

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

GUATEMALA  
PROJECT NAME  
HIGHLANDS AGRICULTURAL DEVELOPMENT  
PHASE  
Amendment 1

AID/LAC/P-471  
CR P-0147  
P-0147/1  
P-466

Proj. File Number: 520-0274  
Loan Number: 520-14037

UNCLASSIFIED

AGENCY FOR INTERNATIONAL DEVELOPMENT <b>PROJECT DATA SHEET</b>		1. TRANSACTION CODE <input checked="" type="checkbox"/> A = Add <input type="checkbox"/> C = Change <input type="checkbox"/> D = Delete	Amendment Number <u>3</u>	DOCUMENT CODE <u>3</u>
2. COUNTRY/ENTITY Guatemala		3. PROJECT NUMBER <input type="checkbox"/> 520-0274 <input type="checkbox"/>		
4. BUREAU/OFFICE PDSO <input type="checkbox"/> 05 <input type="checkbox"/>		5. PROJECT TITLE (maximum 40 characters) <input type="checkbox"/> HIGHLANDS AGR. DEVELOPMENT PHASE II <input type="checkbox"/>		
6. PROJECT ASSISTANCE COMPLETION DATE (PACD) MM DD YY <u>09</u> <u>30</u> <u>93</u>		7. ESTIMATED DATE OF OBLIGATION (Under 'B' below, enter 1, 2, 3, or 4) A. Initial FY <u>88</u> B. Quarter <u>4</u> C. Final FY <u>93</u>		

8. COSTS (\$000 OR EQUIVALENT \$1 = )						
A. FUNDING SOURCE	FIRST FY <u>83</u>			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total						
(Grant)	( 1,300 )	( 200 )	( 1,500 )	( 17,100 )	( 14,800 )	( 31,900 )
(Loan)	( 3,664 )	( 6,836 )	( 10,500 )	( 13,500 )	( 16,710 )	( 30,210 )
Other						
U.S.						
Host Country		6,311	6,311			
Other Donor(s)						
<b>TOTALS</b>	<b>4,964</b>	<b>13,347</b>	<b>18,311</b>	<b>30,600</b>	<b>31,510</b>	<b>62,110</b>

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) FN	220	690	260	2,100	13,500	15,000	-0-	17,100	13,500
(2)									
(3)									
(4)									
<b>TOTALS</b>				<b>2,100</b>	<b>13,500</b>	<b>15,000</b>	<b>-0-</b>	<b>17,100</b>	<b>13,500</b>

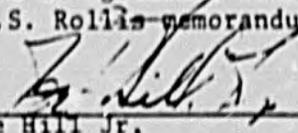
10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)						11. SECONDARY PURPOSE CODE			
210	213	221							
12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)									
A. Code	BF	BS							
B. Amount	18,600	12,000							

13. PROJECT PURPOSE (maximum 480 characters)

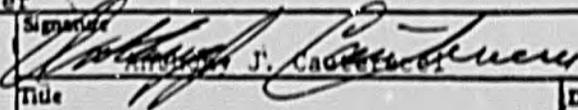
To increase rural agricultural productivity and profitability.

14. SCHEDULED EVALUATIONS						15. SOURCE/ORIGIN OF GOODS AND SERVICES					
Interim	MM	YY	MM	YY	Final	MM	YY	<input checked="" type="checkbox"/> 000	<input checked="" type="checkbox"/> 941	<input type="checkbox"/> Local	<input checked="" type="checkbox"/> Other (Specify)

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a \_\_\_\_\_ page PP Amendment.)  
 I have reviewed the methods of implementation and financing of this project and certify that they are in agreement with Payment Verification Policy Implementation Guidance provided in AA/M R.S. Rollis memorandum of December 30, 1983.

  
 Joe Hill Jr.  
 Controller

5/20/88  
 Date

17. APPROVED BY	Signature	18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION
	Title	
	 Andrew J. Cagert Director USAID	MM DD YY <u>08</u> <u>10</u> <u>88</u>

PROJECT AUTHORIZATION AMENDMENT

Name of Country: Guatemala  
Name of Project: Highlands Agricultural Development Phase II  
Number of Project: 520-0274

Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, the Highlands Agricultural Development Project for Guatemala was authorized on July 27, 1983. The authorization is hereby amended as follows:

1. Section 1 is deleted in its entirety and the following is substituted therefor:

"1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Highland Agricultural Development Project Phase II for Guatemala involving total planned obligations of not to exceed Thirteen Million Five Hundred Thousand United States Dollars (\$13,500,000) in loan funds and Seventeen Million One Hundred Thousand United States Dollars (\$17,100,000) in grant funds, 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. The Project Assistance Completion Date is September 30, 1993."

2. Section 2 is deleted in its entirety and the following is substituted therefor:

"2) the Project consists of assisting the Government of Guatemala expand the role of commercial, diversified agriculture in the Highlands by:

- a. expanding small-scale irrigation activities and programs in watershed management, including agro-forestry and soil and water conservation;
- b. strengthening the research and extension programs in development and dissemination of production technologies;
- c. improving a credit delivery system to serve small-scale farmers and/or farmer groups;

d. developing a commercially based agricultural marketing and processing system."

3. Section 3 is amended to add the following:

"f. Condition Precedent to Disbursement for Specific Activities (Grant)

Prior to any disbursement of credit funds for irrigation, soil conservation, reforestation, watershed management or agricultural production, the GOG and A.I.D. shall reach agreement on measures recommended in the Environmental Assessment to mitigate potential adverse environmental impacts caused by Project activities."

4. Section 3 is amended to add the following:

"g. Covenants (Grant)

The Grantee hereby covenants that, except as the Parties may otherwise agree in writing:

- "1) a project technical committee directly responsible to the Office of the Vice-Minister of Agriculture shall be created to assure proper functioning and coordination of the Project within the GOG;
- 2) A.I.D. shall be provided with a financial plan detailing counterpart contributions including personnel and infrastructural support to the Project;
- 3) A.I.D. shall be provided with a yearly time-phased action plan which describes all Project inputs, outputs and implementation arrangements of the GOG;
- 4) BANDESA shall support the reorganization process initiated in Region I under Project Amendment IV, in additional Regions II, VI and VII;
- 5) Guatemalan professionals with appropriate technical qualifications will be assigned to serve as counterparts to all Project-financed consultants;

b

- 6) funds for the necessary repair and spare parts for all Project-financed vehicles will be provided.
- 7) an impact evaluation near the end of the Project will be carried out with A.I.D. Grant resources included in this Amendment. The consulting firm or individual carrying out this evaluation activity will be selected by mutual agreement of the Parties. Except as the Parties may otherwise agree in writing, the evaluation will include at least the following aspects:
  - a. Evaluation of progress towards achieving Project objectives;
  - b. Identification and evaluation of problem areas or constraints which impede achievement of outputs;
  - c. Analysis of ways in which problem areas and constraints may be resolved.
- 8) annual internal Project evaluations shall be carried out during the entire life of the Project. These internal evaluations will be the basis for the preparation of the annual implementation plans and budgets, and shall be presented for A.I.D. consideration. The internal evaluations will examine the programmed targets, the supervision system, logistics and other elements of the Project to recommend and implement the necessary improvements.
- 9) annual independent audits of each activity under the Project, in accordance with standard auditing principles, shall be carried out with resources included in this Project Amendment. These audits should be carried out during the first quarter of each year. Said audits will in no event replace the periodic Project audits which must be carried out by the GOG Controller Office (Contraloria de Cuentas de la Republica de Guatemala)."

5. Section 3c is amended to add the following:

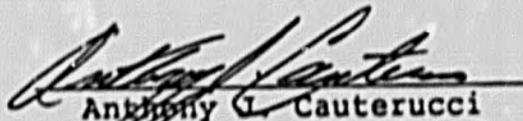
"Participant training in countries included in A.I.D. Geographical Code 941 will be financed under the Project in areas that are critical to its implementation."

6. Section 3f is deleted in its entirety and the following is substituted therefor:

"h. Waivers

The Director's authorization is requested to permit A.I.D. to finance international airfare for training in countries included in A.I.D. Geographical Code 941: per Handbook 10, Chapter 15, Section 15B.a."

7. The authorization cited above and subsequent Project amendments remain in force except as hereby amended.

  
Anthony G. Cauterucci  
Director USAID/Guatemala

Clearances:

ORD, GStraub	<u>MSK</u>	Date:	<u>3/20/88</u>
PRM, TKellermann	<u>MSK</u>	Date:	<u>8/24/88</u>
PDSO, RSteelman	<u>R Steelman</u>	Date:	<u>7/22/88</u>
OEPA, SSkogstad	<u>SSK</u>	Date:	<u>9/25/88</u>
OPSP, BGannon	<u>BG</u>	Date:	<u>8/25/88</u>
CONT, JHill	<u>JH</u>	Date:	<u>8/23/88</u>
DDIR, PEWhite	<u>PEW</u>	Date:	<u>8/29/88</u>

1956C;8/22/88

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ANNEXES

NOTE

The annexes marked with (X) are not included in the PP. They are available at the Mission and at AIO/W.

