshops or in-service training programs to the region where emphasis is on applied programs of agricultural engineering as it links to the outreach activities.

US Contribution for Training

US \$ 68,400

c. Technical Supplies and Equipment

Subject reference and teaching texts (how-to books; visual aids/sets; teaching, laboratory, and shop demonstration equipment (carpentry, mechanical, metal work, welding, electrical, plumbing); professional surveying equipment; safety equipment; desk/chair/security cabinets.

US Contribution for Supplies and Equipment

US \$ 54,000

ACTIVITY 4: CROP PRODUCTION AND SOILS

Purpose - To strengthen and further develop programs at USP and in the region which will provide better crop varieties, improved agronomic practices, more adequate programs of agrotechnology transfer and the capability to do laboratory analyses of soils and crops for diagnostic purposes.

This activity addresses the following objectives:

- a. Development of new units for introduction into the curriculum of diploma and degree level students.
- b. Expansion of field experiments on crops which hold promise for increasing agricultural productivity, reducing the need for chemical inputs, improving the availability of nutritious foods, and substitutes for imported commodities.
- c. Preparation of technical agricultural information and diagnostic services on agronomic practices which may be used in outreach programs and the organization of workshops, short courses and seminars for in-service training of extension workers.
- d. Establishment of updated baseline information for the region on agricultural environments, crops, productivity, and agronomic practices and the introduction of systematic planning programs which will enhance the sharing of appropriate agricultural technologies for small scale farming systems.
- e. Expansion of existing soil and crop analysis capabilities to provide diagnostic services to the region.
- f. Implementation of staff development plans and programs for sustaining this activity with indigenous personnel.

Activity Outputs

At EOPS, this activity expects to have:

- a. Incorporated new materials into the existing crop and soils curricula.
- b. Selected and tested up to 10 crop varieties for use in the region and distributed propagative materials for regional evaluation.
- c. Instituted a functional program linkage between the crop production and soils and the agricultural education and extension training and outreach activities and participated in up to 10 regional or in-country in-service training programs and seminars.
- d. Produced up to 2 review reports on the status of agriculture and research activities in the region which may function as the basis of setting research and outreach priorities.
- e. Utilized a systematic planning process to evaluate the bottle-necks to achieving production and utilization goals in up to 3 commodities.
- f. Established an operational facility which is providing regular diagnostic advice to the region on soils and crop problems.
- g. Trained at least 3 indigenous personnel in crop production and soils who may be placed at USP.

Activity Inputs

a. Technical Assistance

72 person month (long term) and 27 person months (short term) of professional assistance to USP in developing and strengthening their programs in crop production and soils. Tasks will be directed at curriculum enhancement, field experimentation, distributing of new crop materials and information on agronomic practices in the region, systematizing the agricultural research activities, and providing diagnostic soils and crop services.

US Contribution for Technical Assistance

US \$ 707,500

b. Training

24 person months of US training at post-Bachelor degree level for 3 or more persons as part of staff development in crop production and soils at USP and provision of funds for approximately 10 workshops or seminars for regional and in-country agricultural outreach and researcher personnel.

US Contribution for Training

US \$ 235,200

c. Technical Supplies and Equipment

Subject reference and teaching texts; audio-visual materials related to instruction; classroom/laboratory supplies (chemicals, seeds, fertilizers); field equipment and supplies including hand tractors with implements, seed driers; cleaners, germinators, plant propagation tools, field research accessories and maintenance supplies; laboratory equipment and supplies including soil core samplers, vacuum pump, pressure-plate extractors, atomic absorption spectrophotometer, Wylie mill, drying oven, muffle furnace, conductivity meter, air compressor, balance, centrifuge, sieves, acid hood, and associated supplies.

US Contribution for Supplies and Equipment

US \$ 75,000

ACTIVITY 5: NUTRITION AND FOOD TECHNOLOGY

Purpose - To introduce and develop nutrition and food technology instruction, research and practical outreach programs at USP which will provide appropriate skills for improving the utilization of the food resources in the region.

This activity addresses the following objectives:

- a. Development and teaching of courses in nutrition, food sanitation, and food technology for diploma level students.
- b. Assist in the development of improved food processing activities appropriate to families, small farmers, food processing and service entrepreneurs, and local industries intent on increasing import substitution and appropriate export commodities.
- c. Implementation of a program of staff development so that USP may assume the training and appropriate research to address food and nutrition problems of the South Pacific countries.
- d. Introduction of a system which will help identify human resources capabilities for outreach activities, assess bottlenecks in the delivery of nutritional information and provide in-service training needs.

Activity Outputs

At EOPS, this activity expects to have:

- a. An operational nutrition/food technology unit at USP with appropriate laboratory and instructional programs to support training at the diploma level and capable of providing training to meet the subject area needs within the region.
- b. Trained a core of up to 2 indigenous nutritionists and food technologists for placement at USP.

- c. Developed up to 3 courses for inclusion in the USP curriculum in the areas of nutrition, food sanitation, food technology and preservation.
- d. Created a functional program linkage to the USP Agricultural Extension program.
- e. Completed up to 8 extension in-service workshops or short courses in nutrition or food technology areas for outreach workers in the region.

Activity Inputs

a. Technical Assistance

36 person months of professional assistance to USP in developing and strengthening nutrition and food technology programs on-campus and to the region. Tasks will be directed to staff development, training program, curricula development, appropriate applied research in selected regional needs, and resource skills in planning and implementing training programs to the region through workshops and short courses.

US Contribution for Technical Assistance

US \$ 268,100

b. Training

24 person months of US training for observation type and/or post Bachelor degree level for one or more persons as part of USP staff development in nutrition and food technology. Provision of funds for approximately 4-8 workshops or in-service training programs to the region where nutrition and/or food technology are major elements in these outreach efforts.

US Contribution for Training

US \$ 75,900

c. Technical Supplies and Equipment

Subject reference and teaching texts; visual aids; classroom/laboratory supplies (cooking ware, utensils); laboratory equipment including analytical balances, platform balances, refrigerator/freezer, drying oven, distilled water still/purifier, water bath incubator, refrigerated centrifuge (micro & regular) spectrophotometer, pH meter, florimeter, security cabinets, vacuum pump, and spare parts and expendable supplies to above.

US Contribution for Supplies and Equipment

US \$ 42,000

ACTIVITY 6: LIBRARY SERVICES/HUMAN RESOURCES DEVELOPMENT

Purpose - To enhance the institutionalization of the agricultural REE activities at USP by developing appropriate in-house skills to address the social, cultural, and economic issues and concerns within the region as they relate to agricultural development and strengthening the agricultural library facilities and services.

This activity addresses the following objectives:

- a. Development of programs at USP to perform needs assessments, impact analyses, development evaluations, and socio-economic research relative to agricultural REE.
- b. Strengthen the applied research/outreach programs and related training activities with appropriate socio-economic inputs.
- c. Development of an increased awareness of the role of women in agriculture and the initiation of programs to address the special needs of women farmers and entrepreneurs.
- d. Expansion of library resources, response capabilities, and information retrieval and dissemination services in agriculture.

Activity Outputs

At EOPS, this activity expects to have:

- a. A functional capability within USP to address the relevant socio-economic elements relative to agricultural REE.
- b. An adequate agricultural library with a trained staff capable of providing relevant resources and services appropriate to the professional staff, students and local, national and regional institutions.

Activity Inputs

- a. Technical Assistance

12 person months of professional assistance in human resource development at USP. Tasks will be directed to staff development, rendering inputs to training and outreach activities and, where appropriate, managing, conducting and supporting assessments, analyses, and evaluations and addressing WID and other socio-economic concerns. Project funds in the amount of \$50,000 will be available during life of project for these socio-economic studies and assessments.

21 person months of professional assistance to the development of library resources and services. Tasks include development training for staff, improving abstracting and search capabilities, expanding library agricultural resources and document delivery

services and systematizing library processes to professional standards.

US Contribution for Technical Assistance

US \$ 300,000

b. Training

24 person months of US training for observation type and/or post Bachelor degree level for one or more persons as part of USP staff development in library management/services.

US Contribution to Training

US \$ 45,900

c. Technical Supplies and Equipment

Books/periodicals; cabinets, shelves, trolleys, book storage and display systems; typewriters; micro film reader/printer, copier; library supplies, calculators and audio/visual aids (e.g., overhead projector, screen and related accessories).

US Contribution for Supplies & Equipment

US \$ 90,000

SCHOLARSHIPS

Provision of 49.5 academic years of student support. This will allow an average of one student from each of the eleven South Pacific nations to send one student for a full (4.5 year) term.

US Contribution

US \$336,000

SUPPORT SERVICES

1. Construction of Housing (6 units) at USP for U.S. Title XII Contract which provide 216 person months for long term professionals and 90 person months of short term professional services.

US Contribution

US \$360,000

2. Vehicles (3) to support on-site project staff functional needs.

US Contribution

US \$30,000

B. RELATIONSHIP TO USAID AND OTHER DONOR ACTIVITIES

The USAID/SPRDO activities in the South Pacific region (Table 2) are in support of development programs in five of the region's countries. These programs are managed by US universities, Private Voluntary Organizations and the Peace Corps. Most include some element of community or agricultural development. Where linkages are expected to be beneficial, either for technical backstopping or for resource and information sharing, coordination will be done jointly by the USP, the USAID/SPRDO and the US university contractor.

USP has several existing and planned programs with bilateral and multi-lateral donors as part of its overall program of strengthening the agricultural activities of the region.

The Government of New Zealand is furnishing approximately \$2 million in capital development projects for facilities improvement at the School of Agriculture including: administration building (completed), greenhouses, kitchen and dining facilities, lecture rooms and a lecture theatre, student dormitory and student services facility, scientific teaching blocks consisting of lecture rooms and laboratories for the biological sciences, and an expanded library. All activities are either recently completed or in process of construction with the entire program to be finished in early 1981.

The Government of West Germany has announced its intention of providing approximately \$280,000 to upgrade the crop protection programs at USP with technical assistance, training, and applied research activities in vertebrate and insect pests in tropical environments. Informal collaboration is now underway between this program and the Crop Protection Center at the University of the Philippines at Los Banos. This activity compliments the EEC and UNDP financed (\$11,000) research activities concerning the biological control of the coconut stick insect, cluster caterpillar, and trunk weevil pests.

The EEC has provided approximately \$1 million to USP regional agricultural programs which will include the development of a staff training center and applied agricultural research programs which are complimentary to the USAID project.

The UNDP has approved a project for root crops development to be located at the School of Agriculture (5 years with a UNDP contribution of \$1.2 million). Emphasis will be on applied production research on the root crops which are traditional staples of the South Pacific peoples. Resources for this project will provide technical assistance, training and limited amounts of equipment to support the regional research activities and related extension work. The USP objective is to integrate this activity within its REL structure to insure that it will develop in collaboration with the USAID project.

The Government of the Netherlands provides support for the School of Agriculture's animal sciences programs by the secondment of a faculty member to the Alafua Campus. The Government's of Australia and New Zealand also provide salary supplementation.

TABLE 2

USAID/SPRDO Operational Programs and Other Grants (\$1000)

	1977	1978	1979
Foundation for the Peoples of the South Pacific (Tonga, W. Samoa, and Solomon Is.)		700.0	619.5
YMCA (Fiji and W. Samoa)	33.2		100.0
Save the Children Foundation (Tuvalu)			165.0
USP - Satellite Community Project		475.0	230.0
SPC - Skipjack Tuna Survey			450.0
UH - Alafua Survey	47.0		
Cornell University - Seismic Network	100.0		
Accelerated Impact Program (Tonga, Solomon Is., Tuvalu, W. Samoa and Fiji)			150.0
TOTAL	180.2	1,175.0	1,714.5

PART III. PROJECT ANALYSES

A. SUMMARY SOCIAL, ECONOMIC AND ENVIRONMENTAL ANALYSIS

Agricultural development programs generally induce a combination of social, economic and environmental changes as they provide their intended economic benefits. This is expected to be the case in the South Pacific region, although the changes are not easily predicted or simply described.

The South Pacific region can be divided into large areas with some common social patterns: the Eastern Pacific (or Polynesia), the Western Pacific (or Melanesia) and the isolated nations in the Northwest Pacific (or Micronesia). Even within these areas, however, considerable differences often separate the countries. Yet there is one common heritage: most people still live and work on isolated islands in small traditional villages located in rural areas with subsistence farming and minimal cash cropping as their primary means of livelihood.

The social systems throughout the region are rapidly changing with the traditional organization finding it difficult to achieve new economic and socio-political goals. This has implications for agriculture as farmers try to meet the requirements of "Western" agricultural systems and this conflicts with traditional means of labor allocation. This conflict extends into competing demands for time between the needs of modern agriculture for regular and long inputs and the social demands of family, church and group tasks. Often an accommodation to these traditional patterns is required.

There has been a shifting away from the rural village to individual homesteads and to urban centers as more emphasis is given to a monetary economy. In the extreme case, youths from several countries are "exported" to foreign countries as an effective avenue for social advancement and for the remittances returned to the family. The status of agriculture as a profession is low in the region and this produces a similar result, with many young people leaving the village and seeking employment in the urban areas. This migration is part of a general trend, along with increasing education, which attempts to improve an individual's status, wealth and power while being free from the hard physical labor and poor economic return derived from traditional farming.

Women play an important role in agriculture throughout the region. Their activities vary between cultures, but are more often associated with subsistence farming. The introduction of benefits from agricultural development does not reach women as readily as men. It is expected that there will be a more equitable sharing in the benefits of developmental programs as we better understand the women's contributions to agriculture.

The economies of the South Pacific countries have grown considerably over the past few decades. Yet it is not clear how such growth can be sustained, primarily due to the limitation imposed by the natural and human resources.

The economic characteristics of the countries vary throughout the region. In total, the export trade (in 1977) was \$312 million, with agriculture amounting to 57% of this value. Two commodities dominate this trade: sugar provides 62% and coconuts 28% of the \$178 million total agricultural exports. Three other commodities (cocoa, palm oil and ginger) account for almost all of the remainder. Most of the South Pacific nations are dependent on one or two major crops, with most being tied to coconuts (with a total value of \$32 million) and its fluctuating market prices.

Outside aid is important in the region as it provides specific developmental assistance and allows many countries to balance their budgets. Without this assistance, the 136% greater value of the imports than exports would cause serious problems. This varies in the region from annual per capita food import of \$22 in the Solomon Islands to \$259 in Nauru. In the aggregate, food comprises 24% of the total imports.

Strengthening agriculture is an important goal throughout the region both because it is the primary employer (in many countries) and its dominate role in trade.

Unemployment is a problem in many of the urban areas. In contrast, there are some labor shortages in the rural areas. A large part of the labor force may be involved in subsistence agriculture, but this is not adequately reflected in the available statistics.

With the combination of the current movement away from agriculture as a profession and the limited availability of labor in some regions, it is difficult to imagine that major new revenues could be obtained from agricultural development programs. Yet such programs are likely to have important local effects if they are properly integrated into the social and economic fabric of the rural communities and combine an appropriate mix of cash-cropping and subsistence farming support. If the rate at which traditional agriculture is being replaced by a dependence on imported food is slowed, it could have a significant role in determining the future of many of the countries of the region, especially those which are relatively small and isolated.

The environmental conditions and constraints of the South Pacific region parallel those of the social and economic systems, with tremendous variety existing across this region. The small geographic scale of islands is perhaps their dominant environmental characteristic, followed by the tropical conditions and isolation of the island groups.

The changes which are already occurring in the agricultural systems, as they move more to cash-cropping, is cause for some concern. If these shifts occur slowly enough and they do not include large-scale land use conversions, they will probably result in only minimal environmental changes. This is the sort of pattern which is anticipated since social and economic conditions are not expected to promote or allow a major shift from current patterns and practices.

With the addition of agricultural development programs which are aimed at the village level, there are a number of positive changes which can be introduced to the agricultural practices which will show environmental benefits. These include soil and water conservation measures, the use of fewer chemical products (such as pesticides and fertilizers), and the use of better adapted crop varieties.

B. TECHNICAL AND ADMINISTRATIVE ANALYSIS

Assessments of the technical feasibility of the project were based on preliminary findings obtained during the development of the Baseline Study. This included on-site examinations of the USP system, discussions with government ministries, examination of other donor programs, as well as sector reports such as the substantive ADB document "South Pacific Agricultural Survey 1979." While interpretations and perceptions vary somewhat from finding to finding, basic constraints of the agricultural sector appear to center on the following four areas:

1. Human and Natural Resource Base

- a. Human - employment, interest groups, administrative structure, planning/managerial technical skills and maintenance, communications.
- b. Natural Resource - land/soil/water (fragility, suitability, amount), ecology and environment, production systems, energy sources.

2. Indigenous Social Systems

Population, migration, small scale societies, land tenure, labor, dietary, values/beliefs, community/individuality relationships.

3. Geographic Realities

Location, size, isolation, remoteness, vulnerabilities (natural/economic/social), archipelagic nature, transport/trade/market.

4. Input Overdependence

Imported managerial/technical/physical needs, commodity limitations for export, political/economic security needs.

In the process of identifying these problems and constraints within the agricultural sector of the South Pacific region as they relate to development, the determination was made that AID resources could be used most effectively in promoting and reinforcing the agricultural efforts of the University of the South Pacific.

The eleven Island nations in the region see the USP as more than a teaching institution. It is a major resource base in the region that

is development oriented and embodies the reality of regionalism. While it is acknowledged that the USP School of Agriculture is moderately capable of advancing agricultural development in Western Samoa, it is currently ill-equipped for the task of responding to the needs of the entire region, despite its regional mandate.

In order to ascertain the feasibility of a REE effort with USP, AID contracted the University of Hawaii to develop the Baseline Study and, through a design team, determine how the development of the School of Agriculture can be upgraded, allowing USP to stimulate development of the agricultural sector in the region. From the AID standpoint, this activity is ideally suited to the Title XII legislation "Famine Prevention and Freedom from Hunger" in the International Development and Food Assistance Act of 1975. A major part of the Title XII mandate is to promote effective institutional structure to provide research, educational and extension services to the agricultural sector for the evolution of a highly productive agricultural sector within countries and/or regions in collaboration with a U.S. land-grant or agriculturally-related institution.

The University of Hawaii as the Title XII lead university for this project has the facilities, services, equipment and technical skills to meet the specialized requirements to collaborate with the USP. Throughout its history, the University of Hawaii at Manoa has emphasized its distinctive geographical and cultural setting. It has generated interest in oceanography, tropical environments, special problems of island communities and, due to its proximity, interest in Asia and the Pacific Islands. A total of 52 departments and programs are represented in their community of Pacific scholars which focus their instructional, research and extension efforts on Pacific Island subjects.

Resources with a Pacific focus at the campus which can be made available to the Project include the Pacific Islands Program, the Sea Grant Program, the East-West Center, the Pacific Biomedical Research Center, the Water Resources Research Center and the College of Tropical Agriculture and Human Resources (CTAHR).

There are six academic programs which focus on Pacific Islands and which will be used extensively in the project for participant training activities. Also available as needed to the project will be the PEACESAT (Satellite) facilities, resources of the University of Hawaii Press, and the Foreign Language Laboratories.

The University of Hawaii will, as feasible, utilize the resources provided in the AID supported projects on Benchmark Soils and Biological Nitrogen Fixation by Tropical Agricultural Legumes (NITAL).

Cornell University, as a supporting U.S. institution in the project, has a long history of institution building projects (such as in the Philippines) directed towards research, education and extension, and has considerable capability with its in-house professional staff and information resources. Special areas of outstanding expertise include agricultural education and extension and tropical soils.

This project will not, at this time, completely address all the constraints described earlier in this section. The University of Hawaii in collaboration with USP officials, AID representatives, and its US University collaborators, believe that this project is a functional first step to address regional and country agricultural needs. It will begin to seek solutions to short-term and unexpected problems, long term and enduring problems, and provide services essential to the acceptable development of rural economic and social processes. Basic findings have indicated that:

- a. The institutional linkages and administrative arrangements within the USP system are appropriate to the REE of this project.
- b. The USP mandate to serve as a regional institutional has been legitimized by the respective island nations.
- c. Strengthening of the USP School of Agriculture and its outreach capabilities is a USP commitment as evidenced by the performance to date of the integration of the School into the overall USP family.
- d. Other donor commitments for agricultural development programs within USP are both continuing and expanding.
- e. The USP plan of integrating research, education and extension under one coherent system and providing the appropriate skills and technologies for the region is feasible, realistic, and complementary to other donor resources to the agricultural sector.
- f. The selection of small scale, cost effective and relevant technologies to be addressed during the life of this project is within the absorptive capacity of the USP and its planned REE effort.
- g. The levels of training and kinds of resource skills to be developed in this project are realistic to region's needs and can strengthen USP credibility with the region in the delivery of quality services.
- h. The initiatives taken in this project are attuned to the development constraints and the vulnerability of small scale economies of the South Pacific region.
- i. The project elements are appropriate first steps in the long range regional agricultural development program of the USP.
- j. The project is an excellent Title XII collaborative activity for the involvement of U.S. University(ies) with proven REE capabilities.

C. FINANCIAL ANALYSIS AND PLAN

The financial analysis is one of a non-revenue producing project. Detailed budget summaries are presented in Financial Plan/Budget Tables (pages 30-34).

Capital outlays are time-phased to meet the short and long term objectives. During the first two years of project operation, major capital outlays will be primarily for housing construction, purchases of equipment and supplies, limited training programs, expenses related to the start up operations and recruitment and assignment of many of the long-term advisors provided by the US contracting institution. During the final three years of the project, major procurement outlays will be directed towards the training programs and the operational aspects of the REE system, particularly as they are related to outreach and curriculum development. Significant outlays will continue for technical assistance needs, particularly in the third and fourth years. However, most procurement activities will be phased down by the end of the third year.

A major consideration in project design is the quality, nature and timing of the technical assistance needs and outreach training programs. Due to the vast distances between the island nations, travel costs are exceptionally high since international rates prevail. Therefore to address this constraint, it was important to prudently plan training programs at the regional and national level. Both the contractor and USP will be challenged to develop training programs that are multi-faceted in nature and appropriate to the largest possible constituency, and arrange travel on a cost-effective basis. Further, to keep a proper balance between contractor personnel and USP staff, recruitment of personnel will be heavily dependent on those with multi-disciplinary skills.

Projected operational expenses for the US contractor are based on SPRDO and USP discussions and negotiations. Operation and maintenance of all equipment procured under this project will be the responsibility of the University of the South Pacific during the entire life of this project.

The USP financial contribution to this project is estimated at \$5,049,000 over the 5 years. This includes the costs of the maintenance of existing and new facilities, including those being planned or under construction. Office space and furnishings for contractor personnel, and secretarial/administrative services also are included as part of the USP commitment.

It is noted that USP has made considerable progress in integrating the School of Agriculture into their overall financial management system since 1977 despite the unusual constraints such as distance, poor communications and differing fiscal procedures. Further, few problems have surfaced in the USP role of absorbing many of the expenses that were previously financed by the Western Samoa Agriculture Department especially those related to support staff and maintenance of facilities.

Based on the USP performance to date and the firm financial commitment of its other donors and the regional nations, it is concluded that financial resources will be adequate to support this project and will be able to absorb the financial responsibility as stated in the EOPS.

PART IV. IMPLEMENTATION ARRANGEMENTS

A. ADMINISTRATIVE ARRANGEMENTS

This AID project of assistance to the USP will be directed from the Office of the Vice Chancellor of the University of the South Pacific. Responsibility for the location management of the project will be delegated to the Dean of the Alafua Campus.

The Dean of the Alafua Campus of USP and the Contract Representative of the US Collaborative Institution(s) both have contractual responsibilities to AID for separate aspects of the project. Together, however, they share collaboratively responsibility for the on-site management of the project. This will be done through regular meetings which will be held between these two administrators to monitor and assess the project progress and make necessary implementation adjustments and plans.

The Dean will assign responsibility for the routine operations of the project to the Director of USP's Institute of Research, Extension and Training in Agriculture (IRETA) who in turn will collaborate with the Head of School with regard to the project's assistance to the teaching program of the School.

The members of the team of technical experts provided by the US Collaborative Institution(s) will be required to satisfy the normal appointment procedures of USP; they will be appointed to project fellowships in IRETA and will be responsible to the Director of IRETA for the satisfactory performance of their duties.

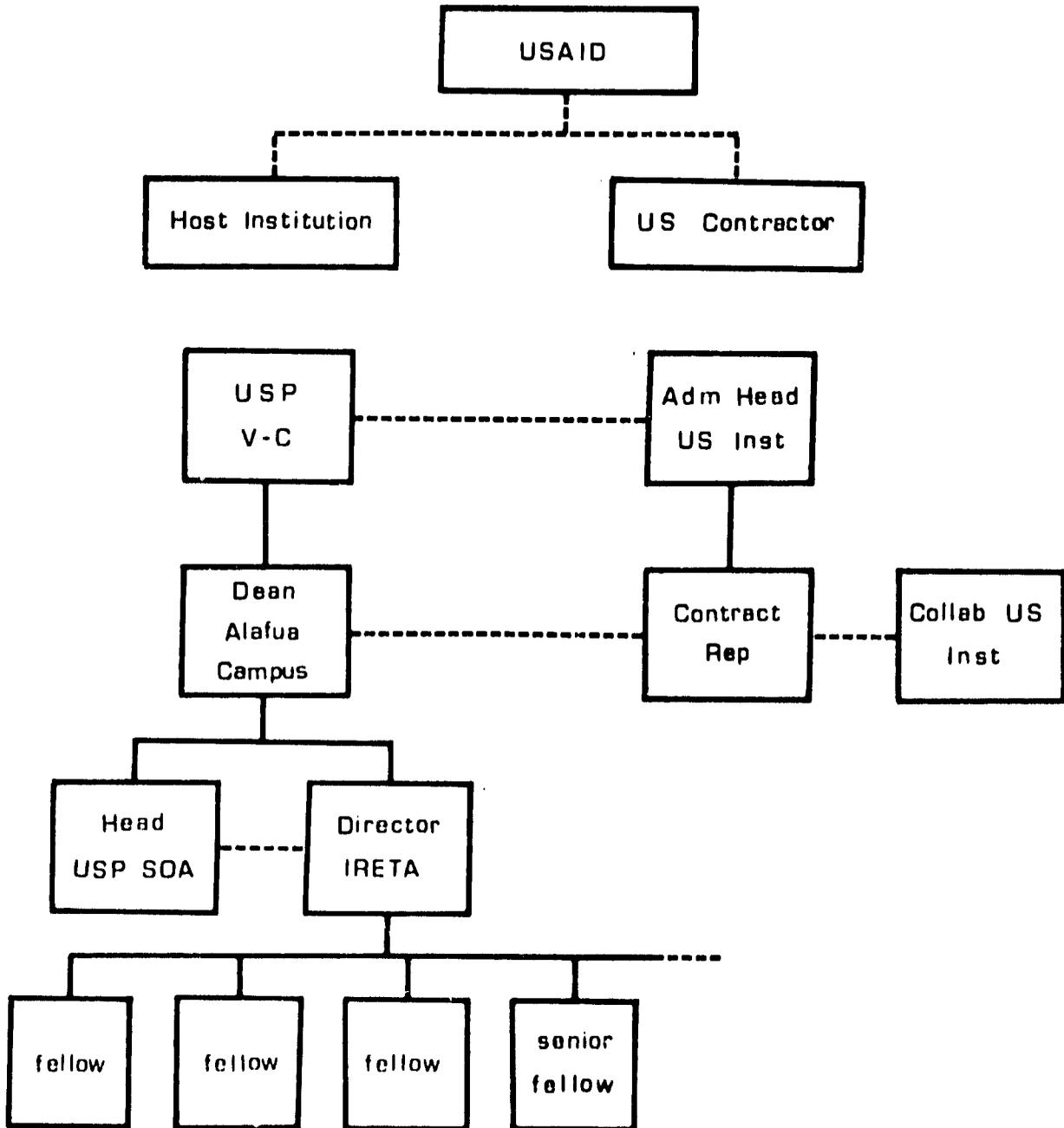
The members of the team will be employed under general terms and conditions specified by the US Collaborative Institutions but while on location with the project will be under the location management of the project in respect of working conditions, teaching, research, and extension duties, the timing of leave taken, travel while on duty, and so on, all of which will be as far as practicable the same as for members of the regular staff of USP.

The Director of IRETA will be responsible for coordinating the work of the members of the team in accordance with the terms of the project. The Director will assign specific time allocations between research, education and extension activities for all Institute fellows as well as functional responsibilities within each activity.

The Contract Representative will designate one of the members of the team as a Senior Fellow to consult with the Director on the selection of candidates for the participant training program and their placement in appropriate educational institutions. The Senior Fellow will also assist in the communication of specific project needs which might be aided by further US Collaborative Institution backstopping.

The Agricultural Outreach Agents will be appointed by and responsible to the Director of the Institute. Their duties and time allocation will be assigned by the Director.

ORGANIZATIONAL CHART



———— line responsibility

----- collaborative responsibility

B. IMPLEMENTATION PLAN

The plan for the obligation of funds for the five fiscal years, starting in 1980, are shown in the Financial Plan Obligations table. These values combine the obligations to the University of the South Pacific and the US Contracting University. They have been distributed to accommodate the program needs and the rate at which the program may be implemented without causing disruption of existing USP activities.

The aggregate allocation of funds for the project categories between the University of the South Pacific and the US Contractor are shown in the table labelled Division of Funds Between Institutions for Obligation. Of the total \$5,260,000 obligation, \$1,139,000 would be directed to USP for support of the regional training workshops, scholarship program, housing construction, and the network of agricultural outreach agents. The remaining \$4,121,000 would be used by the US Contracting University to support the technical assistance activities, management of the home office and evaluation activities, off-shore participant training, and supplies and equipment procurement, all in collaboration with USP.

The time phasing of the technical assistance elements, divided into activity categories, is shown in the Technical Assistance figure. The initiation of activities and their relationship to each other are a reflection of the priorities in the USP region and the ability to accommodate the staff increase at the USP-SOA.

C. ADMINISTRATIVE RELATIONSHIPS

1. Implementing Agency

Section IV.A sets forth the organization of the project and the administrative relationships and responsibilities of the participants. This follows USP procedures and matches the needs and concerns of the US Collaborative Institutions. This organizational plan promotes the long-term maintenance of the activities which are included in this project so that there will be a continuing benefit to the region.

2. Aid

The role of SPRDO (AID) in project implementation will be one of close monitoring with USP and the Title XII technical assistance contractor. The designated AID Project Manager, with appropriate assistance from other AID entities, will provide guidance on procurement, training activities and contracting (or subcontracting) arrangements and will be involved appropriately in joint project reviews and evaluations.

a. Monitoring

The SPRDO Project Manager (or designate) will exercise the following:

1. Monitor and work closely with USP and the Title XII technical assistance contract coordinator to assure that the provisions of the AID Project Agreement with its Contracts,

**ILLUSTRATIVE FINANCIAL PLAN (AID INPUTS)
OBLIGATIONS
(\$000)**

<u>CATEGORY</u>	<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>	<u>FY 84</u>	<u>Sub-Totals</u>	<u>Totals</u>
TECHNICAL ASSISTANCE							
Salary - Long Term	216	290	364	364	76	1,310	
Salary - Short Term	77	135	40	20	308	580	
Relocation Travel - Long Term	22	22	33	40	11	128	
Relocation Travel - Short Term	6	9	3	-	14	32	
In-Region Travel - Long Term	8	14	16	35	42	115	
In-Region Travel - Short Term	7	5	2	1	8	23	
International Travel - Long Term	-	3	9	6	5	23	
Proj. Planning + Design Contract	140	-	-	-	-	140	
Contingency	-	30	70	70	70	240	
U.S. CONTRACTOR SUPPORT	(476)	(508)	(537)	(536)	(534)		2,591
Home Office	82	82	82	82	82	410	
Evaluation Fund	-	30	-	30	-	60	
Special Studies	-	10	20	10	10	50	
	(82)	(122)	(102)	(122)	(92)		520
TRAINING							
Participant Training	-	35	125	140	160	460	
Regional Workshops, Seminars	-	20	55	75	75	225	
Scholarships	-	60	92	92	92	336	
		(115)	(272)	(307)	(327)		1,021
OUTREACH SERVICES							
Agric. Ext. Agents	-	34	46	58	80	218	218
CONSTRUCTION							
Six Houses	360	-	-	-	-	360	360
SUPPLIES AND EQUIPMENT							
	-	200	100	36	18	354	354
OVERHEAD							
	72	123	118	137	126	576	576
Sub-Totals	990	1,102	1,175	1,196	1,177		
TOTAL							5,640

FINANCIAL PLAN (AID INPUTS)

DIVISION OF FUNDS BETWEEN INSTITUTIONS
FOR OBLIGATION

Category	<u>US Inst.</u>	<u>USP</u>
TECHNICAL ASSISTANCE		
Salaries + Relocation (LT)	(1,438)	
Salaries + Relocation (ST)	(612)	
In-Region Travel (LT)	(115)	
In-Region Ravel (ST)	(23)	
Intern. Travel (LT)	(23)	
Proj. Planning + Design Contract	(140)	
Contingency	(240)	
TOTAL TECHNICAL ASSISTANCE	2,591	

U. S. CONTRACTOR SUPPORT		
Home Office	(410)	
Evaluation Fund	(60)	
Special Projects Fund	(50)	
TOTAL U.S. CONTRACTOR SUPPORT	520	

TRAINING		
Participant Training	(460)	
Regional Training Wksh.		(225)
Scholarships		(336)
TOTAL TRAINING	460	561

CONSTRUCTION		
		360

SUPPLIES AND EQUIPMENT		
	354	

OUTREACH AGENTS		
		218

TOTAL DIRECT COSTS	3,925	1,139

INDIRECT COSTS		
	576	

	4,501	1,139

	CY79:	CY80	: CY81	: CY82	: CY83	: CY84	: CY85
	: FY80	: FY81	: FY82	: FY83	: FY84	: FY85	:
PROJECT DESIGN & PLAN.							
Planning Contr. TXII	+----						
REE Baseline Study	+--+						
Survey: Ag. Engineer.	++						
Survey: Ag. Education	+--+						
Project Paper Prep.	+--+						
Project Rev. & Approv.	+--+						
TXII Contract Negot.	+						
Memo. of Agreement	+						
PIO/T (FY80 require.)	++						
PIO/T Prep. for FY		++	++	++	++		
TECHNICAL ASSISTANCE							
Ag. Extension		+ ⁶ +	+----- ²⁴ -----		+ ⁶ +	+ ⁶ +	
Ag. Education		+----- ²⁴ -----		+----- ²⁴ -----		+ ⁶ +	
Ag. Engineering		+ ⁶ +	+----- ²⁴ -----		+ ⁶ +	+ ⁶ +	
Crop Production & Soils		+ ³ +	+----- ²⁴ -----		+ ⁶ +	+ ⁶ +	
		+ ⁶ ++ ⁶	+----- ²⁴ -----				+----- ²⁴ -----
Nutrition & Food Tech.		+ ⁶ +	+ ⁶ +	+----- ¹² -----			+----- ¹² -----
Library & Human Resource Devt.		+----- ¹² -----	+----- ¹² -----	+ ³ +		+ ³ +	+ ³ +
TRAINING							
Ag. Extension				+-----	+-----		
Ag. Education			+-----	+-----			+-----
Ag. Engineering			+-----				
Crop Production &			+-----	+-----	+-----		+-----
Nutrition & Food Tech.				+-----	+-----		
Library & Hum. Res.			+-----				

	CY79:	CY80 :	CY81 :	CY82 :	CY83 :	CY84 :	CY85 :
	FY80 :	FY81 :	FY82 :	FY83 :	FY84 :	FY85 :	
WORKSHOPS/SEM/CONF	:	:	:	:	:	:	:
Multi-Country (#)	:	1	2	3	2	2	:
In-Country (#)	:	3	7	10	15	15	:
SCHOLARSHIPS	:	:	:	:	:	:	:
Academic Years	:	3	12	14	13	8	:
AG OUTREACH AGENTS	:	:	:	:	:	:	:
Number Assigned (Addition of 2/EY)	:	2	4	6	8	8	:
HOUSING CONSTRUCTION	:	:	:	:	:	:	:
Site Selection/Design	:	+	:	:	:	:	:
Contract/Bid/Select	:	+	:	:	:	:	:
Construction	:	+-++	:	:	:	:	:
Completion 1-4 Houses	:	+	:	:	:	:	:
5-6 Houses	:	+	:	:	:	:	:
REPORTS & EVALUATION	:	:	:	:	:	:	:
Annual Review	:	:	+	+	+	+	+
External Review	:	:	:	+	:	:	+

Implementation Letters and/or Memoranda of Understanding are met and are in accordance with established AID guidelines and procedures.

- ii. Participate, as appropriate, in the reviews and evaluations to be undertaken in this project as outlined in the Evaluation Plan (Section IV.E).
- iii. Obtain services to assist in project monitoring as needed from other AID entities within ASIA Bureau.
- iv. Transmit relevant disbursement/reimbursement reports, where designated, to the Regional Controller of SPRDO. Insure follow-up that disbursement/reimbursement requests are in conformity with AID regulations and that adequate financial controls are followed. The above is primarily for those funds that have been authorized directly to the USP under the Project Agreement and/or Memorandum of Understanding.

b. Reporting

The following reports will be required to assist SPRDO Project Manager and, as appropriate, the assigned offices in AID/W (e.g. ASIA/TR, SER/CM) in monitoring the project.

- i. All quarterly and semi/annual and annual reports of the US Contractor and implementing institution to this project.
- ii. All financial reports as stipulated in the Title XII technical assistance contract and Memoranda of Understanding.
- iii. All evaluation reports as set forth in the Evaluation Plan.

c. Disbursement Procedures

AID established disbursement procedures will be followed. Requests for open letters of commitment for goods and services will contain appropriate certification that the items listed are required for the project and are eligible for financing under the grant. Disbursement for local currency costs will likewise be made in an established manner acceptable to AID. These procedures will be set forth in the Memorandum of Agreements or Contracts, as required.

d. Procurement Procedures

Goods and services procured under the grant shall have both their source and origin in countries included in Code 000 of the AID Geographic Code Book and the South Pacific region. Appropriate reports will be required concerning compliance with procurement requirements such as source and origin.

External training for participants will be administered by the Title XII technical assistance contractor.

D. CONDITIONS, COVENANTS, AND NEGOTIATING STATUS

This is a regional project to an accredited institution that is located within the operational jurisdiction of the USAID South Pacific Regional Development Office.

Prior to any disbursement under the grant, or to the issuance of any commitment documents under the Project Agreement to finance vehicles, equipment and facility improvement, the host regional institution shall furnish, in form and substance satisfactory to SPRDO, a plan for installation and maintenance of such items over the life of the project. This includes those commodity procurements which will be provided by the Title XII technical assistance contract.

Prior to any disbursement under the grant, or to the issuance of any commitment documents under the Project Agreements (contracts or Memoranda of Understanding) to finance participant training, the host regional institution shall furnish SPRDO details on salary payments and maintenance to a participant's family by the institution and the rights, conditions and procedures of said participant after this external training is completed.

Prior to any disbursement under the grant, or to the issuance of any commitment documents under the Project Agreements (contracts or Memoranda of Understanding) to finance the scholarship program, the host regional institutions shall provide SPRDO, a detailed plan of action stating the selection criteria and process, financial and operational procedures and administrative direction and accountability.
A local A and E firm will be contracted with the concurrence of USAID to provide review and monitoring services.

E. EVALUATION PLAN

This project represents a relatively innovative approach by the University of the South Pacific (USP) in addressing regional issues related to agricultural research, education and extension. A periodic system of evaluation is required which can effectively assess progress and address constraints and bottlenecks encountered in implementation to insure that the planned objectives are met. Therefore, the project evaluation process will be directed at four general levels and sequenced in such a manner that project performance can be maintained on a timely, continuing basis and problem areas can be rationally diagnosed and addressed.

1. Regular Reporting

Title XII University Contractor will provide quarterly reports to the University of the South Pacific. This fulfills a USP policy requirement. Copies of these reports will be made available to the USAID South Pacific Regional Development Office at Suva (2 copies), AID/Washington to Project Backstop Officer in ASIA/TR (2 copies) and Contract Officer SER/CM (1 copy).