- A. Statutory Checklists
- X B. FAA Certification
- C. GOG Letter of Request for Assistance
- D. Logical Framework Matrix
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- X G. Executive Summaries of the Final Evaluation of the Small Farmer Diversification Systems Project (520-0255) and of the Mid-term Evaluation of the Highlands Agriculture Development Phase I Project (520-0274)
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- X I. Institutional Analysis
- X J. Project Administration
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  - Section 4: Contractor Selection Criteria
- X K. Land and Water Use
- X L. Research and Extension
- X M. Marketing
- X N. Credit

- X O. Project Commodity Description and  
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- P. Social Soundness Assessment
- X Q. HAD Project Amendment IV (PIL No. 61)
- X R. A.I.D./W-Mission Relevant Cables
- X S. GOG Participating Institutions: Project  
Relationships and Functions

## ACRONYMS

AID	U.S. Agency for International Development
ARD	Associates in Rural Development, Inc.
BANDESA	Banco Nacional de Desarrollo Agrícola (National Agricultural Development Bank)
CABEI	Central American Bank for Economic Integration
CBI	Caribbean Basin Initiative
CMF	Contracted Management Firm
COGAAT	German Food Assistance Program
COREDA	Comité Regional de Desarrollo Agrícola (Regional Committee for Agricultural Development)
CORSEPE	Comité Regional Sectoral de Producción para la Exportación (Regional Sectoral Committee of Production for Export), composed of representatives from BANDESA, DIGESA, DIGESEPE, ICTA, INDECA, DIGEBOS and INACOP
COSUCO	Comisión Superior de Coordinación (Superior Coordinating Commission), composed of the heads of all MAGA General Directorates and Institutes
DIGEBOS	Dirección General de Bosques y Vida Silvestre (General Directorate of Forests and Wildlife)
DIGESA	Dirección General de Servicios Agrícolas (General Directorate of Agricultural Services)
DIGESEPE	Dirección General de Servicios Pecuarios (General Directorate of Livestock Services)
EAT	Equipo de Asistencia Técnica (Technical Assistance Team), provided by USDA for Project 520-0255 under an AID contract
EEC	European Economic Community
EEE	~ Educación Extra Escolar

EPA	Environmental Protection Agency
FAO	Food and Agriculture Organization of the United Nations
FSR/E	Farming systems research and extension
GDP	Gross Domestic Product
GOG	Government of Guatemala
HAD	Highlands Agriculture Development Project
ICAITI	Instituto Centro Americano de Investigación y Tecnología Industrial (Central American Institute for Technological and Industrial Research)
ICTA	Instituto de Ciencia y Tecnología Agrícola (Institute of Agricultural Science and Technology)
IDB	Inter-American Development Bank
IFPRI	International Food Policy Research Institute
IICA	Interamerican Institute for Cooperation in Agriculture
INACOP	Instituto Nacional de Cooperativas (National Institute for Cooperatives)
INAFOR	Instituto Nacional Forestal (National Forestry Institute) (now defunct)
INAP	Instituto Nacional de Administración Pública (National Public Administration Institute)
INCAP	Instituto de Nutrición de Centro América y Panamá (Central America and Panama Nutrition Institute)
INDECA	Instituto Nacional de Comercialización Agrícola (National Institute of Agricultural Marketing)
INE	Instituto Nacional de Estadística (National Statistics Institute of the Ministry of Economy)
IQC	Indefinite Quantity Contract
IRR	Internal rate of return

LAC Latin American and Caribbean Bureau of A.I.D.

LWU Land and Water Use

MAGA Ministerio de Agricultura, Ganadería y Alimentación  
(Ministry of Agriculture, Livestock and Food)

OAS Organization of American States

OPG Operational Project Grant

ORD Office of Rural Development, USAID/Guatemala

PACD Project assistance completion date

PASA Participating Agency Service Agreement

PP Project Paper

ProAg Project Agreement

PROGETTAPS Proyecto para la Generación y Transferencia de  
Tecnología Agropecuaria y Producción de Semillas  
(Project for Generation and Transfer of  
Agricultural Technology and for Seed  
Multiplication)

PSC Personnel Service Contract

RFP Request for Proposal

ROCAP Regional Office for Central America and Panama of  
A.I.D.

TA Technical Assistance

TCS Technical and Coordinating Secretariat (Project  
Execution Unit at COSUCO)

UCPRODA Unidad de Coordinación para el Proyecto de  
Diversificación Agrícola (Coordination Unit for  
Project 520-0255)

UNDP United Nations Development Programme

URPA Unidad Regional de Planificación Agrícola (Regional  
Agricultural Planning Unit), planned branch of USPADA  
in each region

USAID      A.I.D. Mission in Guatemala

USDA      United States Department of Agriculture

USPADA     Unidad Sectoral de Planificación para la Alimentación  
            y el Desarrollo Agrícola (Sector Planning Unit for  
            Food and Agricultural Development)

WFP        World Food Programme

1993C

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I. SUMMARY AND RECOMMENDATIONS

A. Recommendations

The following recommendations are submitted for approval:

1. \$15,000,000 in grant funds be authorized in FY88 for the Highlands Agriculture Development Phase II (HAD II) Project, together with a three-year extension of Project Assistance Completion Date (PACD) to September 30, 1993.

2. The Government of Guatemala (GOG) will provide an equivalent \$14.8 million as their counterpart contribution to the Project. (Exchange rate based on \$US1.00 to Q.2.70).

3. Goods and services financed by A.I.D. under this Project Amendment shall have their source and origin in the United States, Guatemala or in countries that are members of the Central American Common Market, except as A.I.D. may otherwise agree in writing.

4. The Grantee will be the Government of the Republic of Guatemala acting through the Ministry of Public Finance. The Ministry of Agriculture, Livestock and Food (MAGA), chief implementing agency for the Project, will also be a signatory to the Grant Agreement Amendment.

B. Summary Project Description

This Amendment will provide technical assistance, training, credit and commodities which will lead to the introduction of profitable, site-specific technologies, such as small-scale irrigation and watershed management practices, that improve and increase diversified agricultural production. As an essential element in diversification, an improved marketing system, which is expected to benefit the producer, consumer and intermediary in an equitable fashion, will be supported by the Amendment.

This Phase II Amendment represents the consolidation of elements proven successful during a series of activities jointly financed by USAID and the GOG during the past 15 years to address the development problems of small farmers in the Highlands. The Mission and GOG envision this five-year amendment as part of a long-term strategy for removing real constraints to development in the Highlands.

### 1. Goal and Purpose

The goal of the HAD Phase II Amendment is to enable the rural sector to make a greater contribution to national economic growth.

The Project purpose is to increase rural agricultural productivity and profitability. This will be accomplished through the development of diversified commercial agriculture, expanded emphasis on irrigated farm systems, and the transfer of production technology and marketing services to small farmers.

### 2. Rationale

Agriculture dominates the economy of Guatemala, accounting for about 25% of GDP and employing more than half of the national labor force. A large proportion of the country's rural population lives in the Highlands. These families are primarily dependent on subsistence agriculture, with an estimated 90% earning less than \$1,000 annually, or less than \$160 per person.

Recent A.I.D. experiences in Guatemala through diversification and infrastructure projects in the Highlands substantiate the view that subsistence farmers can break the persistent cycle of poverty. These experiences, however, have underscored the need for greater integration in Project design: elimination of duplication of elements among different projects, incorporation of conservation and sound agronomic practices with irrigation efforts, improved site selection and follow-up extension, better credit management and availability for crop production purposes, a well-developed marketing component, integrated agro-forestry activities and better coordination with other USAID-supported activities, such as Farm-to-Market Access Roads.

Thus, the Mission will focus a large portion of its portfolio in this Amendment by expanding opportunities related to irrigation, marketing, and crop diversification in the Highlands, and by improving Project coordination and management. These are areas where pay-off in terms of employment, incomes and production is reasonably quick and sustainable. Other activities in the overall agricultural portfolio to promote movement into commercial export production will be supported by policy reform and institutional strengthening activities.

The project design committee is aware of the fact that implementing this project's activities and elements is not

enough, if we do not take steps to assure that these activities may continue after the project's termination.

To assure this continuity and self-sustainability we have developed a holistic approach which combines activities to increase production with natural resource protection activities to assure that environmental conditions remain propitious for continued high production.

Marketing and information systems are designed to be flexible and responsive to continuously changing market demand, assuring on-going, dependable, information on which Guatemalan may base their agricultural production and marketing decisions.

The large TA and training component is designed to strengthen institutional systems and personnel so that they have the skills and agility to give the necessary support to the Guatemalan agricultural sector after the HADS project has terminated.

#### C. Summary Findings

This Amendment is ready for implementation and is judged to be socially, financially and economically sound, and technically and administratively feasible. An environmental assessment of the Project will be initiated in August 1988 and its findings and recommendations will be incorporated into the Project in late 1988. Funds are included in the Project budget to address technical assistance, training and other needs as identified by the environmental assessment.

#### D. Statutory Criteria and Mission Director Certification

1. The Project meets all applicable statutory criteria. Appropriate checklists are included in Annex A.
2. A certification by the USAID/Guatemala Mission Director that the GOG has the capability to implement and maintain the Project is included in Annex B.

#### E. Project Beneficiaries

The Amendment will benefit small subsistence and commercial farmers in the Highlands by assisting them in the transition to viable commercial operations. The Phase II Amendment will be implemented in Regions I, V, VI and VII, comprising most of the Highlands agricultural areas of the country. (See map on following page).

The rural population in the Project area is about 3.4 million. The Amendment will directly benefit about 6,000 small farmers and their families, or an estimated 36,000 Highlands inhabitants.

F. Summary Project Amendment Budget

Description	Grant	GOG*	TOTAL
1. Land/Water Use	864,500	2,896,503	3,761,003
2. Research/Extension	1,500,000	3,075,710	4,575,710
3. Marketing	802,000	1,904,745	2,706,745
4. Credit	4,422,000	6,904,745	11,326,745
5. Support Services	5,226,400	0	5,226,400
6. Eval. and Audits	310,000	0	310,000
7. Contingencies	595,100	0	595,100
8. Inflation	1,280,000	0	1,280,000
TOTAL	\$15,000,000	\$14,781,703	\$29,781,703

\* In-kind contribution (personnel support, office space and equipment maintenance)

G. Response to NPD Guidance Cable

The AID/Washington review of the HAD Phase II New Project Description recommended that the following information be included in the Project Paper Supplement:

1. Feasibility analysis for the proposed measures to upgrade the operations of BANDESA

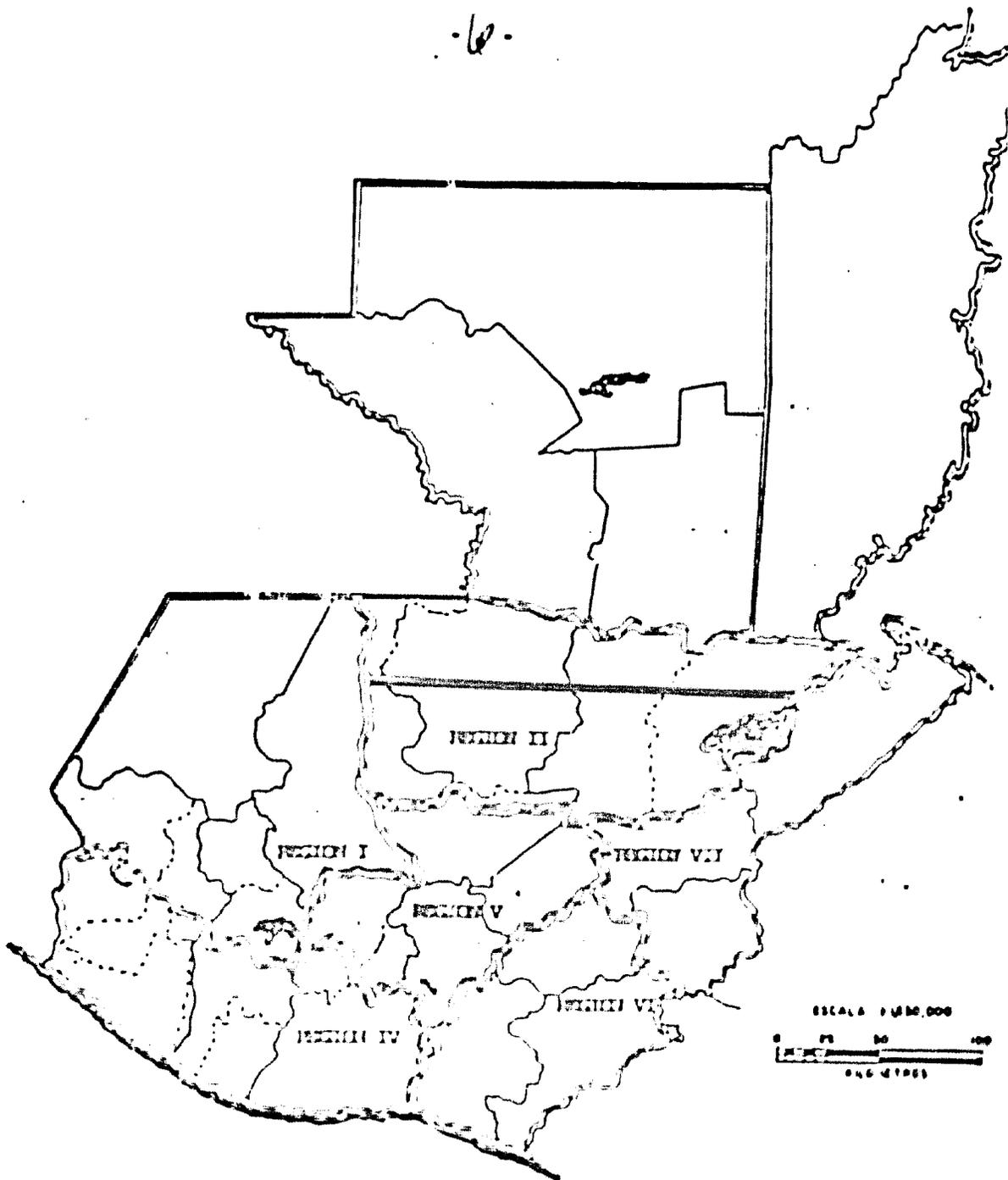
- A detailed discussion of BANDESA's principal constraints and prospects for adopting the proposed measures to improve administrative operations are included in Annex S of the PPS. In addition, Guatemala cable 003314 (Annex S) discusses the mechanisms by which other USAID projects are contributing to reform of BANDESA's operations.

2. Update on the measures adopted by BANDESA to improve their performance.

- Annex S provides a response to this issue. In addition, statistical indicators of improvement are included, which may serve as a basis for measuring future advances in this area.

3. Revised outputs and objectively verifiable indicators for Project components to be used for a baseline monitoring system.

- Revised outputs and objectively verifiable indicators have been incorporated into the text of the PPS, as well as in the Logical Framework (Annex D). A study will be completed under the prime technical assistance contract to gather baseline data and devise a baseline monitoring system to continually monitor and measure Project impact.



MAP OF THE AGRICULTURE REGIONS  
OF GUATEMALA

H. Project Development Team

USAID/Guatemala

Office of Rural Development:

Brian Rudert  
Thomas Ivers  
Mario Aragon  
Edgar Pineda  
Gary Smith

Project Development and Support Office:

Christina Schoux  
Richard Steelman  
Alfred Nakatsuma  
Gustavo Leal

Controller's Office:

M. Alban

Government of Guatemala

DIGESA:

Domingo Conde  
Ing. Alfredo Trejo  
Ing. Mas Molina

DIGESEPE

Dr. Pablo Giron  
Ing. Edmundo Silvestre

DIGEBOS

Ing. Antonio Nishtal  
Lic. Antonio Cuevas

ICTA

Ing. Horacio Juarez

BANDESA

Lic. Isaias Figueras  
Lic. Edin Barrientos  
Lic. Carlos Diaz

INDECA

Lic. Armando Melgar  
Lic. Mario Herrera

USPADA

Lic. Fernando Vargas  
Lic. Oscar Orozco

Associates in Rural Development, Inc.

Allen Hankins  
Mike Schwartz  
Frederic Tracy  
Romeo Martinez

DataPro, S.A.

Bruce Newman

## II. BACKGROUND

### A. Project Setting

The agriculture sector has long been dominant in the Guatemalan economy, and continues to be a critical sector to the country's economic development. Even after the relatively rapid non-agricultural growth of the 1970's and a lackluster agricultural performance during the 1980's, agriculture still accounts for at least one-fourth of the country's Gross Domestic Product (GDP). It assumes even greater importance in other aspects of the economy. Almost six of every ten people in the workforce are employed in this sector, and agricultural exports generate two-thirds of the country's total foreign exchange earnings.

The sector has a dualistic nature composed of two broad systems: the "commercial" and the "subsistence". This concept is expanded on in the Summary of the USAID/Guatemala Agriculture Sector Development Strategy for 1988-1992 (see Annex G). This strategy addresses the duality by proposing to move increasing numbers of subsistence farmers into commercial operations while improving investment, efficiency and income-generating opportunities for already existing commercial enterprises. In broad terms, the strategy contains two qualitative targets:

- Fuller use of existing productive capacity in the commercial groups

- The expansion of productive capacity by enabling the populous subsistence group to produce efficiently and competitively through improved knowledge, skills, infrastructure and resources, thereby permitting this group to make the transition to commercial agriculture

Recent A.I.D. experiences in Guatemala through diversification and infrastructure projects in the Highlands substantiate the view that subsistence farmers can break the persistent cycle of poverty. Thus, the Mission will focus a large portion of its portfolio in this Amendment by expanding opportunities related to irrigation, marketing, and crop diversification in the Highlands. This is an area where pay-off in terms of employment, incomes and production is reasonably quick and sustainable. Other activities in the overall agricultural portfolio to promote movement into commercial export production will be supported by policy reform and institutional strengthening activities.

## B. GOG Plan/Strategy

The present Government of Guatemala (GOG), in power since January 1986, has adopted four broad goals for the agriculture sector: maximization of income, generation of greater rural employment, distribution of economic gains to poorer sector of the rural population, and achievement of a stable and balanced development process. Specifically, the GOG intends to:

- guarantee domestic food security through expanded area planted, productivity improvements, and increased on-farm storage capacity for basic grains

- increase foreign exchange earnings through expanded traditional and non-traditional agricultural exports

- assure rational management and use of the country's natural resource base through increased irrigation, and improved watershed protection, including expanded soil and conservation, planned forest management and reforestation

- expand agricultural diversification and agro-industrial development through improved incentives and investment

- promote active participation of small farmers in the development process through technical assistance and expanded support to farmer organizations

A series of agriculture sector project evaluations and analyses have reinforced the importance of many of these priorities. The HAD Phase II Amendment draws from these documents, and specifically addresses concerns of the GOG for increasing small farmer incomes by introducing improved technologies to enhance productivity and the marketability of production.

## C. Sector/Program Constraints

The principal constraints to revitalized growth in Guatemalan agriculture can be grouped into three categories: (1) structural deficiencies; (2) institutional inadequacies; and, (3) inappropriate policies.

### 1. Structural Deficiencies

Physical and structural constraints in the agriculture sector are closely linked to longstanding economic and political conditions in rural areas. These include such

factors as the political turmoil of recent years; a perception of insecure land tenure which has been a deterrent to investment; population pressure and an unstable work force; low per capita and highly uneven income distribution; and malnutrition among low-income groups. Perhaps more critical is the situation of low rural employment. The principal physical and structural constraints include inadequate:

- a. Land distribution and use
- b. Marketing/storage/processing
- c. Rural roads
- d. Natural resource management
- e. Water accessibility
- f. Energy distribution

## 2. Institutional Inadequacies

The institutional constraints facing the agriculture sector are the result of a combination of factors caused by an over-extended public sector service network, insufficient budget allocations, declining private sector investment, low levels of trained and educated agriculturalists, and struggling farmer associations. These conditions are manifested in low farm productivity. Principal institutional constraints include inadequate:

- a. Technology development and dissemination
- b. Input supply
- c. Credit delivery
- d. Farmer associations
- e. Agricultural education and training

## 3. Non-Supportive Policy Environment

Policy impediments are among the most serious obstacles to improved growth, efficiency, and investment in the agriculture sector. These include general macroeconomic policies (monetary, fiscal, exchange, trade) and specific sectoral policies (land distribution, water use, pricing, research, budgetary allocations).