2. Semi-Annual Evaluations

These evaluations held at six-month intervals (or more frequent based on need), are between the Dean of the School of Agriculture USP and

Title XII Contract Representative. The USAID Regional Representative (or designate) is also permanent member of this evaluation committee. Since these meetings will be held in the South Pacific region or at the Title XII Collaborating Contractor's home station, restriction in numbers of participants will be governed by the limited budget support for travel.

Essentially, these semi-annual evaluations will:

- a. Assess all quarterly reports and any other reports or documents related to the project.
- b. Assess progress in accordance to project objectives and implementation plan.
- c. Adjust or modify the implementation plan as needed.

These reports will be used to monitor the implementation aspects of the project and will include resumes of the activities and assessments of the various project components as perceived by the Contractor specialists. As the overall project develops and activities are expanded, appropriate measured assessments of planned versus actual results are to be included in these reports. Inputs by the short-term professionals as well as the long-term assigned staff are encouraged.

3. Annual Program Reviews with Regional (National) Directors of Agriculture

This assessment procedure is being linked with a current on-going activity. Once a year, the Directors of Agriculture meet at a designated location (in 1980 at the Alafua campus) to discuss and review agricultural issues. Where feasible, the activities of the project will be reviewed at these Regional Directors Meetings. Appropriate project administrators are expected to play a role in this review process. This process is intended to assist in matching the research, education and extension activities to the needs of the region. In particular, these annual regional meetings will serve as a bellweather in assessing the outreach effect of the project.

4. External Review

Major reviews using external professionals to the project will be conducted at two intervals: (1) Between the 18th and 24th month after authorization of project and (2) in the first or second quarter of the 5th year after project authorization.

Evaluation focus will include:

- a. Assessments of planned versus actual progress.
- b. Contractor/USP performance (relevance, timeliness, quality, quantity and responsiveness).
- c. Project commitment and effectiveness in meetings to regional needs.

- d. Review of stated beneficiary relationships (economic, social and technical effectiveness of the activities).
- e. Disbursement of AID and USP contributions (adequacy, timeliness and relevance).
- f. Planning requirements for new initiatives beyond life of project.

At certain intervals in overall project evaluation plan (e.g. the semi-annual reviews) the use of an appropriate external evaluator in a technical subject area(s) may be appropriate. The project administration, subject to the availability of funds, and with the concurrence of USAID, will be encouraged to utilize this resource.

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5C(2) - PROJECT CHECKLIST

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

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE?
HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PRODUCT?

A. GENERAL CRITERIA FOR PROJECT

1. FY 79 App. Act Unnumbered; FAA Sec. 653 (b); Sec. 634A. (a) Describe how Committees on Appropriations of Senate and House have been or will be notified concerning the project; (b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that figure)?
 - a) Presented on page 161 of FY 81 CP (Annex II) for Asia
 - b) Yes
2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$100,000, will there be (a) engineering, financial, and other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?
 - a) Yes
 - b) Yes
3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?

N/A
4. FAA Sec. 611(b); FY 79 App. Act Sec. 101. If for water or water-related land resource construction, has project met the standards and criteria as per the Principles and Standards for Planning Water and Related Land Resources dated October 25, 1973?

N/A
5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project?

Yes
6. FAA Sec. 209. Is project susceptible of execution as part of regional or multilateral project? If so why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.

Project will be executed as a regional project

A.

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

Project expects to develop appropriate human resource skills in various aspects of agricultural research, education and extension which will improve technical efficiency of the agro-industrial sector within the South Pacific region.

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

Project through U.S. trained professionals in appropriate agricultural skills will have more awareness and access to utilizing US products and services. Project funded procurement will involve substantial U.S. goods & services.

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

Contributions to the Project are being made by the host regional institution.

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

No

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

Yes

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

No

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FAA Sec. 102(b); 111; 113; 281a. Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production, and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained

Project will benefit the poor and disadvantaged by developing talent with appropriate technical skills through education and extension to serve client groups. Also many technical skills will be oriented towards scale neutral cost-effective packages of improved practices appropriate to the small scale economics in the South Pacific region

B.1.a.

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

b. FAA Sec. 103, 103A, 104, 105, 106, 107.
Is assistance being made available: (include only applicable paragraph which corresponds to source of funds used. If more than one fund source is used for project, include relevant paragraph for each fund source.)

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

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

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

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

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

(ii) to help alleviate energy problems;

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

(iv) reconstruction after natural or manmade disaster;

Project builds capacity of education institution with formal and non-formal capabilities to serve rural populations and provide opportunities for rural people to attend, participate in the institution to improve upon their potential.

B.1.b.(4).

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

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

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

Yes

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

Regional institution will provide at least 25% of costs of overall project through in-kind human resource personnel, facilities, in-country/regional costs for regional personnel.

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

No

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

Project is designed to assist South Pacific University as a regional institution to improve capacity in agriculture by emphasizing new and expanding opportunities to maximize region's intellectual resources. The Project's social and economic soundness and technical analyses indicate small farmers in the region can improve their production performance in agriculture which in turn can increase their income and productivity from the planned dissemination/outreach programs of the Regional Institution in Project.

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

Yes

2. Development Assistance Project Criteria (Loans Only)

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

N/A

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

N/A

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B.

3. Project Criteria Solely for Economic Support Fund

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

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

ANNEX B. LOGICAL FRAMEWORK

Project Title and Number South Pacific Agricultural Development
 No. 598-0267

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTION
<p>Program on Sector Goal: The broader objective to which this project contributes:</p> <p>Promote agricultural productivity and further socio-economic development for the rural peoples of the South Pacific region</p>	<p>Measures of Goal Achievement</p> <ol style="list-style-type: none"> 1. Improve rural per capita productivity 2. Increased use of cost-effective production technologies 3. Increased rate of growth of agriculture sector 4. Increased availability of food supply levels for urban and rural poor 5. Increased level of land efficiency respecting environmental constraints 	<p>Regional and national agricultural statistics</p> <p>Census data</p> <p>Regional and national institution economic development reports</p> <p>Regional SPC, SP Forum reports</p> <p>Donor agency reports (AID, ADC, UN/DP, IBRD, etc.)</p> <p>Baseline Study on REE</p>	<p>Assumptions for achieving goal target:</p> <ol style="list-style-type: none"> 1. Policies of regional countries includes pursuance of consistent agricultural development strategy 2. In-place development commission (EEC, SPC, SPF) and bilateral/multilateral donor continue support to region ag sector programs 3. Small farmers can and will participate in ag development programs 4. New technologies and skills appropriate to needs or region
<p>Project Purpose:</p> <p>Strengthen capacity and resources of the University of the South Pacific in agricultural research, education, and extension (REE) to:</p> <p>(a) Develop and reinforce required human resource skills needed for agriculture programs in the region that emphasize equitable social and economic development</p> <p>(b) Test, perfect and disseminate practical technologies through a viable outreach system, in collaboration with the respective island nation institutions which serve their agricultural communities</p>	<p>Conditions that will indicate purpose has been achieved. End of Project Status</p> <ol style="list-style-type: none"> 1. Functional REE resource base at USP to support regional agricultural development programs 2. An established training program providing necessary human resource to support agriculture in region 3. Packages of tested technology available to the region 4. A functional outreach program capable of disseminating information to regional and national institutions 	<p>USP project reports and records</p> <p>Contractor reports and records</p> <p>Project evaluation (on-site)</p> <p>Regional and national agricultural reports</p>	<p>Assumptions of achieving purposes:</p> <ol style="list-style-type: none"> 1. Sufficient USP personnel available to serve as project counterparts 2. No major delays in resources provided by other donors to USP in facilities and services 3. Technologies and systems perfected are socially and economically acceptable in region 4. USP is acceptable institution to region to develop REE capabilities and services 5. No major financial, political or climatological disruptions

B-1

Outputs:	Magnitude of Outputs	Means of Verification	Assumption for achieving outputs
<ol style="list-style-type: none"> 1. Expand, reinforce agriculture diploma and degree programs. Strengthen five discipline areas in USP agriculture program 2. USP staff development 3. Regional training 4. Outreach services 5. Scholarship program 6. Expansion library services 	<ol style="list-style-type: none"> 1. 20 degree and 40 diploma graduates or five functional departments in REE system (extension, ag educ, ag eng, crops and soils, food technology and nutrition) 2. 10 U.S. trained staff members 3. 60 regional and in-country workshops, short courses, seminars 4. Functional USP network with 8 outreach agents in selected regional countries 5. 45 academic years of scholarships to USP in agriculture for regional personnel 6. Library resources in place to support REE needs 	<p>Contractor reports</p> <p>USP/SOA reports</p> <p>Evaluation reports</p> <p>On-site visits</p> <p>Disbursement records</p>	<p>Funding and coordination by countries for regional agricultural issues will continue</p> <p>A sufficient number of appropriately qualified region candidates will be available to support the project</p> <p>USAID and USP funds will be disbursed as planned</p> <p>Contractor inputs will be provided in a timely manner</p>

Inputs	Implementation Target (Type and Quantity) (\$000)	Project disbursement records	Assumption for providing inputs:																																																															
<p>B-2</p> <p>USG</p> <ol style="list-style-type: none"> 1. Technical Assistance (includes Contractor support, overhead) 2. Training, Outreach services 3. Construction, Commodities <p>USP</p> <ol style="list-style-type: none"> 1. Staff 2. Equipment 3. Facilities 	<table border="1"> <thead> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>630</td> <td>753</td> <td>757</td> <td>795</td> <td>752</td> <td>3,687</td> </tr> <tr> <td>2.</td> <td>-</td> <td>149</td> <td>318</td> <td>365</td> <td>407</td> <td>1,239</td> </tr> <tr> <td>3.</td> <td>360</td> <td>200</td> <td>100</td> <td>36</td> <td>18</td> <td>714</td> </tr> <tr> <td></td> <td>990</td> <td>1,102</td> <td>1,175</td> <td>1,196</td> <td>1,177</td> <td>5,640</td> </tr> <tr> <td>1.</td> <td>497</td> <td>378</td> <td>697</td> <td>841</td> <td>1,014</td> <td>3,609</td> </tr> <tr> <td>2.</td> <td>55</td> <td>60</td> <td>63</td> <td>68</td> <td>73</td> <td>319</td> </tr> <tr> <td>3.</td> <td>191</td> <td>203</td> <td>218</td> <td>240</td> <td>269</td> <td>1,121</td> </tr> <tr> <td></td> <td>725</td> <td>841</td> <td>978</td> <td>1,149</td> <td>1,356</td> <td>5,049</td> </tr> </tbody> </table>		1	2	3	4	5	Total	1.	630	753	757	795	752	3,687	2.	-	149	318	365	407	1,239	3.	360	200	100	36	18	714		990	1,102	1,175	1,196	1,177	5,640	1.	497	378	697	841	1,014	3,609	2.	55	60	63	68	73	319	3.	191	203	218	240	269	1,121		725	841	978	1,149	1,356	5,049	<p>Audit reports</p> <p>Contractor reports</p> <p>ISP reports</p> <p>USAID Regional Office reports</p>	<p>Regional decision-makers will actively support this USP agricultural effort.</p> <p>USP and donors will provide agreed upon support and facilities inputs in timely manner</p> <p>Project procurement and construction will meet planned time table.</p>
	1	2	3	4	5	Total																																																												
1.	630	753	757	795	752	3,687																																																												
2.	-	149	318	365	407	1,239																																																												
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	725	841	978	1,149	1,356	5,049																																																												

ANNEX C: REGIONAL SETTING

A. THE GEOGRAPHY, ENVIRONMENT AND SOCIAL SETTING OF THE REGION

The program encompasses those eleven nations of the South Pacific which support the University of the South Pacific. The nations are: the Cook Islands, Fiji, Kiribati (formerly Gilbert Is.), Nauru, New Hebrides, Niue, Solomon Islands, Tokelau, Tonga, Tuvalu (formerly Ellice Is.) and Western Samoa.

The general geographic, demographic and economic characteristics within the region (as can be noted in Table 1) vary greatly from nation to nation. Regional averages will be minimized in this discussion since they are often misleading and insensitive to the uniqueness of the individual countries.

There are more than 620 islands and atolls in this region which covers an ocean area (including the 200 mile EEZ) larger than 11 million sq. km, an area slightly larger than the entire United States. The combined land mass of these nations is small, with a total area of approximately 64,000 sq. km, about the size of West Virginia.

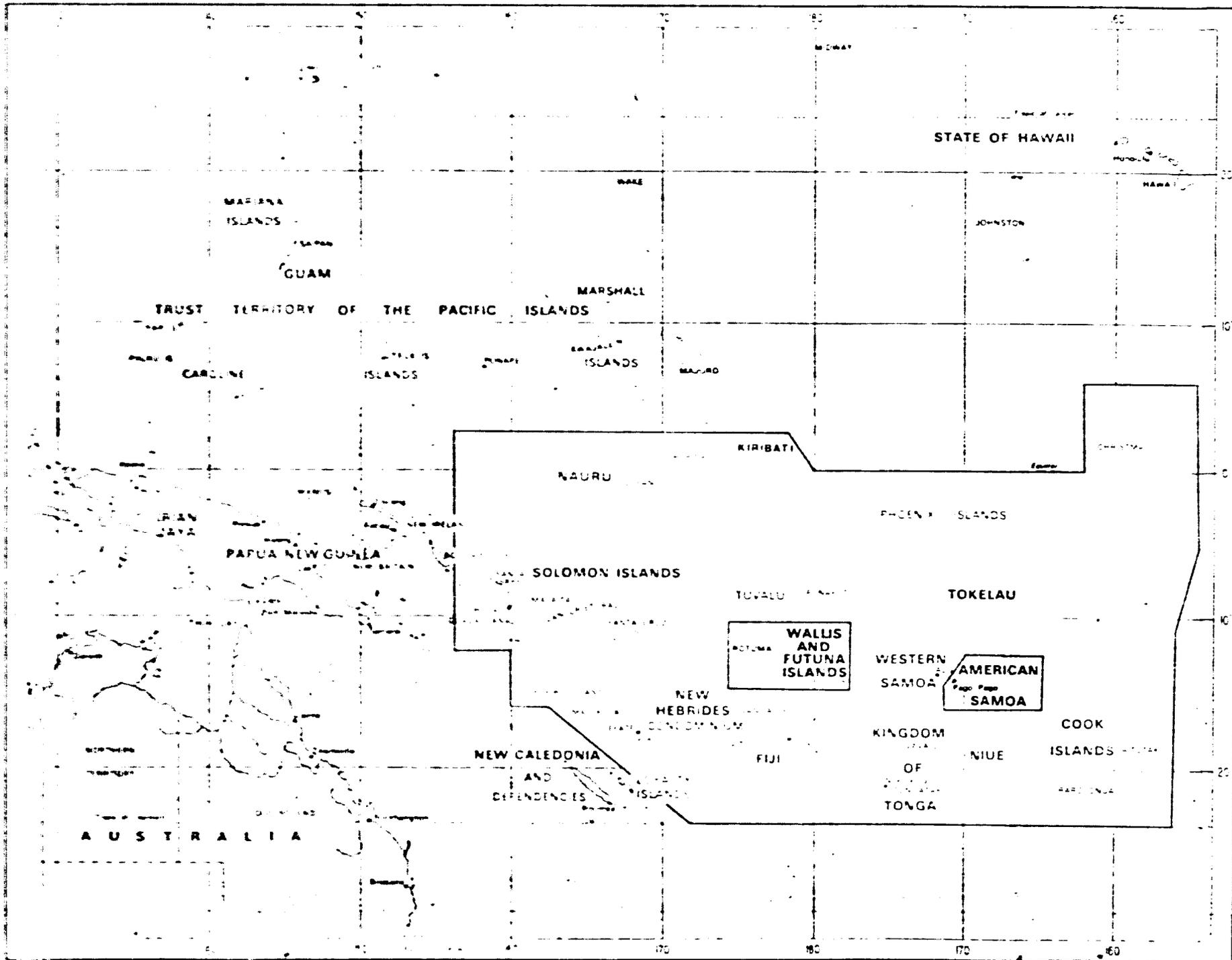
There are approximately 1.3 million people residing in the South Pacific region. Fiji has the largest population, some 607,000 (or 48% of the total in the region). In contrast, some nations have very small populations, such as Tokelau, with some 1600 persons. The five largest countries contain approximately 92% of the total population.

The geographic region is wholly within the tropics although it ranges over some 25 degrees from just north of the equator down almost to the Tropic of Capricorn. As a result of this range of latitude and the effect of oceanic circulation patterns, air temperatures in the coastal regions are usually between 20 and 30°C (68-86°F). The higher elevations in the southern part of the region experience a more temperate climate.

Rainfall is generally high throughout the region, often with more than 2500 mm (100 inches) per year. There are exceptions, however, such as Nauru which regularly experiences drought-like conditions of 200 mm per year or less. High rainfall amounts are also associated with high cloudiness and a corresponding decrease in solar radiation. This is an important factor in controlling crop productivity.

Cyclones occur with high frequency in a number of nations, primarily those in the south-west portion of region. In particular, the Solomon Islands, New Hebrides, Fiji and Tonga expect one or more cyclones per year.

The eleven countries come from the three major ethnic and geographical areas of the South Pacific. The Polynesian ("Many Islands") nations are the Cook Islands, Niue, Tokelau, Tonga, Tuvalu, and Western Samoa. The associated Melanesian ("Black Islands") countries are Fiji, New Hebrides, and the Solomon Islands. Kiribati and Nauru are situated in the area identified as Micronesia ("Little Islands"). These differences