### D. Current Project Status

#### 1. Small Farmer Diversification Systems Project (520-0255)

One of the two principal forerunners to HAD Phase II, the Small Farmer Diversification Systems Project (SFDS), was authorized in June 1981. The Grant Agreement for a total of \$696,000 was signed with the GOG on August 28, 1981, while the

Loan Agreement for \$5.5 million was signed on September 24, 1981. Subsequent amendments to the Grant Agreement in 1982 and 1985 added \$1 million and \$2 million, respectively, bringing the A.I.D. contribution to a total of \$5.5 million in loan and \$3.7 million in grant funds. The original PACD of March 31, 1987 was extended to September 30, 1988, and is currently being considered for further extension.

The goal of SFDS is to improve the well-being of rural Guatemalans living in the Western Highlands, and its sub-goal is to improve small-farm management and increase the return to factors of production of the small farm enterprise. The Project's purpose is to strengthen public sector capacity to stimulate small farm diversification from basic grains to higher-value diversified crops and small livestock involving greater labor intensity.

USAID inputs to the Project include technical assistance, training, commodities, construction, credit and social cost payments, Project coordination, a credit study, a farm management survey, a nutritional impact evaluation, and a 4-S Club rotating fund. Outputs include the development and dissemination of appropriate technologies for small farmer diversification, as well as continued support for small-scale irrigation and soil conservation activities. These efforts have already resulted in spontaneous diversification of agricultural products in the Western Highlands. The Project is implemented by the Ministry of Agriculture, Livestock and Food (MAGA) in the six western Departments of Region I (Quetzaltenango, Solola, Totonicapan, San Marcos, El Quiche, and Huehuetenango).

Since early 1987, the AID Mission has given serious consideration to extending the Project for several more years. The possibility of expanding the activities to other agroclimatic zones and increase private sector participation in the diversification process was explored. Also, potential new technical interventions with other non-traditional crops were examined to complement the existing programs of research, extension, training, production, market development, and credit.

A comprehensive end-of-project evaluation, conducted in September-October 1987, concluded that the basis for a new follow-on activity was fully justified. The evaluation indicated that, through Project-supported activities, subsistence farmers can break the persistent cycle of poverty. Problems encountered during Project implementation, however, included duplication of elements among different projects, lack of integration of conservation and sound agronomic practices with irrigation efforts, inconsistent site selection and extension follow-up, inadequate credit management and

availability for crop production, absence of a marketing component, poor coordination of agro-forestry and other USAID-supported activities, such as farm-to-market access roads. It was therefore determined to merge and continue the activities of the SFDS Project with HAD Phase I, incorporating design elements to address the deficiencies noted. Specific details of the evaluation are noted in Annex H.

2. Highlands Agricultural Development Project  
(520-0274)

The Highlands Agricultural Development Project (HAD) is a forerunner to the proposed HAD Phase II Amendment. Its purpose is to improve the productive resource base of the rural poor primarily through rural infrastructure development. Project Agreements were signed on September 30, 1983 between A.I.D. and the GOG for \$7.5 million in loan funds and \$1.5 million in grant funds. Subsequent amendments in 1985 and 1986 added \$6.0 million to bring total loan funding to \$13.5 million, and added \$600,000 to bring grant funding to a total of \$2.1 million. The current Project Assistance Completion Date (PACD) is September 30, 1990.

The Project has two major components: 1) natural resources, consisting of small-scale irrigation, soil conservation and forestry; and 2) a rural access roads maintenance program. The small-scale irrigation and soil conservation sub-components are currently being implemented through MAGA's General Directorate of Agricultural Services (Direccion General de Servicios Agricolas, or DIGESA) in Regions I, II, IV, V, VI and VII. Credit services for disbursing irrigation infrastructure loans and social payments for soil conservation are being provided by the National Agricultural Development Bank (Banco Nacional de Desarrollo Agricola, or BANDESA). The forestry component, which includes activities in reforestation and forest management, was carried out through the National Forestry Institute (Instituto Nacional Forestal, or INAFOR). INAFOR was abolished in June 1988 and some of its functions have been assumed by the newly created National Directorate of Forests and Wildlife (Direccion Nacional de Bosques y Vida Silvestre), within the MAGA. The access roads maintenance component is managed by the Rural Roads Directorate (Direccion de Caminos Rurales, or DCR) in areas coinciding with portions of MAGA's Regions I, V, VI and VII, and will continue through the current PACD.

The Project has achieved numerous successes in its first three and one-half years, but its execution level has been below that expected by USAID and GOG. This can be explained, in part, by macroeconomic difficulties in Guatemala, including the

devaluation of the Quetzal. An evaluation team in November-December 1987 also detected various deficiencies in both managerial/administrative and technical aspects of implementation, which affected the extent and quality of the Project's outreach. Many of these deficiencies were examined and analyzed by USAID Project management in conjunction with DIGESA and BANDESA personnel. This process resulted in Amendment IV (Implementation Letter No. 61) to the Project Agreement signed on April 20, 1988 (Annex R), which enhanced the HAD Project in three major areas by providing:

- Support for reorganizing and strengthening of DIGESA and BANDESA in Region I
- Personnel and technical assistance to DIGESA for the irrigation activity
- Credit for production activities at irrigation sites

These activities, initiated under Amendment IV, will be expanded and complemented during Phase II of the HAD Project. Provision is made to increase credit availability and support regional BANDESA operations in additional geographic areas. Emphasis will be given to creating compatible information systems in each of the major MAGA participating agencies in order to facilitate communication and maximum accessibility to data. In addition, alternative mechanisms are being explored to improve DIGESA's ability to provide technical services to the irrigation sites, as well as to provide other options to the farmer to compensate for DIGESA's already over-extended resources.

The mid-term evaluation of HAD, completed in December 1987, specifically stated that any redesign of the HAD Project should incorporate successful elements from the Small Farmer Diversification Systems Project. The similarity of the two projects with regard to their objectives, target populations, technical intervention personnel, outreach areas and executing agencies confirmed that any additional efforts should be combined into a single project. The Summary Recommendations from the HAD mid-term evaluation are detailed in Annex H.

The proposed five-year HAD Phase II Amendment will consolidate those activities of the SFDS and HAD Phase I Projects based on the recommendation of the detailed evaluations carried out in FY 88. The Amendment supports the assessment of the Mission and the GOG that, in order for Guatemala to achieve

sustainable long-term growth, a strong agriculture sector is key to improving incomes, equity and the welfare of the country's rural population. The first objective of the Mission's FY 1989-90 Action Plan is to increase agriculture production. The proposed Amendment directly addresses this objective through continuing to support existing and planned small farmer interventions and by promoting a substantial expansion of irrigation-based technologies.

#### E. Other Donor Assistance

The Inter-American Development Bank (IDB) is the largest international donor in Guatemala, and focuses its resources mainly on providing support to the Guatemalan agriculture sector. Presently, the IDB is implementing agriculture sector projects in animal health, wholesale marketing, private sector agriculture credit, seed multiplication, agricultural technology development and transfer, and rural roads. Project interventions in large-scale irrigation, agricultural credit through BANDESA, fisheries, livestock development, watershed management, and sector restructuring and/or strengthening are currently being discussed. AID and IDB have been collaborating closely on agricultural sector initiatives, and it is expected that the Bank's efforts will continue to complement those already being implemented by the Mission.

The Mission's Office of Rural Development (ORD) also maintains frequent coordination with several other donors and their agriculture-oriented activities. Some of these include:

The activities of Central American Bank for Economic Integration (CABEI) in Guatemala are oriented principally toward the restructuring of credit policies with a concentration in rural agro-enterprises. The Bank currently provides financing for re-orienting credit policies, establishing the Regional Fund for Development Cooperation, rural access roads, plant protection and maintenance of irrigation and drainage systems. Through its Central American food security program, the European Economic Community (EEC) finances pre-investment studies which are developed into project proposals to be funded by other international donors. This organization is presently sponsoring region-wide programs in:

- food and nutrition surveillance through INCAP
- systems for estimating crop production, yields and costs

- marketing, especially for basic grains
- credit to small agricultural producers
- agricultural research, extension and training

In the agriculture sector, the Interamerican Institute for Cooperation in Agriculture (IICA) supports activities in technology development and transfer, marketing and agroindustry, plant and animal health, and planning and analysis for agricultural policies. Technical support is provided to projects related to cattle, farmer organizations, agricultural policy, animal health, coffee, plant protection and public sector support.

F. Relationship to A.I.D. Policy, A.I.D. Strategy and other A.I.D. Projects

The goals and objectives of this Project are in conformance with and support the four Agency priority areas (the four pillars), the USAID/Guatemala FY 1989-1990 Action Plan the LAC Regional Plan, and NBCCA objectives in Central America. The Amendment directly responds to the recommendations presented in the Mission's Agriculture Sector Strategy document approved in March 1988.

One of the three key objectives of the USAID/Guatemala Country Development Strategy Statement (CDSS) over the current planning period is to increase rural incomes and productivity. Most of USAID's current project portfolio addresses this objective and improvement in the well-being of the rural population in the Highlands. This Amendment directly relates to, and expands upon, USAID's emphasis on supporting technological innovation and infrastructure to raise productivity and incomes on small farms. The underlying strategy is to intensify agricultural diversification through the development of physical resources such as soil and water, combined with a well-directed marketing infrastructure and training program.