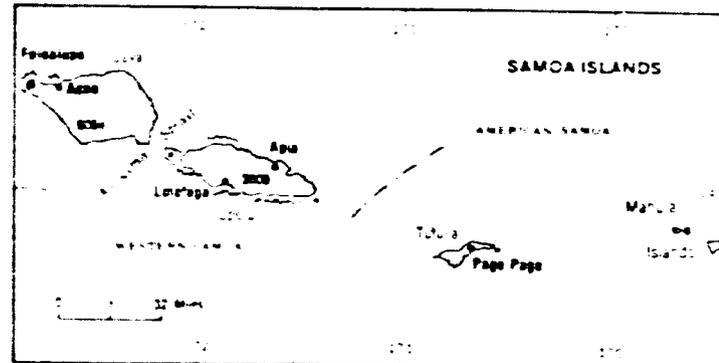
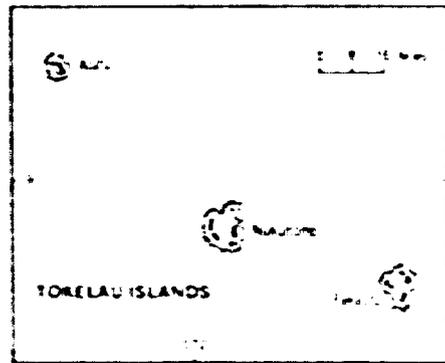
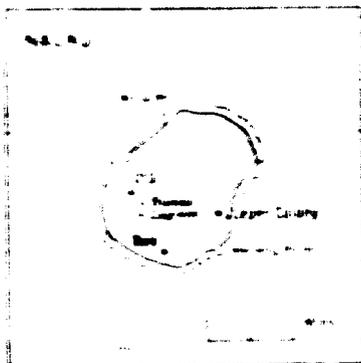
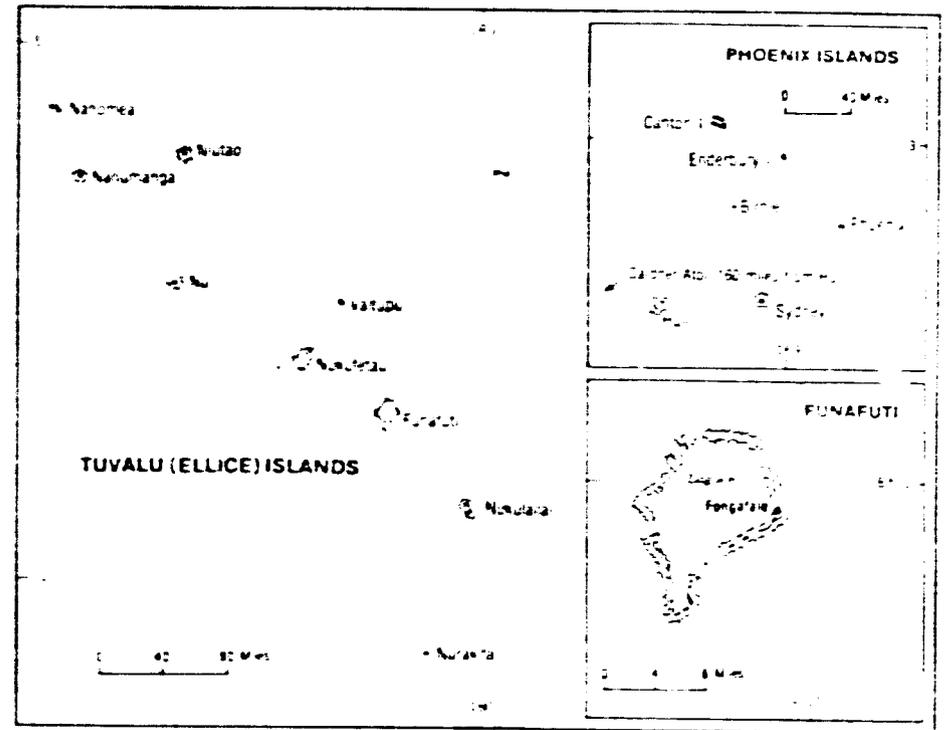
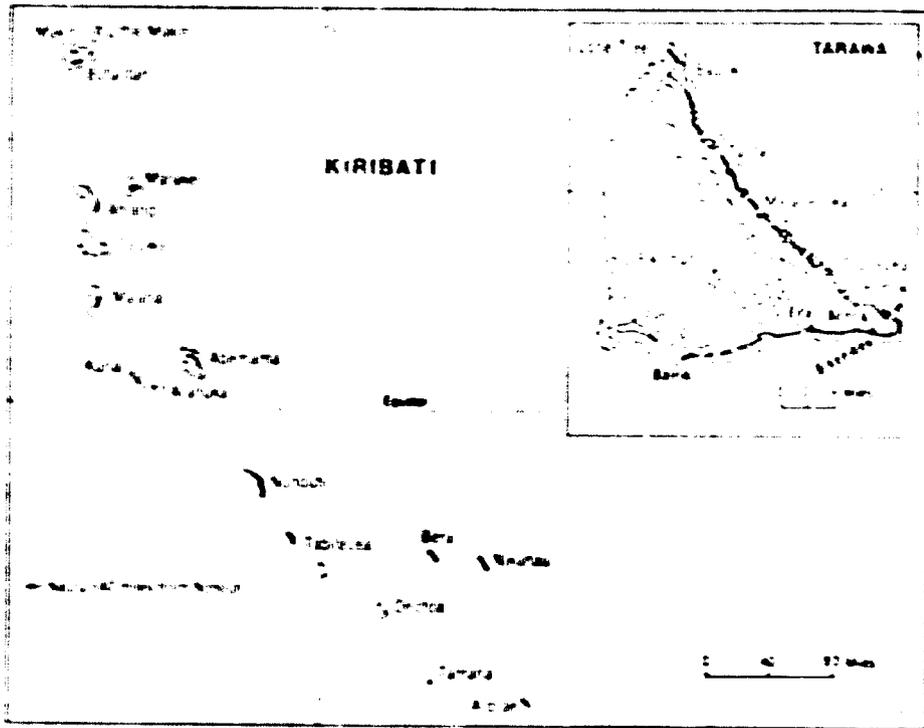


Table 1. Characteristics of the Nations in the South Pacific Region

Nation	Total land (sq. km)	Largest island (sq. km)	Population (1978)	GDP per capita (\$US)
Cook Islands	240	65	18,500	892
Fiji	18,272	10,390	607,000	1,203
Kiribati	684	38	56,000	718
Nauru	21	22	7,000	20,203
New Hebrides	11,880	3,947	101,500	826
Niue	259	258	3,700	276
Solomon Is.	28,530	5,650	214,000	361
Tokelau	10	5	1,600	N.A.
Tonga	699	260	93,000	377
Tuvalu	26	6	7,400	N.A.
Western Samoa	2,935	1,820	153,000	310

present a rich mix of possibilities since agricultural practices are inextricably bound to the social systems, the variety of historical, cultural, environmental and political systems occurring in this region.

In addition to the major physical and demographic differences noted earlier, there is little homogeneity in kinship nets, leadership structure, work role definition, function of women in agriculture, language, land tenure, or any number of issues that must be considered in the development of agricultural projects. Most of the Polynesian countries were colonized earlier and have a longer history of religious, political and economic interventions; they are generally more Westernized than the other countries. Polynesians also tend to have a stronger group identification, based partially on their extended kinship nets and historical ties through pre-colonial contacts. In contrast, the other countries have been more isolated and have tended to develop greater tribal independence, to the point that the Solomon Islands boasts 87 different languages and the New Hebrides has 70.

Politically, all of the countries except Tonga (an historical kingdom) have been under colonial influence. Most are newly independent, or about to be (New Hebrides); two are internally self-governing states in free association with New Zealand (the Cook Islands and Niue). In contrast to Tonga which traces its royal lineage back to 950 AD, some of the countries are so recently independent and have such limited political experience, that they lack the sense of identification as a single political unit necessary for national pride and a coordinated development program. Generally, however, the countries possess a strong national identification and robust cultural pride.

Throughout the region, the population growth rate generally is high. The New Hebrides and Solomon Island both have annual increase of 3.2% or more. Some countries, where there are relatively easy possibilities of migration, there may even be an annual population decrease, such as is found in Niue and the Cook Islands. Population densities vary considerably throughout the region, from a low of 8 per sq. km in the Solomon Islands and New Hebrides, to over 333 per sq. km in Nauru. These values compare with 53 per sq. km in Hawaii and little more than 2 per sq. km in the US as a whole. Of course, not all of the people are equally dispersed within a country. In particular, urbanization is a relatively recent phenomenon which is having a particularly profound impact. Nearly 30% of the population now live in or near urban centers and there are at least ten centers which have ten-thousand or more people.

The largest proportion of the labor force throughout the region is engaged in agriculture and fisheries. While this proportion has been declining for some time, it is still a very large part of the cash-economy of all of the countries (except Nauru). The level of employment in subsistence agriculture is also thought to be large, but is not as easily measured. In the aggregate, there are more than 120,000 persons engaged in agriculture in the region. As a general comparison, approximately 57% of the male workforce is found in the agriculture and fisheries sector, followed by 20% in the governmental sector. It should be noted that there are many cases of overlap between these types of categories. In Niue, for example,

virtually all government employees (some 74% of the total workforce) are also subsistence farmers. This is such an important part of the structure of the economy of Niue that the workday schedule has been adjusted to allow sufficient time for gardening.

The general employment situation in the South Pacific region is similar to many developing countries. In particular, there is widespread unemployment in urban centers, especially among the youth. Governments are generally concerned with finding suitable employment opportunities particularly for the unskilled. In Tonga, Western Samoa, the Cook Islands and Niue, there has been migration of the young to metropolitan countries (mainly New Zealand) from which they provide remittance incomes. This is not done as a direct government policy, but provides higher income to both the individual and relatives in the home country. Serious social consequences have resulted from the loss of such a large part of the young workforce.

B. ECONOMIC CONTEXT

Agriculture provides over 57% of the income for the region. In all the countries, except Nauru, agricultural development is the basis of the economic development. Differences in physical and social environments, and past patterns of development, direct each nation to its own path of economic development. Some nations are very well off, in the sense of overseas earnings. Nauru is a case in point, where its wealth from phosphate mining and investments made abroad from past income provide it with the world's highest per capita Gross Domestic Product (\$20,203). Yet it is a country which is entirely dependent on phosphate with no other natural resources. Other countries have miniscule overseas income. Small, atoll nations, in particular, have problems of economies of scale, and face a future which will allow no economic growth. Development programs, properly planned and executed, hold some promise for improving the ability of some countries to maintain their standard of living when recurrent foreign aid is withdrawn. Even the atoll countries will experience benefits from well designed development projects which put emphasis on promoting semi-subsistence activities.

Shortage of skilled labor is an important factor in the region. There is often direct competition for labor between the agricultural and non-agricultural sectors, with the labor force shifting to the sector which offers the higher standard of living. In many parts of the region, there are differences in the division of labor between the sexes. While a consideration of this point is reserved for later discussion, it must be noted that such differences sometimes determine the labor availability in a country and, therefore, its development potential.

Foreign trade, principally in a few agricultural commodities such as sugar, coconut products, cocoa and palm oil, are major cash earning activities in many of the nations of the region. Such activities also have an impact on national economies through their import activities and the infrastructure required for their maintenance. Where diversification of export products has not been made, the economy of a country is particularly susceptible to the relatively volatile world commodities markets.

Diversification of the economy is a particularly difficult problem for many of the nations of the region. Not only are production possibilities limited in the smaller countries, but quarantine restrictions, access to markets, and transportation are but a few of the more obvious problems. In some cases, diversification may assist in the replacement of items, including foodstuffs, which are now imported. Careful consideration is necessary, however, in the evaluation of the economic viability of plans to replace staple grain crops, for example, given the resource limitations in most of the countries. Better opportunities appear to exist for the replacement of the dairy products, fish, vegetables and fruits which are now imported.

An important element in the budgets of all of the countries of the South Pacific is foreign aid. This averages \$78 (1977) per person per annum in the region and is particularly high in the smaller countries, such as Niue where it is \$923 per person. While the level of aid has been increasing, there are direct indications that such support will be discontinued by some large donors to particular countries during this decade. As described earlier, this may not be possible for the very small nations. A continuing general goal appears to be the provision of aid support to develop activities which will reduce long-term dependence on donor nations.

C. AGRICULTURAL CONTEXT

The economies of the nations of the South Pacific region are primarily based on agriculture and are likely to remain for the foreseeable future. Agricultural products are the major exports of many nations (\$178 million annually) and, increasingly, are becoming an important factor in the import trade as well (\$99 million annually).

The agricultural resource endowments of the various nations are quite different. The small, atoll nations have limited resources for either quantities or a diversity of agricultural products. They are also most susceptible to disruption, generally remote from markets, and least able to support research to improve their situation.

The nations which occupy larger, more topographically varied islands, have a greater number of agricultural environments and larger areas in which production may take place. They are also more resilient to short-term perturbations, such as in water supply during a drought, as compared to the atoll environments. Soils are better developed and lands are generally extensive enough to allow intermittent cropping with fallow period, rather than requiring continuous production as might be the case with extreme land shortages.

There are three types of agricultural systems which have developed in these regional environments: self-contained subsistence systems, mixed subsistence and cash crop systems, and plantation or estate enterprises. Self-contained subsistence systems are centered around the production of starchy staple crops (often root crops), indigenous tree crops, domesticated fruits, poultry, pigs and fishing. In some situations, relatively permanent gardens are established while in other places, the garden plots

are shifted periodically. In Polynesia, such gardens are usually tended by the men, while in Melanesia, it is the task for the women.

Mixed subsistence and cash crop systems incorporate many of the above elements but also have the addition of commercial crops such as coffee, cacao, vanilla, cattle, and artisanal fisheries. Market demands often require greater technical sophistication in the crop production systems, especially in the quality, quantity and timing of the products. Additional processing is often required as is access to markets. A much smaller variety of crops are utilized in cash cropping than in subsistence farming which reduces the production seasons, places greater strain on the ecosystem, and increases vulnerability to major pest infestations. In Melanesia, men often dominate the cash-crop portions of this system. Where nearby prime land is relatively scarce, it is devoted to the cash crops, forcing the women to travel to the more remote marginal lands for their subsistence gardens.

The plantation or estate enterprises are usually capital intensive, have centralized management, wage and labor arrangements, and control large tracts of land. In addition, they are often likely to use agricultural chemicals and mechanization. Timber, coconuts, oil palm, cattle, cacao, and industrialized fisheries are examples of this type of agricultural system. Such agriculture generally provides the export commodities which form the economic base of the countries.

The marked changes in food habits within the island societies since World War II have created some significant shifts within traditional agricultural systems. Plantation laborers are provided with diets consisting of imported starches, including wheat, rice, canned meat and fish. Increasing urbanization has also led to a greater consumption of such imported crops. This greater utilization of these nontraditional foods has increased their prestige value, as well as emphasized their relative convenience and availability, and further increased the demand for them, even into regions which can be adequately supplied by subsistence agricultural practices. Adoption of such diets has resulted in an increase in cash cropping to pay for such imported commodities, further reducing the availability of subsistence gardening. When kept in a proper balance, a mixed traditional and imported food diet is nutritionally sound; but in too many cases, severe nutritional imbalances have resulted. Also, dietary changes have resulted in the stagnation of the production of some traditional foods, such as yams, taro, banana and breadfruit.

This brief characterization only hints at the complexities of these agricultural systems as integrated activities which are bound up in the social, economic and environmental fabric of the communities in which they are found. Agricultural development programs which do not adequately consider and meet the requirements for integration are unlikely to have a substantial or lasting impact on their intended beneficiaries. Only in the larger countries does there begin to be a sufficient number of trained people to work together to find solutions. As a result, there is considerable expectation that this may be done most effectively by a regional institution.

D. THE EXISTING REE SYSTEM IN THE SOUTH PACIFIC

There are a number of agricultural research activities in the South Pacific Region. The amount of research, the level at which it is carried out, and the specific focus depends on the resources available in each particular country. In the aggregate, there are more than 500 active agricultural research projects covering the range of crop production, pest and diseases, weed control, soil fertility, livestock project and pastures. The relative distribution of activities between these areas can be seen in the accompanying table. It is clear that the large countries, as would be expected, have the most comprehensive programs while the small countries tend to focus on a few commodities of particular relevance to their economy.

Little has been done in a substantial way in the South Pacific region to unify the research efforts of the various countries. Current activities to provide coordination are relatively weak. There are, however, a number of examples of attempts to provide such coordination. There are annual meetings of the Directors of Agriculture from each country. The South Pacific Commission conducts periodic surveys of the research which is underway in the region (done twice in the last decade). Consultants report on needed mechanisms for coordination, such as the recent report for the EEC by Payne. Donors and lenders conduct agricultural surveys; the most recent study of the agricultural sector was done by the ADB and it recommends the establishment of a regional research center for root crop and coconut research. In addition, there are periodic meetings of specialists from throughout the region discussing specific problems such as the recent meeting on atoll agriculture held in Tahiti.

Coordination which goes beyond the current activities appears to be desirable. There is both a large enough research effort in the region and enough common interest and attention given to the same commodities and production bottlenecks that benefits would be expected from an organized regional effort. This coordination would allow better use of the relatively scarce resources which can be devoted to agricultural research.

There are probably no more than 120 qualified agricultural researchers in the region. Many of these have only the minimum qualification and are not working at the level assumed in developed countries. Small countries, such as Niue, now has a single qualified researcher. In contrast, Fiji had, in 1974, some 26 researchers. There is often a large support staff associated with these researchers; Fiji had some 250 assistants and support personnel associated with its research program. A large proportion of the most qualified researchers, perhaps as many as 90%, are expatriates. This presents a problem relative to an understanding of the agricultural systems and the constraints to development since there is generally a high turnover of such personnel.

Extension activities in the region are carried out as a function of the agriculture departments. In many cases, this is the largest function in the department. As with research, the overall effort varies in proportion to the size of the country. Tuvalu has only two extension workers. Niue has eight. Kiribati maintains at least one agent on each island, with the larger islands having two or three agents. Western Samoa had a permanent extension staff of 27 in 1972.

RELATIVE RESEARCH EMPHASIS (rankings within a program of a country)

	1972						
	Fiji	Solomon	Tonga	W. Samoa	N. Heb.	Cook Is.	Kir.+Tuv. Niue
Coconuts	3	3	1		3		3 2
Root Crops	1	1	2	2	3	1	
Other Fruits	2	3	1	1	1	2	
Vegetable	3	1	3	1		2	
Bananas	2		3	3		2	
Cocoa	3	3		1	1		
Citrus	1			1	2	3	
Spices	1	3	1	1			
Other Oil Crops		2			1		
Other Cereal/Pulses	1		2				
Sugar	3						
Coffee/Tea	1						
Pastures	3	2	2	3	3		3
Diseases and Pests	3	3	3	3	1		
Livestock	3	1	2	3	2		1
Soil Fertility	1	2	2	3	2		
Weed Control	2			2			1
Rodent Control	1	1	2				
Farming Systems	1			1			

(3=high, 1=low)

There is a general need for increased training for the extension personnel so that they will be better qualified to assist the agricultural activities. While a large country such as Fiji is able to satisfy its own training needs through the Fiji College of Agriculture, the smaller countries must send their workers to other countries if they are to receive comprehensive training. Sometimes special training programs are established which give a minimal level of information to the extension staff. An example is the Staff Training Center on Tonga which offers a one year, post-secondary on-the-job training course for agricultural extension workers.

The two most comprehensive post-secondary agricultural programs in the region are offered through the USP School of Agriculture (Alafua, Western Samoa) and the Fiji College of Agriculture. The USP-SOA has 149 students and the Fiji COA has 115.

In addition, there are a number of technical and vocational schools which offer agricultural training. In Fiji, besides the Fiji-COA, there are some 29 other institutions. The Solomon Islands (in 1974) had 21 District or Village training or demonstration centers. Tonga has four post-secondary and nine secondary schools which offer agricultural courses. This pattern is repeated throughout the region.

E. REGIONAL AGRICULTURAL SUPPORT INSTITUTIONS

There are a number of governmental, intergovernmental, international and private organizations which are assisting in agricultural development in the South Pacific region. Three institutions which are headquartered in the region have broad responsibilities in this sector: The University of the South Pacific (USP), The South Pacific Commission (SPC) and the South Pacific Bureau for Economic Cooperation (SPEC).

The University of the South Pacific is the major institution concerned with the higher education needs in the region. Its current programs, including those directly in the agricultural sector, make it the prime candidate for strengthening to achieve the goal of regional agricultural development. The specific capabilities of this institution are discussed in the next section. The other regional institutions play an important role, as well, both independently and in collaboration with the programs of the university.

The South Pacific Commission was founded in 1947 as a regional advisory and consultative organization. Its membership has grown over the years to where it now has representatives from 26 governments in the Pacific basin and metropolitan countries with traditional regional interests. The main programs of the SPC are in the areas of food and materials, marine resources, rural management and technology, community services, socio-economical statistics, educational services and information services. These SPC programs are generally carried out in the form of site visits by consultants, conferences and training courses and the collection, analysis and distribution of national materials in ways which will allow regional benefit.

The South Pacific Bureau for Economic Cooperation was founded in 1973 and is a regional organization (with a membership similar to that of USP) which has a specific focus on the economic development of the region. It does this by expanding trade within the region based on recommendations from studies on regional problems and the provision of regional trade services. Examples include the removal of trade barriers, trade promotion, marketing and advisory services. Studies currently are being done on shipping, pest and disease problems, quarantine requirements, and telecommunications.

F. PROJECT SETTING

The University of the South Pacific (USP) was formally established in 1970 to provide for the higher education needs of the eleven countries in the South Pacific region. It is charged with the maintenance, advancement and dissemination of knowledge through programs of teaching, research and outreach. It has the further responsibility of providing education and training activities which meet the needs of the South Pacific communities. Three of the four schools are located on the Laucala Campus near Suva, Fiji: The School of Education, the School of Social and Economic Development, and the School of Natural Resources. In addition, this campus has five Institutes, the Center for Applied Studies in Development and the University Extension Services (Continuing Education/Communications). This latter function is not to be confused with Agricultural Extension.

Since agriculture is both the foundation and key to economic development in the region, the University entered into an agreement with the Government of Western Samoa in 1977, to add the South Pacific Regional College of Agriculture (then a Western Samoa institution located in Alafua) to the University of the South Pacific as its School of Agriculture. This school was authorized to continue offering a three-year diploma program and to add a program leading to a Bachelor of Agriculture degree.

The USP has developed a series of Institutes to increase its responsiveness to specific needs of the region. To complement the several Institutes located on the Laucala Campus, authorization was granted in May 1980 to establish an Institute for Research, Extension and Training in Agriculture (IRETA) on the Alafua Campus. This emphasizes the university's commitment to a major agricultural effort over the next decade which will focus the school's resources on the regional problems of agricultural development. A number of donors, including USAID, have been asked to participate in this venture by combining their activities into a unified program.

The University of the South Pacific is the major regional institution responsible to the broad needs of communities it serves. It is more than just a teaching institution; USP has become a major resource base in the region, and actively supports the economic and social development of its eleven participant countries. The University has taken a strong initiative through its School of Agriculture (SOA) to contribute to the agricultural development of the region by educating the people, conducting a variety of research programs, and providing consultancy and outreach services.

G. USP AGRICULTURAL EDUCATION

USP-SOA has major educational responsibilities as an academic institution. Most obvious among these is the offering of campus-based instruction leading to professional certification, either in a diploma or degree program. The primary aim of the instructional program is the preparation of persons for employment in government, agriculture and educational services, allied agricultural industries, and private agricultural enterprises. The need for such graduates has been well documented in a recent FAO survey. Current attention is being focused on the upgrading of the on-campus instruction activities by increasing the range of staffing capabilities.

Enrollment figures for the on-campus instructional activity are projected to increase substantially over the next five years in response to demands within the region. Currently there are 149 students enrolled on the Alafus Campus (101 ag diploma and 48 ag degree candidates). By 1985, 300 students are anticipated including 210 diploma candidates (150 in tropical agriculture and 60 in agricultural education) and 90 candidates in the degree program. Presently the major constraint on student enrollment, especially at the diploma level, is not the availability of qualified candidates but a lack of financial resources by potential students to cover fees.

The diploma and degree programs presently are designed for agricultural generalists; future plans include offering majors in livestock, crops, plant protection, soils, and extension and agricultural education.

H. USP AGRICULTURAL RESEARCH

Agriculture is the major economic base, the principle employer and essential to the feeding of the people in the region. Its importance, however, has not been matched with sufficient research support, due primarily to the limited institutional capabilities in the region. It is recognized that one must consider both regional and site-specific research. Research in areas such as crop protection, animal health, human nutrition, import substitution, alternate technology, marketing, can be done at a centralized location, such as Alafua, and still provide valuable regional extrapolation. Other research is more site-specific, such as studies on ginger and sugar in Fiji, vanilla and more temperate-region vegetables in Tonga, and localized plant and animal diseases and insect pest infestations. Well coordinated long-range programs are necessary to utilize the region's scarce research resources wisely and to avoid duplication of effort.

USP-SOA's current research programs are severely hampered by a lack of facilities, staff and support. They are local in focus and generally cannot meet regional requirements. There is a need to upgrade the staffing and campus facilities to provide the research and backup support services needed by the region.

1. USP AGRICULTURAL EXTENSION

Agricultural knowledge must be extended from the laboratory and field station to the villager or plantation worker in order to effect change. It is the integration of such extension outreach which characterizes the USP-SOA agricultural activities. While Alaina accepts responsibility for disseminating agricultural information throughout the region, it is not now prepared to do this to the extent which is required.

ANNEX D: THE UNIVERSITY OF THE SOUTH PACIFIC

A. ORIGINS

The main steps leading to the establishment of the University of the South Pacific were 1) the report of a Higher Education Mission sent to the South Pacific in 1965 by the Governments of the United Kingdom and New Zealand in co-operation of the Government of Australia and led by Sir Charles Morris, 2) the appointment of an Academic Planner, Sir Norman Alexander, who reported in 1967 on how to put the Morris recommendations into effect, 3) the appointment, by Fiji Government Ordinance of July 1967, of an Interim Council with Sir Norman Alexander as Acting Vice-Chancellor Designate, and 4) the appointment in January 1968 of Dr. Colin Aikman as the first Vice-Chancellor.

Teaching began in February 1968 and Dr. Aikman assumed duty in May and presided over a Programme Planning Seminar that laid down the principles and the structure of the teaching programme to be followed. The USP, however, was formally established on March 5, 1970 when the Royal Charter was presented by Her Majesty Queen Elizabeth II in a resplendent ceremony in the hangar transformed for the occasion in the South Pacific way at the former Royal New Zealand Air Base outside Suva.

Thereafter, His Majesty King Taufa'ahau Tupou IV of Tonga was installed as the first Chancellor, in 1971, to be succeeded by His Excellency President Hammer DeRoburt of Nauru, in 1974, and by the Rt. Hon. Ratu Sir Kamisese Mara of Fiji, in 1977.

Masiofo Fetau Mataafa of Western Samoa was Pro-Chancellor and Chairman of the Council from 1971 to 1976, and was followed by Dr. S. Langi Kavaliku of Tonga in 1977. Dr. Aikman resigned at the end of 1974 and Dr. James A. Maraj assumed the Vice-Chancellorship in 1975.

This regional University currently services the needs of eleven countries of the South Pacific: Cook Islands, Fiji, Kiribati, the Republic of Nauru, New Hebrides, Niue, Solomon Islands, Tokelau, the Kingdom of Tonga, Tuvalu, and the Independent State of Western Samoa.

B. DEVELOPMENT

Basically, there have been three stages of development.

First Stage: This was the formative stage from 1967 to 1971 when courses were defined and a university structure was created. The Programme Planning Committee of 1968 chose the Schools system in preference to the more traditional system of departments and faculties, resulting in the three Schools (Social and Economic Development, Natural Resources, and Education) as the three major areas of undergraduate study.

INFORMATION OBTAINED FOR THIS ANNEX OBTAINED DIRECTLY FROM UNIVERSITY OF THE SOUTH PACIFIC DOCUMENTS

Second Stage: The second stage, 1972-1974, was one in consolidating the developments of the first phase. Staff increased only slightly (to 150) but full-time internal student enrollment rose to 981. By the end of 1974 the University had conferred one Master's degree, 173 Bachelor's degrees, 41 Graduate Certificates of Education, 204 Diplomas in Education and 13 Diplomas in Business Studies.

Third Stage: The third stage began with the arrival of Dr. James Maraj in 1975. Since then the teaching programme has been further consolidated and service to Governments and to the peoples of the region was emphasized.

This is being developed in two ways: first, through applied research into local and regional problems and consultancy work based on this research; and second, through an expanded range of extension courses which can be credited towards preliminary, diploma and degree programmes, and the promotion of continuing education programmes involving locally-based adult education teaching.

C. GOVERNMENT OF THE UNIVERSITY

The University is an autonomous institution governed by its own Council. The membership of this Council is composed of appointees of each of the Governments of the countries in the University region together with representatives of the metropolitan governments supporting the University and members elected by the staff and students of the University. The Chairman is the Pro-Chancellor.

The academic business of the University is handled by a Senate, composed of the professors and senior teachers in each of the disciplines, with the Vice-Chancellor as Chairman.

Each of the Schools has a Board of Studies comprising members of its academic staff and the representatives of the students enrolled in its programmes. These boards recommend academic and other appropriate matters to the Senate for approval.

D. THE LAUCALA CAMPUS

The Laucala Campus in Suva has 194 acres. The Upper Campus, consisting of 177 acres, is broken by a series of irregular ridges and steep-sided gullies, while the two lower sections of the campus, comprising some 17 acres, are adjacent to the sea and almost completely flat.

The original Royal New Zealand Air Force base included 210 buildings when the base was handed over. Some have been converted into lecture rooms, laboratories and offices. Others have provided accommodation for about 330 students.

E. THE ALAFUA CAMPUS

The Alafua Campus in Western Samoa consists of 77 acres, which housed the former South Pacific Regional College of Tropical Agriculture, together

with approximately adjoining 30 acres. On January 1, 1977, the College became an integral part of the University and its land and buildings with the additional 30 acres became the University's second campus. The campus is situated three and a half miles from Apia.

F. THE SCHOOLS

There are three Schools on the Laucala Campus in Suva, Fiji: the School of Education, the School of Social and Economic Development, and the School of Natural Resources; and one School, the School of Agriculture, on the Alafua Campus in Apia, Western Samoa.

1. THE SCHOOL OF EDUCATION

The School of Education comprises the disciplines of education, English and mathematics, as well as the more occupationally-oriented areas of industrial arts, home economics, and commercial studies. It is responsible for several teacher training programmes at certificate, diploma and degree level, and most of its students will become teachers in the secondary schools of the region.

2. THE SCHOOL OF NATURAL RESOURCES

The School of Natural Resources contains the disciplines of biology, chemistry and physics. The teaching programmes places emphasis on general principles across a broad spectrum of the natural sciences. The aim is producing graduates who recognize the role and importance of science in the developing world of the Pacific, who have the flexibility of outlook required to adapt to a variety of career areas as these emerge within the South Pacific, and who at the same time are able to promote the rational controlled development of the natural resources of the region.

3. THE SCHOOL OF SOCIAL AND ECONOMIC DEVELOPMENT

The School of Social and Economic Development provides teaching in the subject areas of accounting, administrative studies, economics, geography, history/politics and sociology. Teaching in the School is oriented particularly towards encouraging a critical understanding of the development process and its social implications. Its graduates are in demand for a wide range of employment in business and commerce, and the public sector.

4. THE SCHOOL OF AGRICULTURE

Agriculture is both the foundation and the key to economic development in the South Pacific region. As the major industry of the region, agriculture contributes the largest share to gross domestic product, provides the major exports, and employs the majority of the labour force. However, regional agricultural development faces an important constraint in the shortage of trained high-level manpower.

This need for trained personnel led to the establishment by the University of the South Pacific of a degree programme in Agriculture.

To cater for this programme, the School of Agriculture was set up at the beginning of 1977 by integrating the South Pacific Regional College of Tropical Agriculture into the University. In this School is taught a wide range of applied courses in agriculture, ranging from biochemistry, microbiology and entomology through agricultural engineering, crop protection, animal production and soil science to farm management and agricultural marketing.

G. THE UNIVERSITY AND DEVELOPMENT: THE INSTITUTES AND THE CENTRE FOR APPLIED STUDIES IN DEVELOPMENT

The University, with its two hundred senior staff and three hundred support staff, the equipment in its laboratories and working areas, and the books and journals and other sources of information within its libraries, represents by far the largest collection of resources in terms of skills and equipment in the whole South Pacific region. It is in the interests of the region and of its Governments that this resource base should be put to use as fully as possible.

Over the last five years the University has devised a particular method by which the resources of the University can be channelled to assist Governments and other bodies or institutions within the region in work which is directed towards development.

This has been done by the establishment of six action-oriented Institutes and a Centre for Applied Studies in Development. The Institutes are those of Education, of Social and Administrative Studies, of Marine Resources, of Natural Resources, and of Pacific Studies. The most recent member of the Institute for Research, Extension and Training in Agriculture located at the Alafua camp. They are closely linked to the Schools of the University and are able to draw on the staffing and equipment resources of the Schools in the fulfillment of their tasks.

The responsibilities of the Institutes include the development and mounting of programmes of short courses, seminars, training workshops, etc., which are seen to be needed by or are requested by Governments or organizations within the region. They also co-ordinate and arrange programmes or parts of programmes within the University which have practical vocational training as an integral part. They are encouraged to develop links with other institutions or bodies in the region, and where appropriate, cooperate in general developmental programmes. They are also free to develop advisory and consultancy roles within their areas of competence and interests.

1. THE CENTRE FOR APPLIED STUDIES IN DEVELOPMENT

The Centre was developed in 1976 to respond to regional requests for practical action-oriented research. It was envisaged as an instrument for appraisal and evaluation studies of problems, especially those which required expertise from a number of fields. It has developed into a focal point for a broad range of economic, social, scientific and technological activities and it has undertaken a varied array of tasks for the island Governments.

Its first project was a manpower survey for Tuvalu by a team which included University staff and a representative of the United Nations Development Advisory Team (UNDAT). Then followed two studies commissioned by the Government of Fiji on Energy Imports, Consumption and the Cost of Living in Fiji and on Solid Fuel Technology, and a report on Substitution for Raw Sugar in World Markets.

More recent work has included the organization of a conference, at the request of the South Pacific member states of the United Nations, to gauge their opinions and prepare proposals for the United Nations World Conference on Science and Technology for Development (UNCSTD) which was held in Vienna in 1979; and a Survey of Energy Needs in Rural Fiji, which generated interest in that country's public and the private sectors.

The Centre has also been working on activities related to manpower planning for development projects, monetary economic problems of small island countries, and food distribution systems.

2. THE INSTITUTE OF EDUCATION

The Institute of Education has established close links with a number of regional institutions such as teachers' colleges, local teachers' associations, governmental ministries and departments of education. It has assisted with the development of and examines externally the Diploma in Primary Education course at the Malapoa College in Port Vila in New Hebrides, thus enabling the diploma to be awarded as a qualification of the University.

The major thrusts of the Institute's activity have included a) assistance in the evaluation and assessment of school performance to a number of countries in the South Pacific whose school systems at the present moment are rapidly expanding to meet the needs of increased populations, b) co-operate with the Commonwealth Secretariat in a successful course on educational administration to equip officers in Ministries of Education through the region with enhanced skills for senior positions, and c) curriculum development to meet needs of the South Pacific with current involvement in a project for secondary schools in Tonga.

In addition, it mounts specific training courses. For instance, with Australian assistance, the Institute provided a fourteen-month course at the Laucala Campus which leads to a teacher training qualification for graduates who have entered the teaching profession. Each year discussions at an advisory seminar which is attended by Directors of Education from the countries of the University's region help the Institute plan its activities for the future.

3. THE INSTITUTE OF MARINE RESOURCES

This Institute was established in January 1978 to provide regional governments with advisory and consultancy services on 1) the exploration and exploitation of mineral resources, 2) the protection of the marine environment, and 3) undertake applied research on living and

non-living resources of the sea. It also provides specialized educational programmes on the marine environment.

With assistance from a West German consultant, the Institute was able to plot priorities in Marine Resources after consultations with a number of regional Governments. These were submitted as proposals for a substantial grant from the European Economic Community (EEC) to enable exploratory and experimental work to be undertaken.

The Institute runs the University's Diploma in Tropical Fisheries programme. It also assists with the teaching of a number of courses of the School of Natural Resources and has helped the University of Auckland final-year Marine Biology students with the organization of field courses in Fiji.

The Institute of Marine Resources attracts academics and research workers from overseas universities. They assist the Institute in its research programmes and research work in a variety of areas including mangrove areas, coral reefs, deep sea snapper and the fresh water clam, etc. The Institute is assisting the Kiribari Government establish an Atoll Research Unit in Tarawa.

4. THE INSTITUTE OF NATURAL RESOURCES

This Institute was established to contribute to the promotion of awareness and understanding of the natural resources of the South Pacific region and to undertake training courses, workshops, research, and consultancy assignments which increase the capacity of the region's peoples to exploit and control these resources for their long-term benefit.

Research is being pursued in the Institute in the use of alternative energy resources, particularly solar energy, wood, and vegetable oils. A seminar was organized in 1977 on Wood As An Alternative Energy Resource. Earlier courses included a Basic Earth Science Course for persons employed in relevant Government departments in the region, and courses in laboratory instrumentation for technicians working in hospitals.

Consultancy has been undertaken for a number of commercial firms in the analysis of soya bean oil, and Governments have consulted the Institute on topics such as radio communications.

To assist in the improvement of the quality of science education in the region, the Institute has initiated a Science Readers Series for schools.

5. THE INSTITUTE OF PACIFIC STUDIES

This Institute aims essentially at improving the qualifications, experience and confidence in the peoples of the Pacific Islands in undertaking research work on their own problems and producing solutions which are suited to the traditions and the situations of this region. It has encouraged research and publication by Pacific

Islanders on subjects of interest and concern to the region, and is guiding a lengthy series of national studies in all the countries supporting the University. Books, monographs and papers on land tenure in the various countries, politics, autobiography, history, especially as seen by Pacific Islanders have flowed from the Institute's publication activities. Over a hundred Pacific Islanders have had writings published through the Institute.

Seminars, workshops, and surveys have been conducted by the Institute on the administration of justice, translation techniques, language policy and practice in multilingual societies, local government, and development policy. Associates and helpers of the Institute also undertake research in significant areas, such as land tenure and policy, tenure and policy, trade unions, creative expression and family law.

The Institute of Pacific Studies is also responsible for organizing the Pacific programme for internal students on the Laucala Campus. This is a series of lectures, demonstrations and cultural events including an island months series featuring a particular national culture or a regional organization each month. This programme is an integral part of the Preliminary I and Foundation teaching programmes of the University.

6. THE INSTITUTE OF SOCIAL AND ADMINISTRATIVE STUDIES

Since 1970 the University has been engaged in mounting vocationally oriented short-term courses in public administration, social welfare, financial management, and training programmes for supervisors, training officers and programme planners. This function has been taken over by the Institute of Social and Administrative Studies with greatly expanded programmes. More than 300 men and women from both the public and the private sectors took part in courses mounted by the Institute in each of the last several years.

Courses are also conducted outside Fiji to help increase the University's awareness of the needs and problems of other countries of the region. In 1978, for example, courses were held in Tonga, Western Samoa, the Cook Islands, Niue, New Hebrides and Solomon Islands.

More specialized courses of shorter duration are being developed for the private sector. Specialist staff (e.g., in accounting and management techniques) have been recruited and assistance from agencies such as the Commonwealth Fund for Technical Co-operation, Institute Tadbiran Awan Negara (INTAN), Malaysia, and others are being obtained.

Regional people are encouraged through internships and fellowships to be attached to the Institute for a few months to pursue areas of research or participate in courses they find of interest and value to them.

7. THE INSTITUTE FOR RESEARCH, EXTENSION AND TRAINING FOR AGRICULTURE

See separate commentary in Annex F.

H. EXTENSION SERVICES*

Extension Services operates as an autonomous unit within the University. Its most important task is that of creating and strengthening through its programmes an appropriate University presence in the region. Its headquarters are on the Laucala Campus in Suva where extension courses are prepared for students unable to enroll for residential or part-time studies. In addition, University Extension Centres are located in six of the countries of the region outside Fiji.

I. REGIONAL CENTRES

The Centres are the physical expression of the University's outreach. Established with generous assistance from the Carnegie Corporation of New York, they operate in the Cook Islands, the Kiribati, Niue, Solomon Islands, the Kingdom of Tonga and Western Samoa.

Under their resident Directors Centres help to service the central teaching, research and consultancy programmes of the University in so far as these relate to the countries in which they are based. They also develop continuing education programmes appropriate to local needs.

There is also a Centre in Fiji. This does not have to carry out the full range of functions undertaken by Centres elsewhere since the administration of the Extension Studies programme and the operation of the University's Satellite Communication Project can be handled by staff attached to the main office on the Laucala Campus. However, it mounts an ambitious continuing education programme for Suva and is gradually extending its activities to other parts of the country.

J. CONTINUING EDUCATION

Continuing education covers a wide variety of activities including public lectures, courses, workshops, seminars, discussion panels and forums. Each Centre is responsible for developing a national programme relevant to local needs and interest. The pattern which is emerging tends to vary from one country to another.

Some programmes are regional rather than national in character and draw participants from a number of different countries. This is particularly true for the field of the arts in which a series of workshops has been mounted with generous financial assistance from the Australian Government.

Extension Services also serves as the headquarters of the UNESCO Oceanic Cultures Project which has done much to promote the arts and crafts of the Pacific.

Of a regional nature, too, are seminars and conferences involving members of the public which are made possible by the University's participation in the PEACESAT satellite communication system.

* Not to be confused with Agricultural Extension, a major component of this project proposal.

Some Centres themselves use radio as an extension medium at the national level, preparing programmes for their local broadcasting authorities. In addition Extension Services provides taped programmes made by students on the Laucala Campus for transmission in their home countries and other programmes of regional interest.

K. EXTENSION STUDIES

Extension Studies courses are broadly based catering for practicing teachers and also providing education of a more general kind and reaching out to other employees in the public and private sectors. There has also been an increasing emphasis on multi-media teaching, printed materials being supplemented by audio tapes, satellite discussions and local tutorials.

L. SATELLITE COMMUNICATION PROJECT

The USPNET Satellite Communication Project supports and strengthens the regional outreach of Extension Services. Under the auspices of the United States National Aeronautics and Space Administration, with the co-operation of regional Governments and financial support from the Carnegie Corporation, the University began participating in educational radio projects of an experimental nature using the NASA ATS-1 satellite in 1972.

Initially joining the ATS-1 link under the Hawaii-based PEACESAT Project, USP applied to NASA for permission to operate its own experimental programme in 1973. The request was granted and the University installed two-way radio terminals in all its regional Centres (with the exception of that in the Cook Islands, where facilities are shared with a PEACESAT advisory group and operated by the Government). Stations were also installed at Malapoa College in New Hebrides and in Tuvalu.

This system has proved invaluable, not only in enabling students to speak directly to tutors in Suva, but also in facilitating the administration of an increasingly complex regional operation.