The HAD Phase II Amendment is closely linked to the following USAID projects and/or components:

1. Highlands Agricultural Development Project Phase I Access Roads Component (520-0274) and the Farm-to-Market Access Roads Project (520-0332)

The HAD Access Roads Component is essentially directed to the maintenance of tertiary roads built under previous USAID-financed activities, and will continue into HAD

Project Phase II. Under the HAD Phase II Amendment, DIGESA will develop criteria for the selection of small-scale irrigation projects which takes into account proximity of these access roads. The Farm-to-Market Access Roads Project, dedicated to the rehabilitation of access roads, the upgrading of tertiary roads and the construction of new roads, will be closely coordinated with the HAD Phase II Project through site identification and information sharing to ensure maximum integration of the roads and production activities.

2. Agribusiness Development Project (520-0276)

The Guild of Non-Traditional Products Exporters (Gremial) has developed an extensive market information base that will be linked to INDECA under the HAD Phase II Amendment. While the Gremial system is essentially oriented to export markets, it will serve as an initial model for INDECA's domestic market information system, to be supported by the Amendment, and which will be linked to the Gremial system by computer. Information on production and availability will be forwarded from DIGESA to the Gremial and other groups, and the Gremial will provide export market information, which, although not necessarily of direct value to many small producers, will provide them with a basis for comparing offers from export-oriented intermediaries.

Other activities under the HAD Phase II Project which relate to the Gremial's endeavors include pre-shipment certification of fresh fruits and vegetables, the development of grades and standards and quality control with the intent of developing a quality standard recognized as superior. To the extent that technical assistance under the Agribusiness Development Project improves the financial and managerial systems of BANDESA, beneficiaries of the HAD Project should gain from this aspect as well.

3. Cooperative Strengthening Project (520-0286)

This Project is exclusively dedicated to improving Guatemalan cooperative federations. Project resources are being dedicated to administrative and financial systems improvements in BANDESA and the debt restructuring of BANDESA's clients. Also, individual federation-affiliated cooperatives will be eligible for production-oriented technical and financial assistance under HAD II, and can participate in market information activities.

4. Private Enterprise Development (520-0341)

Under this Project, a large grant has been made to the Gremial for four principal activities:

- Prioritization and development of export crops, as well as adaptive field research of such crops
- Policy reform to create incentives for exports of non-traditional products
- Negotiation of improved shipping rates for export products
- Institutional strengthening, including administration and commercially oriented services, such as pricing information for products, packaging, transportation, etc.

There is an indirect relationship with Phase II of HAD because all four of the above areas have the potential to significantly impact on HAD Phase II beneficiaries. The first area has perhaps the greatest direct relevance in that DIGESA can disseminate information regarding improved technologies to HAD II Project beneficiaries.

5. Non-Formal Education Project. (520-0281)

The Non-Formal Education Project comprises three radio stations and a newspaper. One station, in Momostenango, broadcasts in Spanish, Mam and Quiché; another, in Salamá, broadcasts in Spanish and Achi; and a third, in Quezada, broadcasts in Spanish only. A monthly newspaper, El Informador Rural, is published monthly and distributed in the Western Highlands, a major target areas of the HAD project.

These media could be invaluable in our efforts to disseminate marketing and extension information. Discussions are underway with the Human Resources Division to develop coordination between HAD and this project.

6. Higher Education Project. (520-0304)

Under this project some 225 indigenous students from the Western Highlands attend a weekend program at Rafael Landívar University. These students could also assist in disseminating project information.

7. Rural Primary Education Improvement Project.  
(520-0282)

This project develops bi-lingual curriculum for primary schools using the Mam, Quiché, Kekchí and Cachiqual language. This too could be a valuable means of extending important agricultural information to non-Spanish speakers.

8. Farm-to-Markets Road Project. (520-0332)

Steps are underway to develop a compatible, coordinated information system between the Directorate General of Roads and the Directorate General of Agricultural Services.

The objective would be to more closely coordinate the construction of crucial roads with areas where need for agricultural services has been identified but cannot be supplied for lack of access.

### III. DETAILED PROJECT DESCRIPTION

#### A. Project Goal and Purpose

The goal of the HAD Phase II Amendment is to enable the rural sector to make a greater contribution to national economic growth.

The purpose of this Amendment is to increase rural agricultural productivity and profitability. This will be achieved through the development of diversified commercial agriculture, an expanded emphasis on irrigated farm systems, and the transfer of production technology and marketing services to small farmers.

This Amendment will provide technical assistance, training, credit and commodities which will lead to the introduction of profitable, site-specific technologies that improve and increase diversified food crop production. As an essential element in diversification, the development of an improved marketing system, which is expected to benefit the producer, consumer and intermediary in an equitable fashion, will be supported by the Amendment.

This Phase II Amendment represents the consolidation of elements proven successful during a series of activities jointly financed by USAID and the GOG during the past 15 years to address development problems of small farmers in the Highlands. The Mission and the GOG envision this five-year amendment as part of a long-term strategy to remove constraints to agricultural development in the Highlands.

#### B. Project Strategy

Successful commercial agriculture depends upon an interplay of production and marketing opportunities and options, and the capacity to make rational choices among them in a market system where the principal decision criterion is profitability. With this orientation, the Project Amendment seeks to increase opportunities to diversify farm production and increase productivity and profits, as well as improve access for Project beneficiaries to high-quality, reliable information regarding such opportunities.

The focus of the Amendment is on those subsistence farmers and farming areas in the Highlands which have potential for successfully entering the market system. Also benefiting from the Project are small- and medium-size commercial enterprises which could improve their economic status, given additional infrastructure support and market options. A large

proportion of the country's rural population lives in the Highlands. These families are primarily dependent on subsistence agriculture, with an estimated 90% earning less than \$1,000 annually, or less than \$160 per person. The region has a population density of 191 persons per square kilometer, and only 19% of the good agricultural land (0.2 acres per person) is found in this region. Population growth is high (3.3% per annum), resulting in increasing land pressures and subdivision of already small rural holdings. Many subsistence farmers are no longer capable of supporting a family using traditional cropping patterns and technologies, thereby forcing family members to migrate to other regions and urban centers.

While the scope of the Amendment will include areas with large numbers of small- and medium-sized farms, it focuses primarily on those sites which can be profitably irrigated under mini-and/or small-scale irrigation schemes. The concentration on areas with the potential for irrigated agriculture has two immediate, important advantages: (a) irrigation tends to increase production security and stability; and (b) the irrigated unit provides a natural organizational nucleus. The former has tangible, short-term benefits for the farmer who may be somewhat skeptical of the change he is being asked to make by irrigating and converting to new, unfamiliar crops. The latter provides a convenient, effective means to transfer technology through training and is a built-in base for extension of credit and marketing.

A key element of this amendment's strategy consists in strengthening the Ministry of Agriculture's agencies via improved management flexibility and coordination at regional and sub-regional levels, following the successful model evolved under the Small Farmer Diversification Project in region I. Flexibility will be attained by placing strategic oversight of the project's components under the existing Regional Agricultural Development Coordinating Committees (COREDAs) in regional I, V, VI, and VII.

Tactical management and coordination of specific field activities will be responsibilities of the corresponding Sub-Regional Coordinating Committees (COSUREDAs). In this way, project components and strategies can be adapted to the very different circumstances of the participating regions, thereby freeing the project's central decision makers -- COSUCO, USAID -- to concentrate on broader issues. The broader authority thus given to the COREDAs and COSUREDAs should encourage real coordination of sector activities and improve public sector responsiveness to local farmers' needs.

This Amendment represents the merger of two successful projects, Small Farmer Diversification and Highlands Agricultural Development. The first has concentrated on the development of production systems appropriate to the small Highland farmer. The second has emphasized small-scale irrigation, soil conservation techniques and, to a more limited extent, watershed protection. The consolidation of these two projects represents a more holistic approach to development, and contributes significantly to the concept of sustainability through an agronomically sound approach. Moreover, this project builds upon the experience of the past 10 to 15 years during which USAID/Guatemala has been instrumental in supporting GOG efforts to introduce profitable agricultural diversification systems with the Highland Indians. These efforts have been highly successful and have withstood the test of time, and, hence, should be correctly classified as sustainable. As a result, some 133,000 persons have not only improved their natural resource base, but now have the means to improve their incomes as well.

This third generation project not only encompasses "sustainable" production practices, but also important activities in marketing, credit and technical delivery mechanisms which support these practices and which allow for improved income and living standards through incorporation of the small farmer into the commercial sector.

Finally, and perhaps most importantly, our concern is to make the "system" sustainable through improved information flow and availability, broad spectrum training, oriented to both technician and management concerns, and well defined adaptive research which will enable the human elements which comprise the agricultural system to make knowledgeable and judicious decisions. With this orientation, we seek to reinforce a system, including both public and private sector participants, that is flexible and able to accommodate and reject elements as conditions dictate. The attempt is to provide the skills and instill the capacity to ensure that rational decisions are forthcoming from the direct participants within the system, rather than defined and imposed from the outside.