In 1978, additional funding was secured from the US Agency for International Development to upgrade and expand the satellite communication system. In 1979 a network of thirteen terminals will be established providing not only two-way audio communications but also a range of other educational facilities including various methods of video transfer. This experimental system is planned to provide the University with the data and experience necessary to translate to a long-term communications capability around the region using the developing regional telecommunications network.

ANNEX E

STUDENT ENROLLMENT PROGRAM
USP - School of Agriculture, Alafua

	Actual				Projected				
	1977	1978	1979	1980	1981	1982	1983	1984	1985
DIPLOMA LEVEL									
1. Diploma in Tropical Agriculture (D.T.A.)	72	77	84	101	110	130	140	150	150
2. Diploma in Teaching (for Agric. Teachers)	-	-	-	-	20	38	54	56	60
	72	77	84	101	132	168	194	206	210
DEGREE LEVEL									
1. B. Agr	25	40	40	48	54	60	70	80	90
TOTAL	97	117	124	149	186	228	264	286	300

NOTES

- a. Diploma level figures do not include Fiji students who attend the Fiji College of Agriculture
- b. Degrees offered are now general. In future, plan to have degrees that offer majors in livestock, crops, plant protection, soils, extension, ag education as well as general agriculture

ANNEX F: THE INSTITUTE FOR RESEARCH, EXTENSION AND TRAINING IN AGRICULTURE (IRETA) ON THE ALAFUA CAMPUS

In view of the increasing amount of research and consultancy work for the region being undertaken by members of the staff of the School of Agriculture, a proposal was made to establish an Institute on the Alafua Campus.

The essential function of this Institute, as an Institute of the University, would be to facilitate the making available of the resources of the School of Agriculture for research, short-term training, extension work, and consultancy for regional governments or organizations and doing so in such a way to safeguard the ongoing teaching and research programmes of the School.

It was recommended that this Institute for Research, Extension and Training in Agriculture (IRETA) should be established and the Senate was asked to agree to this proposal to Council. On May 28, 1980, the Senate directed that the Institute be created.

In an April 1980 meeting at Alafua, with the Directors of Agriculture of many of the regional countries, it was further proposed that the Directors of Agriculture of the University region or their nominees, together with the Dean of the Alafua Campus and the Head of the School of Agriculture should constitute an Advisory Board to the Institute. This is on the model of the Advisory Board of the Institute of Education, and like this Board, that for the IRETA would be expected to meet once a year to guide the Institute in its work, to determine areas of priority, and to agree on projects which have regional significance, as well as to assist with the approaches to funding bodies.

The following represents suggestions made by the conferees as to what some of the immediate activities of the Institute may include by the new director:

- (a) collaborate with and encourage meetings of regional specialists and that he should keep abreast with research work undertaken by other agencies in the region and other countries in the Pacific which are not members of USP;
- (b) explore the possibility of establishing a regional Rural Science Information Service;
- (c) prepare proposals for a new scientific journal to be known as the South Pacific Journal of Natural Resources;
- (d) establish and administer a regional consultancy service, using where possible experts from within the region, and a consultancy fund to support its activities;
- (e) examine the need for technical support services in Agriculture and consider the most appropriate methods of developing services within the region;
- (f) assess the requirements from the countries of the region for short-term training courses and arrange the offering of appropriate courses;

- (g) assess the regional research requirements and should prepare project proposals for approval by member governments so that external funding may be sought.

The Directors of Agriculture also expressed the hope that close liaison would be maintained between the Institute and the South Pacific Commission and suggested that each second year a joint meeting of Directors of Agriculture of the SPC countries and of those of the USP countries be held to ensure such cooperation. The new proposed USAID project to the University of the South Pacific which is directed primarily on Agricultural Research, Education and Extension will have active participation by agricultural professionals from U.S. Universities (principally University of Hawaii and Cornell) and their inputs into the USP program will be channelled through this Institute located on the Alafua School of Agriculture Campus.

The University of the South Pacific

Serving the Cook Islands, Fiji, Kiribati, Nauru, New Hebrides, Niue, Solomon Islands, Tokelau, Tonga, Tuvalu, Western Samoa



From the Office of
The Vice-Chancellor,
Dr. James A. Mara

JUN - 3 1980

P.O. Box 1166, Suva, Fiji.
Telephone: 313900.
Cables: University Suva. Telex: FJ2276.
Your Ref:
Our Ref:

May 29, 1980

Dr. K.W. Bridges
Acting Assistant Director
Hawaii Institute of Tropical
Agriculture and Human Resources
University of Hawaii
3050 Maile Way
Honolulu
Hawaii.

Dear Dr. Bridges

I was very pleased indeed to learn during your recent visit here of the excellent collaboration which has been taking place between you and your colleagues of the University of Hawaii and the representatives of this University in relation to the projected USAID funded assistance to agriculture in the South Pacific. I am also satisfied with the general agreement which has been reached in the important issues in the draft project paper and this letter serves to give our University's acceptance of these.

Further, I can now inform you that at its meeting yesterday afternoon, the Senate of the University recommended to Council that an Institute for Research, Extension and Training in Agriculture (IRETA) should be established in association with the School of Agriculture on the Alafua Campus. I shall use the executive authority of Council delegated to me to establish this Institute immediately.

It may be helpful in clarification, if I add a few specific comments on the draft project paper. As you are aware, we see the implementation and the management of the Project and the collaboration between our institutions as being manifested through IRETA. Its overall direction will be of course from the office of the Vice-Chancellor but the responsibility for its on-site management will be devolved on the Dean of the Alafua Campus. The Director of IRETA will be charged with implementing and coordinating the activities of the Project and will report to the Dean regularly on its progress and achievement. He will also report to the Vice-Chancellor through the Dean.

We believe that the Project will best be integrated and management most efficient if the technical assistance personnel supplied by you as the collaborating institution are appointed as Fellows within this Institute where they

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2.

are able to work, as other Fellows do, to the Director. They will then enjoy the privileges and carry the responsibilities of members of our staff, with whom they will be working as colleagues. I appreciate of course that there will be a number of matters in which it is desirable that one of the Project Fellows should act also in a liaison capacity with you and his associates and in a coordinating capacity with the Director of IRETA. We propose therefore that in consultation with you, we designate a suitable person as a Senior Fellow within the Institute and ask him to undertake this role. From our experience with other Projects in the past, we are a little less than happy with the concept of a 'Team Leader' carrying direct responsibility for the execution of aspects of the project to you as the collaborating institution.

A third point is the need for the Project to be designed with an adequate degree of flexibility. Our Council sees this project as a long-lasting one of major importance, and it would be a tragedy if it were at this stage written in a way which constrained either yourselves or us within limiting bounds. For example, in a project with aspects of extension, research, and teaching in a particular balance, it is important that such balance should be seen as an overall object of the project and not necessarily one which is manifested in the activity of each individual participating. It is important too that the Project should be able to respond in an appropriate manner to changing needs of the countries of the region, especially those brought about by the successful operation of the Project itself. We would like as much flexibility as possible written into the project so that, in collaboration with yourselves and with the approval of the AID through its Regional Office, full advantage can be taken of opportunities which present themselves during the term of the Project to further its objects and to make appropriate minor adjustments as it develops.

Given the objective of this Project, that it should be as far as possible directed and organised in such a way as to reach out into the various countries of our region, you and we have agreed on a large professional input on the side of agriculture extension. It is in this connection that you have sought to sub-contract for technical assistance from Cornell University, and we are pleased at this development. But the preparation and production of material on the professional side of agriculture will be less than fully utilised if there is not adequate capability on the

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technical side of the media through which the agriculture message must be channelled. It appears to us that there is an urgent need early in the project for a further person who is experienced and skilled in the production side of audio and audio-visual material for agriculture extension purposes. Such a person would not only give a lead to the conceptualising and organising of the areas in which the School and the Project are best able to organise integrated programmes for agricultural extension; he would also be able to advise and assist with the special needs of the University's satellite equipment, production studio, and facilities. Accordingly we would regard an appointment in this area as of very high priority.

Finally, I wish to put on record the University's desire to ensure that as far as possible the benefits of this project should accrue to the peoples of the South Pacific region. I am sure this is the wish of the University of Hawaii also. It is important therefore that as much as possible of the procurement of equipment and furniture, as well as all the construction and buildings and facilities should be the responsibility of the University of the South Pacific. Accordingly, this University is ready and willing to enter into a direct contract with AID where this is possible and wherever it can facilitate the long-term objectives of the project.

I look forward to a long and very successful collaboration in this Project as in other areas between our two institutions.

Yours sincerely

James A. Maraj
Vice-Chancellor.

c.c. Chancellor Long)
Provost Heenan) University of Hawaii at Manoa
Dean Furtick)
Mr. R. Craig, South Pacific Regional Development Office,
American Embassy, Suva
Dean, Alafua Campus
Director of Planning & Development, USP

ANNEX H: PROJECT ANALYSES

A. SOCIAL ANALYSIS

Careful consideration must be made of the social impact of the proposed USAID project on the island communities of the South Pacific, since agricultural development programs generally induce some social change as well as providing economic benefits. Likewise, because of the great diversity of cultural groups in the region, project planners must be aware of the unique cultural heritage, environmental, economic technological, and socio-political factors that can mitigate against successful program development.

In general, the USP region of influence can be divided into two regions: the Eastern Pacific or Polynesia, and the Western Pacific or Melanesia (plus isolated states in the Northwest Pacific or Micronesia). This broad division differentiates some common kinship practices, basic ethnic classifications, language types, and assorted cultural traditions such as land use, sex roles in the division of labor, and village political structures. However, it is not efficiently sensitive to the numerous similarities and differences among the eleven countries of the region to be of appreciable assistance.

The one heritage common to all the Pacific Islanders is their rural upbringing. Most of the people in the region still live and work in small traditional villages, often at considerable distance from the "urban" centers of the country. It is estimated that 70-80% of all Pacific Islanders are "employed" in the rural sector. Subsistence farming and minimal cash cropping are still the primary means for villagers to earn a livelihood throughout the region.

Understanding the traditional social organizations of the villages and the adaptations that are occurring in the rural sector due to modernization is paramount for the development of appropriate agricultural intervention programs.

All Pacific Island communities face the same general situation of rapidly changing social systems. Widely occurring challenges to traditional political systems, communal ties and patterns of settlement and land use are evidenced as communities are finding it more and more difficult to achieve new economic and socio-political goals within the traditional social organizations. Many contemporary island farmers have found that they are unable to meet the requirements of "Western" commercial agriculture because of obligations to traditional systems. Although the nucleated village model is common throughout the region, several patterns have developed in the sexual division of labor and labor allocation, as well as major differences in leadership and resource distribution. Nonetheless, farming labor generally is mobilized based on kinship or village group patterns under the direction of a group leader or chief. This leadership structure, coupled with traditional land tenure and community pressures on time allocation, influences the types of tasks performed and range of crops grown within the community.

It is common for Pacific Island farmers to be caught between the demands of modern agriculture for regular and long labor inputs and the continuing social demands of family, church, or traditional leader for participation in group tasks or ceremonies. Regional agricultural planners must recognize that such social systems organized on non-monetary value systems determine the perceived benefits and costs of labor allocation to agricultural and other activities. To increase agricultural production within the region, the agricultural development projects should be designed to fit with local work patterns, time allocations, and social and administrative organizations rather than imposing Western standards of labor use and productivity. Depending on the social organizations involved, planners may stress individual, family group, or large community group activities.

With the recent and increasing emphasis on commercial agriculture, there has been a shift in many communities away from large group subsistence activities and central nucleated villages. Instead, individual homesteads on consolidated holdings with specialized crops are becoming more prevalent. This is seen in Fiji, for example, where there has been a marked increase in the number of individual homesteads and dispersion of families from traditional rural villages as commercial agricultural opportunities have increased and urban centers have begun to offer many of the social needs of the traditional villages.

Major movements of villagers to urban centers has been commonplace among the islands, with resulting strain on the food availability in towns, and a gradual shift from traditional subsistence or barter economies to more monetary systems. To support an expanding demand by consumers for technical goods and canned foods, island communities have had to make major adjustments in their traditional social organizations. In several countries, the export of youth to foreign countries has been fostered, partially because the islanders view this as a most effective avenue for social advancement, but also since the remittances returned to the family form a major source of income for the community.

While social change has been rapid in all of the Pacific Islands, change in traditional leadership and land tenure patterns has been uniformly much slower. In most of the island communities, the overwhelming proportion of lands is held and used under some form of "customary" tenure. The percentage of land designated as "customary" varies from 73% (Tonga) to 88% (Solomon Islands) in the larger countries. Post-colonial changes have put severe legal restrictions on the use of this land, often resulting in extremely difficult procedures required to change land use in response to new needs such as population increases, changing consumer demands, and new agricultural practices.

Since much of the earlier commercial agricultural activity has been toward long-term cash cropping, there has been an accelerating shift away from traditional systems of individuals having temporary use of kinship or customary land to a desire for more exclusive rights for longer defined periods. The process of individualization of land tenure has gone farthest in Fiji with its large population of tenant farmers of Indian descent. However, other countries have continued to follow the traditional use of customary land worked under the leadership of village chiefs

or group heads. In the Cook Islands, for example, members of "drinking groups" will work as teams harvesting taro from each farm in turn. In Tonga, farmers have revived semi-traditional work groups of kin and friends for yam cultivation. In the Solomon Islands, there has been government support of kinship groups to purchase and revitalize decaying expatriate plantations. In Western Samoa, the village chiefs (matai) can still muster a sizeable workforce through the traditional chiefs' structure. Careful consideration will be given throughout this project to the most appropriate system for improving agricultural production within the various social organizations and land tenure systems of the countries. Traditional patterns will change, but such changes should be controlled by the people themselves. A greater understanding of and desire to work with traditional social organizations rather than exclusively fostering the individual entrepreneur, will provide the region's communities with a choice of alternative approaches to best fit their social and agricultural systems.

One of the major problems facing the USP project is the continuing low status of agriculture. A large percentage of young islanders desire to leave the village and the farming profession for more rewarding occupations found in the urban areas. Throughout the region, schooling is viewed as the means for children to increase their wealth, status, power and opportunity for social and economic advancement. Generally, to achieve this has meant to leave the village agricultural activities.

There has been a strong commitment by the nations to literacy and formal education. While the Solomon Islands report only a 13% literacy rate (as compared to Western Samoa's 98%), the Solomon Islands have 55% of their children enrolled in elementary or secondary schools. Several countries report better than 90% enrollment (Niue, Tokelau, Nauru, Fiji). Education is used by parents to free their children from the hard physical labor and poor economic returns associated with farming, which has very low status throughout the region. Attempts to change the status of agriculture will not have an effect unless they are directed at increasing profitability and reducing the heavy labor costs of farming. This means that considerable emphasis must be placed on providing extension training and appropriate technologies so as to increase the lot of the village farmer, and to communicate the advantages of farming as an occupation through the school system.

The important role which women play in agriculture throughout the South Pacific region is recognized. In Melanesia, women perform the traditional tasks in the house while having responsibility for planting, weeding and harvesting subsistence gardens and the husbandry of pigs. In Polynesia, more agricultural work tends to be done by men. However, women are particularly active in animal husbandry, maintaining dairy cattle, and engaging in pig and poultry raising. Many are also engaged in maintaining small garden plots both for subsistence and cash.

Savings in time and labor from the introduction of more efficient techniques and tools have not accrued to the women. Almost all agriculture extension work to date has been done by men, for men. That sexual taboos limit communication between women and male strangers is one explanation of

the gap. Another explanation is that women are unaware of how to take full advantage of the few opportunities that present themselves.

To enhance the contribution of rural women to the development process, more precise knowledge of women's contribution to the island economies is needed. Studies underway at the University of the South Pacific Center for Applied Studies and Development and other USP units will assist in the improvement of agricultural extension, adult education and family planning/health services for rural women. Increasing the enrollment of women in USP agricultural education and agricultural science programs also is underway to raise the regional awareness of the potential for women in agriculture.

In summary, notable social change has been recorded throughout the islands, resulting in appreciable changes in community and family living patterns and in individual behaviors. The impact of such changes on the social and economic fabric of fragile ecosystems has been severe, and the implications for the agricultural sector are quite serious. SPC reports summarizing the social breakdown in most parts of the region have noted that most of the South Pacific islands face some or all of the following social problems:

1. Increasing migration to urban centers with substandard living conditions.
2. Loss of rural agricultural manpower to the lure of cash wages.
3. Rising unemployment in urban areas due to lack of training and jobs.
4. Rising volume and cost of imported foods for which substitution could be made.
5. Separation of family wage earner seeking urban jobs leading to marital discord, neglected children, extramarital affairs.
6. Population increasing faster than family resources can support.
7. Breakdown in traditional patterns of family care of aged and handicapped.
8. Rise in juvenile delinquency and adult crimes.
9. Growing dependency on foreign aid.
10. Increasing consumption of alcohol and accompanying trauma to families and loss of human resources.
11. Cultural erosion due to heavy foreign media influx, including films, magazines, school texts, religious tracts, and music.
12. Undermining of the customary social value systems through commercialization of ceremonies, creative arts, and traditional hospitality.

The countries of the South Pacific are challenged with meeting these problems, and must examine the costs of continuing economic growth at the expense of rapid social change. To counter these problems there is a great need for increasing the supply of local foodstuffs to the urban centers, for social redistribution of income and political power to the rural sector from the urban elite, for developing and enriching village life, for supporting communal lifestyles sensitive to the resource limitations of the islands, and for developing new employment opportunities for the rural sector. Agriculture is the most promising sector to address these needs, and the establishment of socially-sensitive agricultural REE capabilities in the region appears to be the best way to start.

B. ECONOMIC ANALYSIS

It is problematic how long many of the countries will be able to sustain the growth which has marked their economies over the last few decades. The strategies available to economic planners is, of necessity, constrained by the limitations the natural and human resources of the countries. The Pacific Island countries, in general, are too small to command the amount and variety of resources necessary to continue rapid economic growth.

The Pacific Nations differ greatly in structure and revenue derived from export trade, taxes, government services, tourism, remittances and foreign aid. The export trade for the region in 1977 amounted to \$312 million, with agricultural commodities accounting for 57% of this total. Nauru's phosphate exports were 22% of the region's total, with all other commodities accounting for only 20% of the total.

Two commodities dominate the agricultural export trade, with sugar providing 62% and coconuts 28% of a total \$178 million in 1977 exports. Three other commodities (cocoa, palm oil and ginger) account for almost all the remaining agricultural export trade.

The Pacific Island nations are all dependent on one or two major export crops. Fiji exported \$110 million worth of sugar in 1977, and \$11 million worth of coconuts. Western Samoa's major crops were cocoa (\$8 million) and coconuts (million). Niue had \$100 thousand dollars in vegetable exports and \$80 thousand in coconuts. For the remaining seven countries (excluding Nauru which has no agricultural exports), coconuts were the only export commodity of any significance (total value \$32 million), and it is subject to rapidly fluctuating world market prices. For example, the 1976 copra price in the region was approximately one-half that in 1977.

The importance of taxes, government activities and tourism in the economies of the countries is quite different. Taxation accounts for less than 15% of the total revenue raised in some countries (e.g., Cook Islands, Kiribati, Western Samoa, Tonga). Taxes account for 50% of revenues in Fiji. The Solomon Islands derives 25% of its revenues from taxes, and is the only country to levy an export tax (which provides 64% of the taxes).

An important source of revenue for some of the smaller countries (Cook Islands, Tonga, Western Samoa) is derived from such government activities as the sale of stamps and coins, electricity, etc. In some cases up to 30% of government revenues have been reported from these activities.

Tourism is still a fledgling industry in the South Pacific. Only Fiji derives high revenue from tourism, and that has not increased as rapidly as anticipated. The Cook Islands, Tonga and Western Samoa have also begun active tourism industries. Facilities and transportation in the other countries are minimal.

Remittances, private transfer of money into the country from individuals temporarily or permanently working outside, are important in several countries. Tonga and Western Samoa have tacitly supported the export of their youth, primarily to New Zealand, to maintain the \$6 to \$10 million each country annually receives through the mail.

Foreign aid support allows many countries to balance their budget. Budgetary aid primarily from the United Kingdom, New Zealand and Australia has been appreciable, but will eventually be reduced or phased out in some countries. Foreign grants still support most development programs in the region, particularly in the Solomon Islands, Tonga, and Western Samoa. Per capita official development assistance in 1977 varied from none in phosphate-rich Nauru and \$36 in Fiji to \$712 in Tokelau and \$923 in Niue. Recent analyses of the impact of reduction in this aid have predicted that such a change must be met with drastic curtailment of present expenditures for government services, or a major expansion in other income-producing sectors to meet the costs of government services and the rising costs of imports.