### C. End of Project Status

The HAD Phase II Project Amendment will result in a significant increase in agricultural productivity and profitability in the Guatemalan Highlands. These benefits will be achieved through close cooperation between the GOG, USAID/Guatemala and technical assistance from the U.S., third countries and from the Guatemalan private sector. This cooperation, in conjunction with long- and short-term training

and the purchase of commodities, will create a sustainable and institutionalized means of continuing development in the following areas:

- Construction of small-scale irrigation systems in the Highland areas
- Soil and water conservation and agro-forestry in conjunction with small-scale irrigation sites and associated tributary watersheds
- National and international marketing information systems for domestic and export crops
- Adequate credit coverage and efficient delivery for production, and marketing operations and infrastructure
- A system of product grades, standards and measures which will facilitate data gathering and reporting for market information systems
- Improved communication between buyers and sellers, and a greater market orientation among Highland farmers
- A pre-shipment program for exports which will result in reduced rejections for Guatemalan exports, greater compliance and enforcement of export standards, and an established reputation for high quality exports from Guatemala
- Marketing and processing infrastructure established to serve principal production areas and to expedite channeling of produce to the domestic and export markets
- Private sector institutions effectively working in partnership with public agriculture institutions
- Increased small farmer commercial operations through infrastructure, production and marketing credit funds, resulting in increased production and farmer earnings on a sustainable basis
- Efficient and profitable integrated production of traditional and non-traditional crops and livestock on irrigation sites consistent with local and export market opportunities
- Technology generation and transfer responsive to market demands and production potential in the context of land and farmer capability, and sustainable commercial agriculture

- Training and laboratory sites supporting agricultural research and the transfer of production technology
- Establishment of agricultural technical data banks and a research system to solve site-specific production problems and support crop diversification on irrigated lands
- Pest management activities in four agriculture sector regions

#### D. Project Components

Five major components will be implemented under the HAD Phase II Amendment: (1) Land and Water Use; (2) Research and Extension; (3) Credit; (4) Marketing; and (5) Project Support Services. Design of these components is based upon the evaluations of the Small Farmer Diversification Systems and HAD Phase I Projects, which recommended a union of these two efforts. The components will build upon the successes of the two projects, and will emphasize appropriate production technology and services specifically designed to address the Highlands agro-climatic conditions and the capabilities of institutions and organizations in the HAD Phase II Project areas.

A brief discussion of each of these components follows:

#### 1. Land and Water Use (\$864,500)

##### a. Overview

In this component, agricultural production and profitability will be increased through 1) small-scale irrigation, and 2) soil conservation and watershed management. Techniques for small-scale irrigation and watershed management practices have been promoted through at least three USAID-financed projects. The impact of the small-scale irrigation component of these projects has been consistently positive, contributing significantly to increased on-farm income and nutritional levels. This highly successful activity will be the cornerstone of this component. These small-scale irrigation activities will be integrated with location-specific watershed management interventions, which include soil and water conservation and agro-forestry practices, focused on protecting critical tributary watersheds. These three activities are described below.

b. Sub-components

i. Small-Scale Irrigation

This activity will promote an effective institutionalized process of selecting, designing, constructing and maintaining systems to irrigate agricultural lands which are currently used primarily for rainy season cultivation. These irrigation systems will increase small farmer incomes by ensuring a reliable source of water throughout the calendar year via simple, relatively inexpensive technologies which exploit existing groundwater supplies and/or nearby streamflow. Roughly 80% of these irrigation systems will employ simple diversion gravity flow mechanisms. The remaining 20% will be non-gravity flow systems, which will use conventional electrical, diesel or gasoline-powered pumps.

Site selection: Potential small-scale irrigation sites will be identified by interested farmers, farmer associations or by DIGESA extensionists. Selection criteria will be based on the following factors: access, actual and potential crops, availability of technical assistance, critical environmental impacts, land use capability, water quantity/quality and flow regime, water rights, access to agricultural inputs, available marketing options, community organization, land tenure, production technology needs, watershed protection needs and water use conflicts. Once identified, one of the DIGESA small-scale irrigation teams, consisting of an hydraulic engineer and an agronomist/soil conservationist, will make a preliminary screening visit to the site and prepare a brief report documenting any major technical, social or legal limitations encountered.

Design: Based on the preliminary site screening, the Regional Agricultural Development Committee (COREDA) will authorize DIGESA and pre-qualified private contractors to perform the feasibility study and design of the system. This will involve the calculation of water quantity and availability, investigation of water rights and land tenure, determination of potential production options, generation of benchmark data for subsequent monitoring, determination of economic and social feasibility, detailed design of the irrigation system and preparation of a credit application for the proposed project for submission to BANDESA.

Construction and Maintenance: Upon receipt of a favorable feasibility study, COREDA will prioritize the proposed project and submit a recommendation to BANDESA to finance the irrigation system. The system will be constructed by DIGESA or pre-qualified private contractors, who will

organize labor, oversee materials procurement, supervise construction and provide needed technical assistance and practical training in system operation and maintenance. To the extent possible, construction will be undertaken by system beneficiaries. Final acceptance of the completed system will be made by the borrowers and BANDESA, with technical input from DIGESA and/or a pre-qualified technical firm. Maintenance of the systems will be undertaken by benefitting communities. Committees will be formed to undertake periodic cleaning of the canals, holding tanks and associated system components. Repair or replacement of components will be financed by the community through contribution or water-use charges.

ii. Watershed Management Activity

Watershed management will be implemented in the areas of the small-scale irrigation systems and in key tributary watershed areas to provide protection and ensure the long-term productive capacity of hillside plots. As in the irrigation component, the rational selection of activity areas and appropriate techniques will be promoted under this activity. This activity will involve efforts in the following areas:

Selection of activity areas--Watershed management will be introduced in all areas under small-scale irrigation and in key tributary watershed areas. Priority watershed areas will be determined by DIGESA and USAID Project management using a land capability map overlay system based on various physical/social factors including slope, soil depth and actual land use.

Soil and water conservation--This will be undertaken both in irrigation areas and in tributary watershed areas to preserve the long-term agricultural productivity of Highland areas. Soil conservation will prevent erosion of watershed and agricultural areas, and will preserve the topsoil of small farms. Practices will include terracing, contour rows, rockwalls, gully plugs and live barriers, depending on the characteristics of the land capability map overlay.

Water conservation will not only prevent the waste and promote the rational use of this resource, but will also result in higher agricultural productivity. Inappropriate application and overuse of water, which can lead to waterlogging, soil nutrient leaching and salinization problems which result in crop losses will be addressed in this activity by technical assistance in appropriate on-farm water use and water use planning.

Social cost payments will be used to introduce soil conservation practices only in areas where they are not presently being utilized. Interested farmers will be selected by DIGESA agents to receive payments and will be paid on a per unit of land improved basis. BANDESA will participate as the financial agent for the social cost payments, which will be approved by the DIGESA extension agent, and be paid after the installation and protection process is completed. It has been demonstrated in previous USAID projects that once farmers observe and are convinced of the benefits of soil conservation practices, they will construct soil conservation structures without social benefit payments.

Agro-forestry/Forest Management

Activity--This activity will promote the protection of critical tributary watersheds, contribute to the fuelwood supply of the rural population, and increase rural incomes through the production of lumber, fuelwood, fruit trees, fodder and green manure species. The specific objectives include:

- Reduction of deforestation in upland areas caused by fuelwood consumption and land clearing for agricultural use

- Protection of irrigation project water sources, including groundwater recharge areas, upland tributary watershed areas surrounding project irrigated lands, and other endangered local water sources

- Promotion of the establishment and management of local species or proven introduced species to protect critical watershed areas and diversify agricultural production systems

These activities will be carried out in conjunction with DIGEBOS and DIGESA. The efforts of these organizations may be supplemented by a separate grant to a PVO, at a future date.

c. Inputs

Summary

Long-term technical assistance	\$ 450,000
Long-term training	80,000
Short-term training	96,000
In-country training	136,000
Commodities	<u>102,500</u>
TOTAL	\$ 864,500

This component will provide approximately 36 person-months of long-term technical assistance. This technical assistance will emphasize the planning, implementing and monitoring of small watershed land use activities and the definition of criteria and standards for small-scale irrigation project selection, design, operation and maintenance.

The training inputs will provide 48 person-months of long-term participant training in agro-forestry/watershed subjects in third countries (Brazil and Costa Rica) and in irrigation management in the U.S. A total of 24 person-months of short-term training in this small-scale irrigation and watershed management in third country institutions will also be provided.

\$136,000 will be provided to conduct a wide range of in-country training activities including:

16 courses in small-scale irrigation for technical workers and farmers on such subjects as system design and construction, utilization and monitoring

8 courses related to soil conservation for field workers

8 courses in forestry related activities for field workers and farmer participants

An undetermined number of courses for specialists to upgrade their project management and monitoring skills.

Commodities, with an estimated value of \$102,500 will be provided for this component and will include:

15 motorcycles to support DIGESA field visits and activities, as well as a package of specialized office, laboratory, training and field equipment to support small-scale irrigation and soil conservation personnel.

#### d. Outputs

- 270 small-scale irrigation systems developed to irrigate 2,350 hectares, benefitting 6,000 rural families through increased production and income generation.

- Integrated soil conservation and/or agro-forestry/forest management activities in conjunction with small-scale irrigation systems and at tributary sites to protect and/or improve approximately 6,400 hectares for the benefit of over 27,000 rural families.

- Acceptable standards of performance in place and utilized by DIGESA in the design, construction, implementation, maintenance and evaluation of small-scale irrigation activities.

- A multidisciplinary, institutionalized procedure to mobilize public and/or private resources to identify potential small irrigation projects at the regional level through the COREDA's.

## 2. Research and Extension (\$1,500,000)

### a. Overview

The Research and Extension Component addresses the need to generate and validate technology which is appropriate and acceptable to farmers in the Project area. A cyclical process will be followed which maximizes the systematic adaptation of research results to the socio-economic and agro-ecological environment facing the small farmer on irrigated lands. Thus, the objective of this component is to facilitate, sustain and deliver relevant production technology and services to the target population. To achieve this objective, the Project will increase the effectiveness of public sector research and extension services, and exploit opportunities for enlisting private sector resources. Inputs required for this component include training, technical assistance, procurement of commodities and limited remodelling of laboratory facilities.