The ability of many island nations to meet their balance of payments without outside assistance is problematic. The 1977 value of imports to the region was approximately \$425 million, or 136% of the \$312 million earned from exports in the same year. Food imports into the region amounted to 24% of the total import value, with an average of \$79 per capita. Again there was a wide variation in the country statistics; Nauru averaging \$259 per person for food and the Solomon Islands averaging only \$22 per person.

Since the agricultural sector employs most of the islands' workers, and accounts for most of the export earnings needed to pay for the increasing imports of food machinery and energy needs, strengthening agricultural capabilities will have a major impact on the economic health of the region. Presently there is a need for improving the productivity of the agricultural sector, since its share of gross domestic product is usually much less than its relative share of the human and natural resources in the region. Because a large percentage of farmers are engaged in subsistence agriculture, rather than productive commercial agriculture, only about 40% of the total monetary output of most countries is produced by the agricultural sector. In some countries, such as Fiji, large scale commercial ventures provide a better economic return for their share of the labor pool, but even here there has been a sharp fall in total output due to a drop in the number of people actively farming.

From 21% (Cook Islands) to 80% (Solomon Islands) of the labor force is reported to be engaged in agricultural activities. However, in the decade ending 1976, sharp declines in the percent of economically active laborers engaged in the agricultural sector had been recorded in Tonga (a drop from 74% to 51%), Fiji (drop from 54% to 44%) and Cook Islands (45% to 21%). In Western Samoa, this fall has been less pronounced, and in some countries, such as the Solomon Islands, there appears to have been an increase in the agricultural labor force due to new commercial ventures.

Employment problems in the various countries are often quite different. Generally, there is not widespread and persistent unemployment, although this is increasingly the case around urban centers as immigration from rural sectors increases. In the past, the surplus of urban youth has often been reduced by substantial out-migration from the Cook Islands, Niue, Tonga and Western Samoa. In some cases there is actually a labor shortage in the rural areas, where there may be insufficient manpower to initiate a development scheme. Some of the countries (e.g., Solomon Islands and Kiribati) have limited opportunities for new jobs, requiring that new labor force entrants be absorbed in the rural semisubsistence agricultural sector. Assistance is required in the creation of new jobs in both rural and urban areas, and in the provision of training for unskilled workers.

There are few sources of potential employment in the region outside of government, manufacturing, tourism and agriculture. Already in many countries government spending for services is difficult to maintain without foreign budgetary aid. With a surplus of urban labor, there is potential for increased manufacturing (which is presently between 2% and 11% of total output), but with a lack of other resources, only the processing of agricultural products appears feasible on a large scale. At the present there is relatively little processing of agricultural products in the region (the exceptions being sugar processing, extraction of coconut oil and canning of fish) and it is questionable whether the region is capable of increasing its agricultural processing capacity sufficiently to counter the increasing demands for import foods and manufactured goods. However, research and consultation to increase agricultural processing should be supported.

Any input in the agricultural sector must consider the importance of subsistence production as part of the overall economic picture. While few villages operate on a purely subsistence level, most mixing cash with subsistence cropping, a substantial percentage of farm labor operates without monetary incentives. Agricultural assistance brought into the region must take this into consideration, and seek to increase the efficiency of subsistence agricultural practices. At the same time, some attention must be drawn to the importance of supporting cash cropping, since it is through this sector that surpluses can be generated to provide exchange for imported consumption and investment products that the small island economies cannot efficiently produce.

Additionally, the regional agricultural sector needs to expand to cover the costs of increasing governmental and social services and to provide investment capital for new production.

Recent economic surveys of the region have not been optimistic about the ability of the agricultural sector to provide substantial new revenues without substantial assistance. Even with the most optimistic view of the possibilities for increasing capacity in fisheries and traditional crops such as coconuts, continued economic growth in the smaller countries of the region appears to be impossible. The region desperately needs substantial support in the agriculture sector. USP appears to be the most viable regional institution to affect change across the several island nations. USAID input to build regional agricultural capacity appears to be essential if the countries are to avoid either of the two most probable options that they face: Acceptance of a no growth state or permanent dependence on foreign aid.

C. ENVIRONMENTAL ANALYSIS

The range of environmental conditions and constraints in the South Pacific region parallels those described in the social and economic analyses. The resulting agricultural systems are varied both in their composition and the management practices which are applied.

Traditional subsistence agricultural systems, when not subject too many pressures for expanded production, are relatively stable and do not present any appreciable concern for environmental disturbance. The types of agricultural programs promoted by the University of the South Pacific School of Agriculture are expected to reinforce the viability of such subsistence systems and reverse (or at least stabilize) the potential environmental disruption which might be caused by exploitive development activities. The actual field manipulations expected to be performed in this project in the development and testing of such new methodologies are relatively small scale and will be done on existing experimental plots.

An example of an effective methodology which will be promoted by this project is the use of an adapted "Benchmark Soils" network where agrotechnology transfer is based on a thorough analysis of the soils and the application of practices developed for the specific soil characteristics. This will help minimize current problems of erosion, for example, by providing a large body of relevant information of optimal management techniques from experiments conducted elsewhere. This approach is environmentally efficient since it minimizes redundant experimentation and allows a focus on those items most in need of study.

Likewise, the promotion of adapted technologies for low-input farming systems, such as the utilization of Biological Nitrogen Fixation systems, is expected to make use of available knowledge and have an early impact on enhancing the field environments of subsistence agriculture. This may result in less land being needed (or it can be rotated in and out of production more slowly) and still achieve equivalent production levels.

It is expected that information will be provided on the utilization of what are now considered marginal agricultural lands, such as might be defined by either poor soils or a poor or inferior quality water supply. With the greater use of these marginal lands, it is expected that some pressure on the prime-quality lands will be removed and they may be better

preserved for long-term production. A variety of new or adapted practices are available which might be considered for use.

There are a number of natural hazards to agriculture which can influence the long-term success of development projects. Many of these hazards can have their effects minimized with the appropriate selection of plant material, farming practices or the use of appropriate technology. For example, the proper choice of crops will minimize disruption caused by high winds (or cyclones), some farming systems are particularly resistant to prolonged drought, and particular plant varieties are better adapted for disease and pest resistance.

The USP project can make a number of contributions to the enhancement of the agricultural systems of the South Pacific region with the appropriate selection and adaptation of many existing technologies. The programs must be fully integrated, by a consideration of all of the aspects of the farming system, if they are expected to be successful. Success in this region must consider the maintenance and enhancement of the environment. This is an achievable goal and the activities of the USP project are expected to provide the capabilities on which such decisions may be made.

ANNEX I: INITIAL ENVIRONMENTAL EXAMINATION

PROJECT LOCATION: South Pacific Region

PROJECT TITLE: Asia Regional Project
South Pacific Island Agriculture Development
#498-0267

FUNDING: \$5,260,000 grant
Life of Project: 5 years

IEE Prepared by: Allen C. Hankins
ASIA/TR AID

K. W. Bridges
University of Hawaii

**ENVIRONMENTAL ACTION
RECOMMENDED:** Negative Determination

CONCURRENCE:

I have reviewed the Initial Environmental Examination for the Asia Regional Project "South Pacific Island Agriculture Development" and concur in the Threshold Decision recommendation for a Negative Determination.

Robert Craig
SPRID/Suva

AA/ASIA DECISION:

Based upon the review of the Project Paper, including the Initial Environmental Examination, I approve the Threshold Decision for a Negative Determination.

John Sullivan
Assistant Administrator
for Asia

INITIAL ENVIRONMENTAL EXAMINATION

I. EXAMINATION OF NATURE, SCOPE AND MAGNITUDE OF ENVIRONMENTAL IMPACTS

Description of Project

- A. The purpose of the project is to expand and strengthen the agricultural programs of the University of the South Pacific. Increased activities in research, education and extension are expected to provide a more adequate supply of trained people and information with which agriculture may develop in the region. These activities will be done in collaboration with the national governments and with full recognition of the social and economic systems and ecological constraints of the region.

To achieve the above purpose, a \$5,260,000 grant is being proposed for the University of the South Pacific which will be in collaboration with a U.S. Title XII institution(s).

Project funds will be used to provide technical assistance, training, commodities and facilities to support designated research, education and extension activities which will strengthen the University of the South Pacific's role in these key agricultural activities.

II. IDENTIFICATION AND EVALUATION OF ENVIRONMENTAL IMPACTS

Discussion of Impacts

A. LAND USE

1. Changing the Character of the Land through:

a) Increasing population

The proposed project which is primarily centered at the Alafua Campus of the University of the South Pacific, will contribute to the increase of population on the campus by approximately 185 people at the end of the five-year period. All these will be students, faculty and administration and support staff which is a part of the college expansion program.

b) Extracting Natural Resource

The field agricultural activities will change the soil fertility. However, these soil nutrients will be replaced periodically with the expectation that the soil quality will actually improve over the course of the life of the project.

c) Land Clearing

A limited amount of land clearing will take place for the development and use of the college's facilities and experimental fields. However, most of the vegetation will be in the form of weeds, soft brush, vines and other plant life that has no special or unique ecological or economic value.

d) Changing the Character of the Soil

No physical changes to the soil are contemplated except the routine removal of field stones and debris.

2. Altering Natural Defense of the Area

The the extent possible, all of the larger trees in the planned expansion of the campus will be left in their natural state. Only temporary and minimal soil erosion problems are likely to emerge as the campus will follow traditional Samoan practices of adding or replanting cover vegetation with commercial type and aesthetically pleasing shrubbery, trees, and grasses to specifically address soil problems principally related to surface water flow. Since this is an agricultural school, the farm management practices applied on the production sites will follow the basic principles of reducing soil erosion.

3. Foreclosing Important Uses

The land on the campus is for the research, teaching and education programs of the University School of Agriculture which will develop and promote agriculture programs which use technology appropriate to the South Pacific region.

4. Jeopardizing Man and His Works

Construction and land clearing or rehabilitation will be done according to acceptable practices in Samoan conditions.

5. Other Heavy Vehicle Traffic

There will be some increase in vehicle traffic due to the expansion of the overall agriculture program of the school. Campus regulations for vehicle use and traffic control will prevail.

B. WATER QUALITY

1. Changing the Physical State of the Water

There will be some runoff during heavy rains which will cause some soil erosion. Regular maintenance practices on the campus grounds and experimental fields will be applied to keep this potential problem to a minimum.

2. Changing the Chemical and Biological State

Chemical fertilizers, herbicides and pesticides to be used in this project do have a potential for creating adverse effects on the environment. However, all these chemicals will be used for research purposes by or under the close supervision of project personnel. Furthermore, only minimal effects are expected to result from residues of these chemicals in the runoff water.

3. Changing the Ecological Balance of a Water Body

None.

C. ATMOSPHERIC

1. Air Additives

Small amounts of dust may be produced periodically as a result of the field experiments of this project. Due to the heavy rainfall throughout the year this will be minimal and only occur in the immediate vicinity of the activities.

2. Air Pollution

The air pollution will be limited to some possible brush burning at the beginning of the project and to the increased use of fuel powered equipment, appliances, and vehicles resulting from the expanded agricultural program and increases in resident housing on campus.

3. Noise Pollution

The overall project's contribution to noise pollution is minimal. The use of metal and wood-working equipment in the teaching programs will cause some periodic noise which is localized at the campus' agricultural engineering facility.

D. NATURAL RESOURCES

1. Diversion, Altered Use of Water

Increased water consumption will be within the existing capacity of the campus facilities and not require any modification to existing water supply.

2. Irreversible, Inefficient Commitments

No irreversible or inefficient commitments will result from this project.

E. CULTURAL

1. Altering Physical Symbols

This project will change the physical appearance of the land by removing the natural weeds and brush from the land and replacing it with food crops, ornamentals, improved grasses and housing facilities in existing agricultural fields and residential areas.

F. SOCIO-ECONOMIC

1. Changes in Economic/Employment Patterns

This project will create employment for approximately 30 additional employees and will create educational opportunities for approximately 150 additional students per year by end of project. This is a positive element in improving their personal economic situation as well as contributing to the economic situation of the region.

2. Changes in Population

This project will not play an active role in changing the population of the country. It may influence the rates of migration from rural to urban areas (both in-country and abroad) through the promotion of rural agriculture. Increased health in the region may have an influence on survivorship rates.

3. Changes in Cultural Patterns

This project of itself will have no effect on changes in cultural patterns. Its activities will promote the retention of traditional rural practices and the use of traditional foods.

G. HEALTH

1. Changing a Natural Environment

This project should not affect any natural disease control vectors. It may promote the increased use of non-chemical means of pest and weed control.

2. Eliminating an Ecosystem Element

No element of any health related ecosystem is involved in this project.

3. Safety Provisions

All necessary recommended precautions will be applied related to classrooms, laboratory and field education programs as well as in the housing facilities.

H. GENERAL

1. International Impacts

Project provides teaching, extension and research supplies and commodities from sources outside the region that are socially and economically acceptable and which will contribute to overall well-being of the region's agricultural programs.

2. Controversial Impacts

This project is in line with the University of the South Pacific's program to develop appropriate capacity to serve agricultural research, education and extension in the region.

3. Larger Program Impacts

This project will have a positive impact on the future agricultural development programs of the South Pacific region.

III. RECOMMENDATION FOR ENVIRONMENTAL ACTION

On the basis of the information supplied herein, it is indicated that all project activities, except possibly the use of fertilizers and pesticides, will not have a significant adverse effect on the environment. Further, environmental analysis of fertilizer and pesticides use is not required under AID Environmental Regulations because they are to be used in "controlled experimentation exclusively for the purpose of research which is confined to small areas and carefully monitored." Therefore, a Negative Determination is recommended.

IV. IMPACT IDENTIFICATION AND EVALUATION FORM

Impact
Identification
and
Evaluation 2/

Impact Areas and Sub-areas

A. LAND USE

1. Changing the character of the land through:

- | | |
|---------------------------------------|------------------|
| a. Increasing the population ----- | --- <u>N</u> --- |
| b. Extracting natural resources ----- | --- <u>L</u> --- |
| c. Land Clearing ----- | --- <u>L</u> --- |
| d. Changing soil character ----- | --- <u>L</u> --- |

2. Altering natural defenses ----- --- L ---

3. Foreclosing important uses ----- --- N ---

4. Jeopardizing man or his works ----- --- N ---

5. Other factors

Heavy Vehicle Traffic ----- --- L ---

B. WATER QUALITY

1. Physical state of water ----- --- L ---

2. Chemical and biological states ----- --- L ---

3. Ecological balance ----- --- N ---

- 2/ Symbols: N - No environmental impact
 L - Little environmental impact
 M - Moderate environmental impact
 H - High environmental impact
 U - Unknown environmental impact

C. ATMOSPHERIC

- 1. Air additive ----- L
 - 2. Air pollution ----- L
 - 3. Noise pollution ----- L
-

D. NATURAL RESOURCES

- 1. Diversion, altered use of water ----- L
 - 2. Irreversible, inefficient commitments ----- N
-

E. CULTURAL

- 1. Altering physical symbols ----- L
 - 2. Dilution of cultural traditions ----- N
-

F. SOCIO-ECONOMIC

- 1. Changes in economic/employment patterns --- M
 - 2. Changes in population ----- N
 - 3. Changes in cultural patterns ----- N
-

G. HEALTH

- 1. Changing a natural environment ----- N
 - 2. Eliminating an ecosystem element ----- N
 - 3. Other factors
 - Safety Provisions ----- L
-

H. GENERAL

- 1. International impacts ----- L
 - 2. Controversial impacts ----- N
 - 3. Larger program impacts ----- M
-

ACTING
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ROUTED
TELEGRAM

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ACTION AID-35

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AIDAC

FOR ASIA/ARD PLUCKNETT FROM CRAIG

EO 12065, N/A
SUBJ: SOUTH PACIFIC ISLAND AGRICULTURE DEVELOPMENT

1. I HAVE REVIEWED RE-DRAFTED INITIAL ENVIRONMENTAL EXAMINATION FOR THE ASIA REGIONAL PROJECT OTE SOUTH PACIFIC ISLAND AGRICULTURE DEVELOPMENT UNOTE PREPARED BY HANKIN/BRIDGES AND CONCUR IN THRESHOLD DECISION RECOMMENDATION FOR A NEGATIVE DETERMINATION.

2. PLEASE PROCESS IEE FOR APPROVAL.

3. FYI - DR. FRANK BROSHNAHAN DOES NOT DEPART FOR ALAFUA UNTIL 26 JUNE TO ASSUME DUTIES AS ACTING DEAN 30 JUNE - END FYI.

CONDON

BEST AVAILABLE DOCUMENT

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ANNEX J: AGRICULTURAL OUTREACH AGENTS

A. CURRENT SITUATION

One of the problems facing the isolated nations of the South Pacific region is their lack of an adequate sharing in the research and extension activities needed for their joint success. Some large projects, generally funded by major donors, have provided good regional solutions to specific highly visible problems. But the multitude of smaller, more routine problems do not benefit from this regional approach. As a result, they often go without the benefit of experience gained elsewhere and the results are not applied widely. For example, it is frequently noted by agricultural experts in the region that there is often adequate information to solve many agricultural development problems. Some of this even comes from reports generated within the region. But there is little functional connection between the national institutions which would promote the sharing of information. So a solution is either sought anew or the problem is neglected. The small size of many of the nations is a probable reason for this; it has not been possible to hand specific authority to an appropriate individual to insure the proper regional connections. The addition of a network of agricultural outreach agents should begin to remedy this difficulty.

The remoteness of the nations also produces extreme logistical difficulties to research investigators (as well as those people attempting to extend contemporary agricultural techniques). With a cadre of appropriately trained agents in the region, considerable efficiency could be gained by having these agents perform specific tasks (such as obtaining samples or communicating information in the community) without requiring that an Alafua-based person actually travel to the neighboring country. When such trips are necessary, the agent would serve as a local informant to insure that the visit is properly handled.

Such a network of Agricultural Outreach Agents is practical. The USP satellite network is in use in all the countries and this is a good communication mechanism to assist in coordinating the agents' activities. There are also a number of USP agricultural graduates who could serve in such a role.

B. NETWORK REQUIREMENTS

The Agricultural Outreach Agents must have the proper training and be fully acquainted with the institutional backstopping capabilities, operational procedures of the USP-SOA and IRETA, contemporary techniques of extension, and a desire to operate as a group in the solution of regional problems.

One agent per nation is required as a starting system. In the early stages of this network, three nations appear to have a lower priority for direct inclusion by a full-time person; Western Samoa (due to its proximity to the Alafua Campus), Fiji (due to its relatively well developed Department of Agriculture and the presence of the Laucala Campus) and Nauru (without a substantial agricultural program).

C. SELECTION

In the initial stages, availability is expected to be a bigger problem than the need to select from a list of candidates. Care will be taken to avoid displacing key members of the agricultural establishment of a nation by their selection as Outreach Agents.

The general selection procedures, terms of employment, and hiring procedures in operation at USP will be used for this outreach program. A detailed job description, which is tailored to the specific needs of the network and the countries, will be developed prior to the recruitment of any agent.

USP ordinarily offers two-year employment contracts.

D. MANAGEMENT

The Director of IRETA will be the responsible administrator for this program. A small fund is being established to provide for the program's support needs, such as part-time secretarial assistance, supplies, communication, etc.

E. SCHEDULE OF IMPLEMENTATION

This program will be phased by the slow addition of new agents. It is proposed to start with the employment of two agents in the first year, and build at the rate of two additional agents per year, until a total of eight agents are in the network.

Periodic evaluation of the efficacy of this program, its management, and its distribution throughout the region, will be included in the project wide reviews.

ANNEX K: SCHOLARSHIP PROGRAM

A. CURRENT SITUATION

The majority of the students attending the USP School of Agriculture must be provided with some financial assistance. Most are sponsored by their government. The high cost of a USP education versus the low per capita incomes of most of the nations provides no real alternatives for the students.

B. THE NEED

In order to assure that a few additional people, particularly from the smaller nations in the South Pacific region, are able to attend USP-SOA, a scholarship program is being established. This is intended to be spread among the South Pacific nations and allow qualified students to receive appropriate agricultural training (either a diploma or degree) so that they will return to their country and further its agricultural development. Most of the nations are not now in a position to support such an additional student-support program, but it is hoped that agricultural programs will increase the ability of such nations to eventually take over more of this responsibility in time.