Specifically, this component is designed to achieve improvements in:

- quality and appropriateness of technology reaching the farmer

- quality of the extension agents who deal directly with the farmer, and of the extension and research personnel who provide support and backstopping to these field workers

- programming of extension and research resources

- information availability

- logistic support for technology transfer

The component will access research expertise and experience from the private sector to supplement currently overextended public sector research resources. Through the use

of credit resources, tailored agricultural technical assistance will be procured from the private sector by small farmer groups on irrigated lands. Drawing on both the private and public sectors will serve to effectively identify relevant research needs, shorten the validation process and improve technology transfer to the small farmer target group.

There are three research and extension sub-components, described below: 1) Participatory Research and Technology Adaptation; 2) Technology Transfer and On-Farm Assistance; and 3) Private Sector Participation.

b. Sub-components

i. Participatory Research and Technology Adaptation

Activities under this sub-component will be directed towards on-farm adaptation of technology applicable to small-scale irrigation sites with commercial production potential. Experience gained in Region I under the Small Farmer Diversification Systems Project demonstrated that this site focus leads to successful adoption and expansion of commercially viable vegetable, fruit, and livestock activities. Nonetheless, considerable work needs to be done to increase farmers' technical knowledge, improve and sustain quality input delivery systems, and identify marketing opportunities, especially for export-oriented commodities.

As an initial step in its research and technology adaptation activities, ICTA, with the assistance of DIGESA, DIGESEPE and appropriate private sector entities, will identify: a) potential collaborating farmer groups in project target areas; b) viable opportunities for increased production of commercial crops and small-animal species; c) producer-group preference in the production of higher-value commodities; d) important constraints to irrigated production; and e) availability and gaps of validated technology for market-oriented production.

DIGESA and DIGESEPE, in coordination with ICTA, will then develop strategies for adapting available technologies for targeted groups of farmers. Applied research activities will emphasize improved crop and livestock productivity and practical pest management procedures.

ii. Technology Transfer and On-farm Assistance

This sub-component will improve the quality and effectiveness of agricultural support services to

participating farmers. DIGESA and DIGESEPE will serve as lead agencies for the provision of support services for the farmers, which will focus on: a) appropriate market information for small-scale producers; b) transfer of technology by production specialists to expand farmer skills; c) information on new technologies; d) extended on-farm trials and streamlined technology transfer; e) credit for small-scale systems production and marketing provided by BANDESA; and, f) farmer group orientation toward marketing concerns.

The sub-component is comprised of four steps: technology validation and transfer; development of regional technical information banks; implementation through training programs; and provision of agricultural support services.

The validation and transfer of agricultural technology follow a sequence of six sub-steps:

- site identification, in which specific irrigation sites for Project attention are selected on the basis of commercial crop and/or livestock potential

- testing and field trials for selected activities on experiment station fields, in nurseries or laboratories, or on selected farms

- validation on selected farms in Project areas

- transfer of the validated technologies/varieties to extension agency personnel

- extension of the technologies directly to interested farmers

- evaluation and follow-up over a span of two or more production cycles to assess the sustainability of the new technologies

In view of the wide variation in agronomic, economic, and cultural characteristics of the geographic areas to be covered by this Project, flexibility in executing these six steps will be vital. ICTA, DIGESA and DIGESEPE will jointly carry out the validation/transfer process with the participation, when appropriate, of technical assistance personnel and private contractors.

Regional technical information banks will be established under this component. Given the potentially

large number of crop/livestock technical packages and the distinctive agro-ecological conditions encountered in the Project areas, the systematic accumulation, processing, exchange, and review of technical information will be vital for problem identification and response. Such information, with the accompanying diagnoses, must be networked and fed back to the institutional back-stop professionals and the validation/transfer personnel.

Coordination among personnel involved in adaptive research, extension and technical assistance activities will be addressed through focused, in-service and academic training programs for producers, guias agricolas, extensionists, and technicians. Standardizing the work focus around key concepts of "farming systems" and instituting simplified, systematic evaluation and control procedures will result in better communication among the various sources of help to the farmer. Training of extensionist will reinforce important aspects of commercial production for selected crops and livestock, extension concepts within the framework of on-farm systems methodologies, and basic concepts of marketing and farm recordkeeping. Guias agricolas will also be trained in farmer organization, production techniques and marketing concepts.

To determine regional resource needs for appropriate research and extension personnel to facilitate technical interventions in the selected irrigation production sites, the Research and Extension subcommittee of the Project Executive Committee will be encouraged to estimate overall manpower requirements. Refinement of training priorities by region and improved guidelines for distributing training resources and material will thus be primary objectives of this activity. The experience gained by ICTA, DIGESA and DIGESEPE in Region I under the Small Farmer Diversification Systems Project will serve as a basis for developing realistic estimates of manpower, skills, and related resource needs during the life of this Project. Closely integrated inter-institutional planning, conducted under the auspices of the local COREDA, will take into account the various needs assessments, production credit records, and irrigation site evaluations. The ICTA regional characterizations will serve as a valuable means for determining how human and physical resources may best be combined to provide targeted farmers with appropriate, timely, and continuing services.

Finally, agricultural support services for extension personnel and producers will be provided by ICTA, DIGESA and DIGESEPE in post-harvest handling of fruit and vegetables, implementation of crop and livestock production recommendations, pest diagnostics, supervised pesticide use,

pest control recommendations, soil and plant analyses, and fertilizer recommendations. These support services will be carried out at the new soil and plant tissue laboratories proposed for Quetzaltenango and Zacapa which will be constructed and equipped as elements of the existing plant protection laboratories. The central soil and plant tissue laboratory located in Guatemala City will be also upgraded (see Annex P).

### iii. Private Sector Participation

Farm-level technical assistance is an important element in the transition from subsistence to commercial agriculture and in the process of modifying commercial production systems. The extension capacity of the public sector is limited by the quantity and quality of its resources. Human, physical and financial limitations define its outreach capability; experience and training define its areas of competence. The coverage that extension agents can provide to the target producer groups is further restricted by obligations to other elements in the agriculture sector, especially the subsistence farmer.

For Project purposes and the long-run sustainability of commercial agricultural activities, adequate technical assistance from additional sources must be drawn upon. The private sector has a substantial reserve of trained agricultural professionals currently employed outside of agriculturally related fields. By tapping this source, private technical assistance will provide an alternative to the public sector extension service, and would subsequently receive financing from a credit line in the same way as other inputs (e.g., fertilizer and land preparation). The creation of this option will increase the overall availability of farm-level technical assistance.

The GOG and USAID, in consultation with relevant private sector entities (e.g., the Colegio de Ingenieros Agronomos and the Asociacion de Peritos Agronomos), will define the mechanism by which private agricultural technicians provide technical assistance to small-farmer groups. During a trial period (e.g., three cycles), private sector technical assistance will be financed on a non-reimbursable basis from a special account in BANDESA. Following this trial period, continued use of private sector technicians will be credit-financed.

The mechanism established for private sector participation in extension services will describe fees and payment modes, limits on work load, terms of reference, and legal instruments to execute farmer/technician contracts. In

addition, qualifying criteria (training, experience and prior performance requirements) and a system for monitoring and evaluating the productivity and quality of both the mechanism and individual technicians will be defined.

c. Inputs

Summary

Long-term technical assistance	\$ 225,000
Short-term technical assistance	384,000
Short-term training	64,000
In-country training	50,000
Commodities	517,000
Const. and rehab. of labs and inspection facilities	260,000
TOTAL	\$1,500,000

The component will provide approximately 18 person-months of long-term technical assistance in pest management and fruit specialties. A total of 32 person-months of short-term technical assistance in seed and nursery management, extension training and materials development, pest management and small species livestock specialties will also be provided.

Training inputs will provide approximately 16 one-month training grants to visit U.S. or third country sites for observation/skills training in plant/soil analysis, pest diagnosis, tropical fruits, seed technology, animal nutrition and vegetable crops.

Approximately \$50,000 is planned for comprehensive in-country training programs that will include courses for technicians and extensionists in practical, "hands-on" subjects; courses for guias agricolas in appropriate subject areas; national level seminars; and selected courses in management, financial administration/planning, personnel management, technology monitoring and evaluation topics.

Commodities for this component have an estimated cost of \$517,000. Procurements include 12 motorcycles to support ICTA's field testing and outreach education programs throughout the regions selected for the Project. Laboratory equipment for back-stop services, testing and field support to facilitate integrated pest management, soil analysis, fertilizer and soil maintenance, and seed improvement activities will be procured. Also included will be a range of laboratory supplies and expendable items currently in short supply or non-existent

and which will impact on how the laboratories perform day-to-day services.

The Project will also provide commodity support, primarily in-country, necessary for technical teams to do on-site or field demonstration and training work with farmers in the irrigated areas. Collaboration of Peace Corps Volunteers will be sought to expand the capacity to undertake these activities. These include fruit and vegetable verification trials, pest control and fertilizer demonstrations and trials, seed testing, and improved practices for both crops and livestock. To backstop these field and laboratory activities, training materials and supplies will also be procured.

Several training and laboratory facilities have been determined as needing limited rehabilitation to strengthen the research and outreach commitments to diversification which are promoted under this Project. A total of \$260,000 has been planned to upgrade facilities for the La Esperanza training center, soil productivity and pest diagnostic laboratories and export inspection facilities.

d. Outputs

The major outputs of the Research and Extension component include:

- the establishment of four facilities which will serve the dual purposes of training and laboratory sites in support of the diversification thrust of the Project
- technical data banks will be available to extension personnel, production agronomists and livestock specialists to provide regional access to production information
- a simplified research system, based upon sound, applied investigative and participatory techniques will be in use by ICTA, DIGESA and DIGESEPE to solve site-specific production problems
- the regional COREDA's will be strengthened in their support of diversification efforts on irrigated lands
- integrated pest management activities will be fully operational throughout the Project area

### 3. Marketing (\$802,000)

#### a. Overview

The primary objective of this component is to strengthen the public/private sector marketing infrastructure to serve Project production areas and expedite the channeling of produce to domestic and export markets. To achieve this objective, two sub-components are designed to establish: (a) a market information system operating at the national level and dealing primarily with the domestic market and, to a loose extent, the Central American Regional market will be established in INDECA and will have links to an existing export information system; and (b) a pre-shipment product quality control program, including a system of grades, standards and measures, established for producers, exporters and buyers. The principal implementing agencies for this component are INDECA and DIGESA and its office of Sanidad Vegetal.