C. SELECTION PROCEDURES

The University of the South Pacific will establish the selection procedures for the awarding of the scholarships so that they fit within the accepted practices of the region. The Dean of the School of Agriculture will review the availability of students in each of the countries and the needs of each country during the next six months. This will provide a basis for recommendations on the priority for the initial selection. The time phasing of this program will allow it to begin gradually and add a few students each year through the life of the project. In this way, it will be possible to annually review the progress of this activity in achieving the goal of regional agricultural development.

ANNEX L: PROCUREMENT

Activities 1 and 2: Agricultural Extension and Agricultural Education

<u>Number</u>	<u>Description</u>	<u>Estimated Cost</u> ((\$000))
1. One (lot)	<u>Printed Materials</u> Specialized reference including teaching texts and printed instructional/demonstration materials	8
2. One (lot)	<u>Audio/Visual Aids</u>	42
	a. Filmstrip/slide projectors and accessories (15 sets) (6)	
	b. Motion picture projectors with accessories including screens/speakers (2 sets) (3)	
	c. Cassettes, recorders, tapes and other accessories (8 sets) (2)	
	d. Cameras, related photography accessories and darkroom equipment (1 set) (3)	
	e. Offset printing equipment and related supplies/replacement parts (25)	
	. Extension outreach kits for regional programs including audio/visual aids, teaching and demonstration supplies, training slides/graphics (8 sets) (8)	
3. One (lot)	<u>Support Equipment</u> Include storage/security cabinets (4), typewriters (2), easels (5), training wall boards and panels (5)	8

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NOTE: Above integrates Ag. Educ. needs since most items dual purpose for both Extension and Education. General extension equipment requirements are available to all disciplines within project and printing press facility is for use in all agricultural related activities of USP including the School of Agriculture library.

Activity 3: Agricultural Engineering

<u>Number</u>	<u>Description</u>	<u>Estimated Cost</u> (\$000)
1. One (lot)	<u>Reference/teaching texts, aids</u> How-to-books, visual aids, manuals on machinery, structures, hand skills.	5
2. One (lot) each sub-category	<u>Teaching, laboratory, and shop demonstration equipment</u>	36
	a. <u>Carpentry:</u>	
	<u>Demonstration power tools:</u> Table saw, lathe, joiner, jig-saw, drill, grinder, and one complete hand set.	(4)
	<u>Student Instruction:</u> Saws, hammers, planes, brace/bits, chisels, mallets, benches, vises, files, sharpening stones, replacement parts (8 sets)	(2.4)
	b. <u>Mechanical:</u>	
	<u>Demonstration equipment:</u> Hydraulic press, demonstration engine, grinders, hoist, jacks, dial gages, micrometers, complete wrench sets (English/metric), drill press, vises, tap & die sets.	(8)
	<u>Student Instruction:</u> Wrench sets (3) English, (3) metric, pliers, gages, screw drivers, chisels, hacksaws, etc., and replacements (6 sets)	(3)
	c. <u>Sheetmetal:</u>	
	<u>Demonstration equipment:</u> Break, shear, notch former, spot welder, electric shear, roll form.	(4)
	<u>Student Instruction:</u> Gas and soldering guns, drills, riveters, hand shears, hammers, measuring devices and spares including rivets, basic supply of steel, solder and flux (6 sets)	(1.6)

<u>Number</u>	<u>Description</u>	<u>Estimated Cost</u> (\$000)
	d. <u>Welding (include blacksmithing):</u>	
	<u>Demonstration equipment:</u> Arc welder, generator, gas welding and tanks, anvil, hammers, small forge, tongs, vises, clamps, etc., steel fasteners, drill press, power hack saw	(4)
	<u>Student Instruction:</u> Hammers, gloves, vise grips, clamps, measuring equipment, shields	(.5)
	e. <u>Electrical (wiring/motors):</u>	
	<u>Demonstration equipment:</u> Portable generator, elec. soldering, hand drills and bits, instruments (ammeters, voltmeters, ohmmeters) and replacement parts	(5)
	<u>Student Instruction:</u> Hand tools (pliers, cutters, strippers), ohmmeters, screwdrivers and replacement parts (6 sets)	(1)
	f. <u>Plumbing:</u>	
	<u>Demonstration equipment:</u> Pipe cutter and dies, vise and pipe vise, pipe benders, pipe wrenches, hammers, screwdrivers	(2)
	<u>Student Instruction:</u> Pipe vise, tables, pipe wrenches, replacement parts (4 sets)	(.5)
3. One (lot)	<u>Surveying Equipment</u>	10
	<u>Demonstration equipment:</u> Quality plane table, alidade drafting table, Philadelphia rod, range poles, chains (metric & English)	(8)
	<u>Student Instruction:</u> 2 each levels, rods, chains, 4 each alidade plane table, drafting tables/equipment	(2)

<u>Number</u>	<u>Description</u>	<u>Estimated Cost</u> <u>(\$000)</u>
4. 3	<u>Storage/Security Cabinets, Typewriter</u>	1.6
5. One (lot)	<u>Safety Equipment:</u> Safety goggles, head shields (extra lenses), gloves, first aid equipment	1.4
		<hr/>
		54

Activity 4: Crop Production and Soils

<u>Number</u>	<u>Description</u>	<u>Estimated Cost</u> <u>(\$000)</u>
1. One (lot)	<u>Classroom/Laboratory Aids</u> Specialized texts, manuals/audio-visual materials related to crop production and soils instruction programs.	6
2. One (lot)	<u>Laboratory Teaching/Diagnostic Equipment for Soils Related Programs</u> Includes: Soil core samplers with accessories (.4) Vacuum pump (.4) 5-bar pressure plate extractor (.5) Atomic absorption spectrophotometer (15) Stainless steel Wylie mill (2.5) Drying oven (.8) Muffle furnace (2) 15 bar ceramic plate extractor (.6) Conductivitymeter, soil (.3) Air compressor (1.0) Top loading balance (1.7) Centrifuge (general purposes) (1.0) Soil Sieves (.3) Perchloric acid hood (4) Accessories and supplies including chemicals, spare parts, glassware, gas (nitrogen/oxygen) (9.5)	40
3. One (lot)	<u>Laboratory/Field Teaching and Research Activities in Crop Production</u> 2 hand tractors w/plow, harrow seeder (10) 1 ea. seed drier/germinator/cleaner and accessories including moisture testers (7) 20 sets plant propagation tools, pruners, gardening tools, etc., for classroom and extension programs (3) Demonstration seed/root stock procurement (1) Field research accessories and maintenance supplies (tapes, hoses, markers, design tools, carts) (3)	24
4. One (lot)	<u>Support Equipment</u> Storage/security cabinets, typewriters (2), applied research supplies	5

75

Activity 5: Nutrition/Food Technology

<u>Number</u>	<u>Description</u>	<u>Estimated Cost</u> (<u>\$000</u>)
1. One (lot)	<u>Reference/teaching texts and instructional aids, typewriter</u>	2.4
2. One (lot)	<u>Laboratory Equipment</u>	39.6
	Spectrophotometer (2)	
	pH meter 2 (1.2)	
	Analytical balance 2 (2.0)	
	Top loading balance to \pm 0.1 gram (.9)	
	Platform balance 2 (.6)	
	Centrifuge refrigerated (5)	
	micro (.5)	
	regular (3)	
	Vacuum pump (.5)	
	Refrigerators 2 (1.2)	
	Freezer (1.0)	
	Drying oven (2.5)	
	Water bath incubation (1.0)	
	Distilled water still (2.0)	
	Distillation purifier (1.0)	
	Expendible supplies (3.7)	
	Glassware, plasticware, utensils (1.0)	
	Security/storage cabinets 4 (1.5)	
	Retort with automatic control (8)	
	Solar dryer (1)	
	Osmotic freezing equipment (1)	

42

Activity 6: Library Services

<u>Number</u>	<u>Description</u>	<u>Estimated Cost</u> <u>(\$000)</u>
1. One (lot)	<u>Books/Periodicals</u> Include: general/specific reference, special texts, circulation for agriculture program and related supplies for maintenance.	55
2. One (lot)	<u>Cabinets/Shelves/Book Trolleys</u> Include: catalogue and visible card cabinets, carrels, microfilm cabinets, book storage and display systems.	15
3. One (lot)	<u>Support Equipment</u> Include: typewriters (3), microfilm reader/printer with microfiche attachment, library supplies, copier, calculator(s).	15
4. One (lot)	<u>Audio/Visual Aids</u> Include: Overhead projector, slides, and related supplies, screen, lamps, video aids as appropriate.	5
		<hr/> 90

Project Support

<u>Number</u>	<u>Description</u>	<u>Estimated Cost</u> <u>(\$000)</u>
3	<u>Vehicles*</u> 1 regular station wagon 2 4-wheel drive wagon and appropriate spare parts	30

*Vehicle make is U.S. in origin conditioned by
spare part/maintenance capability of firm in Samoa.

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SUBJ: SOUTH PACIFIC ISLAND AGRICULTURAL DEVELOPMENT

REF: HANKIN TELECON 20 JUNE

1. AN ARCHITECT HAS BEEN COMMISSIONED TO DESIGN A STANDARD THREE BEDROOM HOUSE OF 1500 SQ. FT. OCCUPIED SPACE. NO DATE KNOWN IN SUVA AS TO WHEN DESIGN WILL BE READY.
2. ESTIMATED COST OF ONE HOUSE IS 40,000 TALA, INSTALLATION OF WATER/ELECTRICITY 8,000 TALA. REQUIRED EQUIPMENT 2,000 TALA. AT TODAY'S RATE OF EXCHANGE APPROXIMATELY US DOL 56,000 PER WITH FLUCTUATIONS IN MONEY MARKET YOUR BUDGET FIGURE SOUNDS CORRECT.
3. USP CONCURS WITH RECOMMENDATION TO ADD A HOME GARDENS ELEMENT INTO RESEARCH, NUTRITION, CROPS AND EXTENSION PROGRAMS. CONDON

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ANNEX M: PERSONNEL DESCRIPTIONS

AGRICULTURAL EXTENSION SPECIALISTS

(Long Term)

(Methodology/Communications)

Commence approximately 12 months after Project initiation and continue for two years. Background and training should include comprehensive experience in design and implementation of extension training programs, extension methodology, and communications. Position requires applied extension orientation appropriate to small farm and village environments in South Pacific region. Will serve on the staff at the USP Institute for Research, Extension and Training in Agriculture and work in collaboration with the Agricultural Extension program in the School of Agriculture to develop and implement a delivery system for agricultural extension.

Principal tasks include:

1. Participate in classroom/field (formal and in-service) instruction programs related to USP agricultural/extension activities. Emphasis to be on curriculum development oriented towards regional agricultural needs at the farm and village level and for the upgrading of professional staff.
2. Test extension techniques and methodologies which are relevant to the region's small-scale farmers with appropriate national institutions.
3. Participate, on a continuing basis, in assessments and evaluations of agricultural extension activities at USP and to the region particularly as related to Project inputs and projected outputs. Confirmation to the technical, environmental, economic and social constraints is essential to this process.
4. Promote the USP goal, as stated in the Project, of perfecting a functional, integrated REE program with the needed human resource skills and agricultural technology to better serve development programs of the region. This will necessitate close collaboration of agricultural extension with the other disciplines within agriculture at USP and the national institutions.

AGRICULTURAL EXTENSION SPECIALISTS

(Short Term)

Appropriate short-term specialists for a total of 18 person months in combination with long-term specialists will, during life of project, address key program objectives related to agricultural engineering activities. Short-term specialists will be sequenced at designated periods in the five-year program complementary to the assignment of the long-term specialists.

Principal responsibilities will be similar in nature to those outlined in the long-term specialists. Specialized needs of these specialists in addressing specific problem areas will be presented on a case-by-case basis within the regular program planning and evaluation framework established within the overall Project.

AGRICULTURAL EDUCATION SPECIALISTS

(Long Term)

(Teacher Education/Agric Curricula)

Commence approximately three months after Project initiation and continue for two, two-year assignments. Background and training should include experience in program development, instruction, curriculum development and/or teacher education. Position requires a skill in perfecting agricultural education programs appropriate to the needs of national institutions within the South Pacific region. Will serve on the staff at the USP Institute for research, Extension and Training in Agriculture and work in collaboration with the newly created Agricultural Education Program in the School of Agriculture.

Principal tasks include:

1. Participate in the instruction programs related to USP agricultural education. Emphasis to be on both training and curriculum development directed to the regional needs in vocational agriculture and to upgrade the existing professional staff in the region.
2. Institute, within the region, agricultural education workshops/short courses/seminars for vocational teachers of secondary schools emphasizing improved teaching techniques and curriculum planning.
3. Participate, on a continuing basis, in assessments and evaluations of agricultural education activities related to USP and to the region particularly as related to Project inputs and projected outputs. Sensitivities to the technical, economic and social implications are essential elements of this process.
4. Promote the USP goal, as stated in the Project, of perfecting a functional, integrated REE program with the needed human resource skills and agricultural technology to better serve development programs of the region. A close collaboration with the extension program is required particularly in the allocation of commodity resources being made available under this project.

AGRICULTURAL EDUCATION SPECIALISTS

(Short Term)

(Teacher Education/Ag Curriculum Dev.)

Appropriate short-term specialists for a total of six person months in combination with long-term specialists will, during life of project, address key program objectives related to the agricultural education activities. Short-term

specialists will be sequenced at designated periods in the five-year program complementary to the assignment of the long-term specialists.

Principal responsibilities will be similar in nature to those outlined in the long-term specialists. Needs for these specialists in addressing specific problem areas will be presented on a case-by-case basis within the regular program planning and evaluation framework established within the overall Project.

AGRICULTURAL ENGINEER SPECIALISTS

(Long Term)

Commence approximately six months after Project initiation and continue for two years. Background and training should include experience in classroom/shop instruction, testing methodology, and applied mechanics skills. Position requires applied skills/extension orientation appropriate to small farm and village environments in South Pacific region. Will serve on the staff at the USP Institute for Research, Extension and Training in Agriculture and collaborate with the School of Agriculture, Department of Agricultural Engineering.

Principal tasks include:

1. Participate in classroom/shop/field instruction programs related to USP agricultural engineering activities. Emphasis to be on curriculum development oriented to the regional needs in farm and home mechanics. Some attention will be given to upgrading of the existing professional staff.
2. Test, at field level, cost effective agricultural engineering technologies appropriate to the region and which are relevant to small scale farm operations.
3. Participate, on a continuing basis, in assessments and evaluations of agricultural engineering activities particularly as related to Project inputs and projected outputs. Observance of the technical, environmental, economic and resource base (e.g., fossil fuels) impacts are essential elements of this process.
4. Promote the USP goal, as stated in the Project, of perfecting a functional, integrated REE program with the needed human resource skills and agricultural technology to better serve development programs of the region.

AGRICULTURAL ENGINEER SPECIALISTS

(Short Term)

Appropriate short-term specialists for a total of 18 person months in combination with long-term specialists will, during life of project, address key

program objectives related to agricultural engineering activities. Short-term specialists will be sequenced at designated periods in the five-year program complementary to the assignment of the long-term specialists.

Principal responsibilities will be similar in nature to those outlined in the long-term specialists. Specialized needs of these specialists in addressing specific problem areas will be presented on a case-by-case basis within the regular program planning and evaluation framework established of the overall Project.

NUTRITION AND FOOD TECHNOLOGY SPECIALISTS

(Long Term, Short Term)

Consultant assistance commences approximately nine months after Project initiation and provides 36 person months for the five-year Project. Background and training for nutrition specialist(s) should include experience in tropical foods, particularly home garden vegetables and staple root crops and knowledgeable in food preparation and food combination for optimizing nutrient gain. The food technology specialist(s) must have experience and knowledge in the handling and processing of tropical foods, including product selection, product development and quality evaluation. Positions require applied skills and extension orientation appropriate to small farm and home environments of the South Pacific region. Will serve on the staff of USP Institute of Research, Extension and Training in Agriculture and will work in collaboration with the School of Agriculture nutrition and food technology programs.

Principal tasks include:

1. Participate in classroom, laboratory and field instruction programs related to USP nutrition and food technology activities. Emphasis will be on curriculum development and upgrading indigenous staff capabilities.
2. Test cost effective food technology activities appropriate to the region and which are relevant to the home and farm. Special attention will be on nutrition and food technology issues related to home garden or vegetable production programs in the region.
3. Participate, on a continuing basis, in assessments and evaluations of nutrition and food technology activities particularly as related to Project inputs and projected outputs. Observance of the social and economic impacts are essential elements of this process.
4. Promote the USP goal, as stated in the Project, of perfecting a functional integrated REE program with the needed human resource skills and agricultural technology to better serve development programs of the region. This necessitates close collaboration of the extension and agronomy disciplines within agriculture at USP and the respective national institutions.

CROPS/SOILS MANAGEMENT SPECIALISTS

(Long Term)

Three long-term specialists (two years each) will be provided for under the Project. The first two specialists (one in crop production, one in soils management) will commence approximately 15 months after Project initiation. These will be preceded by a series of short-term specialists. Background and training should include experience in classroom and field instruction, applied research methodology appropriate to the specialty, and a knowledge of tropical agriculture. Position requires applied research/extension orientation appropriate to the small farm and village environments of the South Pacific region. Will serve on the staff of USP Institute of Research, Extension, and Training in Agriculture and will work in collaboration with the School of Agriculture Crop Production and/or Soils Departments of the College of Agriculture.

Principal tasks include:

1. Participate in classroom laboratory and field instruction activities, related to the USP crop production and/or soils programs. Emphasis will be on curriculum development and upgrading professional staff.
2. Test cost effective technologies in crops and soils appropriate to the region and which are relevant to small scale production systems. Particular emphasis will be directed to those production commodities such as the food staples and home garden (fruits and vegetables) that are appropriate to farm and home use.
3. Participate, on a continuing basis, in assessments and evaluations of crops and/or soils management activities particularly as related to Project inputs and projected outputs. Observance of the social environmental, and economic impacts are essential elements of this process.
4. Promote the USP goal, as stated in the Project, of perfecting a functional, integrated research/education/extension program with the needed human resource skills and agricultural technology to better serve development programs of the region. This will necessitate close collaboration with extension and the food technology and nutrition components of this Project particularly in the development of technical analytical services for the region.

AGRICULTURAL CROPS/SOIL MANAGEMENT SPECIALISTS

(Short Term)

Appropriate short-term specialists for a total of approximately 27 person months in combination with long-term specialists will, during life of project,

address key program objectives related to agricultural crops and/or soils activities. Short-term specialists will be sequenced at designated periods in the five-year program complementary to the assignment of the long-term specialists.

Principal responsibilities will be similar in nature to those outlined in the long-term specialists. Specialized needs of these specialists in addressing specific problem areas will be presented on a case-by-case basis within the regular program planning and evaluation framework established within the overall Project.

LIBRARY SERVICES SPECIALISTS

(Short Term, Long Term)

Twenty-one months of consultant services will be provided to commence approximately six months after the initiation of the Project. Background and training should include experience in staff development for library personnel, library management, and operations. Will serve on the staff of USP Institute of Research, Extension and Training in Agriculture and will work directly with the College of Agriculture library.

Principal tasks include:

1. Development training for library staff.
2. Improving document delivery services and search capabilities.
3. Expanding library operations to adequately service needs of growing Agriculture School and its REE program.
4. Systematizing and updating library processes and operations to acceptable standards appropriate to the needs of USP.

HUMAN RESOURCE SPECIALIST

(Long Term)

Commence approximately six months after initiation of Project for a 12 month period. Background and training should include experience in assessments, impact analyses, and socio-economic research as related to agriculture development. Position requires comprehensive understanding of the social, economic and cultural issues and concerns within the South Pacific region. Will serve on the staff of USP Institute of Research, Education and Training in Agriculture and will work directly with extension and education programs of the College of Agriculture.

Principal tasks include:

1. Staff development in human resources to address relevant socio-economic elements related to agriculture REE.
2. Inputs to USP programs to perform appropriate needs assessments, impact analyses, development evaluations, and socio-economic research.
3. Where feasible develop curriculum at the degree and academic level which strengthens social sciences in the overall agricultural program.