The Marketing Component design is based on the lessons learned during the Small Farmer Diversification Systems Project final evaluation, the USAID/Guatemala Agriculture Sector Development Strategy, and experience gained in other countries. The central strategy of this component is to finance activities designed to create a favorable marketing environment that will benefit producers, wholesalers, retailers, and consumers. Specifically:

#### b. Sub-components

##### i. Market Information System

Marketing-related services will be provided mainly by the Instituto Nacional de Comercialización Agrícola (INDECA) to public and private sector agencies. INDECA will install a Market Information System, develop product grades and standards and carry out market monitoring. This component will also be supported by market investigation and other studies contracted under the Project Support Services Component.

The Market Information System (MIS) will be installed in INDECA with long- and short-term technical assistance for system design and operation. Data processing equipment, field vehicles for logistic support, and training in off-shore and in-country locations and additional financial support for the costs and disseminating the compiled marketing information using mass-media and other means of communications will be provided.

The major focus of the INDECA's MIS will be the domestic market. Because of established market linkages, regional export markets (e.g., México and El Salvador) will also benefit from the system. Export markets in the U.S. and Europe are of lesser importance to Guatemalan producers not specifically geared to those markets. The Non-Traditional Products Exporters Guild (Gremial) currently specialized in these markets, and has ready access to all major reporting services. This component will therefore support INDECA's use of the Gremial's export market information expertise through reinforcement of communications links, through which market and production information will be exchanged.

INDECA will also establish relevant grades and standards for principal products traded internally and in regional export markets. The grades and standards to be developed will reflect the norms of the Guatemalan market, and will permit a common set of criteria to be defined for use in the information system.

Training will be provided to MIS users to gain facility and standardization in its practical use. In addition, INDECA technical capacity will be increased in the area of techniques to improve the quality of product handling. INDECA will also maintain an on-going system of market monitoring for purposes of improving the information system.

Market study and research will be carried out by the Project Support Services Component and primarily aimed at the internal and regional export markets. Studies will include internal market development potential, transportation, and product differentiation. Periodic analyses of trends and market directions will be made available to sector participants, based in large part on the output of the information system. Additional areas for investigation will be identified by the Guatemalan and technical professionals.

The extension service link to the marketing process will be provided by DIGESA. As indicated earlier, a major effort of the Phase II Amendment is to create an awareness of the market, and develop a capacity to participate in it. The extension services of DIGESA will be the producers' principal conduit at the field level for incorporating marketing criteria into the production process. Three long-term market specialist will be financed by the project to perform a dual role as marketing advisors and trainers for DIGESA personnel. The functions of these three specialists will be to identify market opportunities, orient producer groups toward markets and strategies, train extension personnel and farmers in techniques of integrating market considerations into

production decisions and guide INDECA on dissemination of farm-level observations and experience.

ii. Product Quality Control System

The goal of this sub-component is to reduce or eliminate the possibility of exporting contaminated plant products to foreign markets, and to establish recognition in foreign markets of high quality control standards. To fully accomplish this goal, the GOG would subsequently have to enact pesticide regulatory legislation on residue tolerance levels and licensing of produce distributoros. Four areas will be addressed by this sub-component: the development of quality control mechanisms, pre-shipment inspection for pests, screening for pesticide residues, and training and extension activities that concentrate on correct pesticide usage and handling methods to reduce post-harvest pest infestation.

Quality Control mechanisms will be developed in conjunction with the Gremial in order to achieve a recognized high standard of quality for exports of Guatemalan fresh fruits and vegetables, such as has now been achieved for snowpeas and some varieties of melons.

Pre-shipment inspection will provide services within Guatemala for fresh fruits and vegetables destined for export. It will utilize the system and standards established by the USDA because of the international recognition of this system and the importance of the U.S. market. A USDA PASA and ICAITI will provide technical assistance in this area. The adoption of this system will eventually result in an acceptance of the reliability of Guatemalan inspection. The program will also have a positive impact in domestic markets by increasing the capability and infrastructure of the Guatemalan quarantine service to monitor pest threats posed by products entering the country and by applying many of the same standards and criteria to products for internal consumption. The Gremial will coordinate promotion and financial aspects with the private sector.

Pesticide residue monitoring will be carried out in conjunction with pre-shipment inspection. This activity will establish a service for monitoring pesticide residue levels in sample produce from both export shipments and local marketing centers. Collection of samples will be carried out by Sanidad Vegetal and samples will be sent to laboratories for residue testing.

Plant protection training and extension activities will depend upon a rapid information system which

tracks back from the rejected produce to the producer, exporter, packager, or transporter to identify the responsibility and cause of rejection. This will require the cooperation of the control and extension agencies of the public and private sector, export and internal marketing participants, such as the Gremial, major wholesalers and producers. The free flow of information regarding technology use and market consequences is a critical element to establish dependable product quality.

c. Inputs

Summary

Long-term technical assistance	\$ 300,000
Short-term technical assistance	192,000
Short-term training	56,000
In-country training	70,000
Commodities	<u>184,000</u>
TOTAL	\$ 802,000

This component will require approximately 24 person-months of long-term technical assistance to INDECA to develop and strengthen public/private sector marketing expertise. A total of 16 person-months of short-term technical assistance will be financed to address concerns of marketing grades and standards and information systems (data collection, analysis and dissemination) and equipment and program training.

Approximately 8 short-term grants totalling 12 person-months will be provided for short, observational trips and basic "hands-on" skills upgrading courses in quality control, grades and standards, marketing information, export marketing, processing and packaging, and generalized marketing activities related to protection, inspection and monitoring.

Approximately \$70,000 will be provided for comprehensive in-country programs that will include over 50 courses in marketing orientation to field workers and farmer groups, 20 information systems training programs to the MAGA entities and 18 farm planning and management courses for outreach workers and farmer/farmer groups. Also, two specialized export promotion and three export inspection and control seminars/courses will be provided to key private sector personnel and/or senior and middle-level staff of concerned MAGA institutions.

Commodities for this component are estimated at \$54,000, and will include 2 pick ups and 8 motorcycles to support INDECA's field activities. Data processing and transmittal equipment to support DIGESA and INDECA work related

to improved grades and standards, and marketing information services, will also be procured.

Working capital for marketing operations will be provided under the Credit component, as well as funds for investment in market infrastructure.

d. Outputs

- Market Information System with national and international coverage of prices and product movement

- System of product grades, standards and measures which will facilitate data gathering and reporting for the information system, improve communication between buyers and sellers, and instill an orientation toward market requirements and demand, especially among producers

- Pre-shipment program for exports which will result in reduced problems and rejections for Guatemalan exports; producer and exporter awareness of the need and value for internal controls on exports; standards for Guatemalan exports; an institutional responsibility for promoting and enforcing compliance with export standards; and an established international reputation for quality for Guatemalan exports

- Private sector institutions effectively working in partnership with public agricultural institutions to achieve component objectives

4. Credit (\$4,422,000)

a. Overview

The Phase II Amendment will strengthen BANDESA's credit analysis and administration in a minimum of four regions of the country through three interventions: (1) technical assistance to improve the operations of District Offices, agencies and "cajas rurales"; (2) equipment and logistical support including field vehicles, basic office equipment and data processing systems; and (3) training in loan analysis, credit administration and data management. In addition, funds will be provided to augment an existing credit component.

The objective of the credit component is to provide financing, through a loan fund, to Project beneficiaries for agricultural production, construction and maintenance of irrigation systems, marketing working capital and infrastructure, and soil conservation activities.

Additionally, BANDESA will disburse, through a special account, funds for private sector technical assistance in the design and construction of irrigation systems and for agricultural production.

b. Sub-components

i. BANDESA Credit Operations and Administration

Earlier evaluations have recommended the decentralization of BANDESA's activities to increase its efficiency in credit analysis, delivery and administration, as well as to lower operational costs. In March/April, 1988, the Mission financed an in-depth evaluation that concluded that there have been some improvements in BANDESA's decentralization of loan operations and expediting of loan processing in recent years. The Bank, however, has continued to incur high annual operating losses; loan delinquency remains a problem; personnel and operations are still overly centralized and bureaucratic; infrastructure is obsolete and deteriorating; loan analysis, delivery and administration is deficient; and, the lack of liquidity continues to limit the number of small and medium-scale producers having access to production and investment financing.

The problems identified in the evaluations are complex. Ongoing discussions between the Mission and the Ministry of Agriculture are taking place to seek the most effective manner to address BANDESA's problems. In conjunction with these discussions, the HAD Phase II Amendment will encourage and support a gradual improvement of BANDESA operations in Regions I, II, VI and VII.

The amendment will finance technical assistance and training for bank personnel and will provide logistic support to District Offices, agencies and "cajas rurales" in the targeted regions. Region I will serve as the model to determine the extent of administrative and policy changes required to give sufficient autonomy to its regional office. Based on lessons learned during the ongoing decentralization in Region I, activities in three additional regional offices will be initiated and resources to support their upgrading will be made available in accordance with BANDESA's overall decentralization strategy.

As noted, the March evaluation concluded that BANDESA has made some progress in loan analysis, approval and delivery process. Of the 30,000 loans made in 1987, 29,800 were approved at the agency level. However, loan documentation

is excessive and generates high costs to both the borrower and the bank, there is little loan follow-up due to a scarcity of trained field personnel and the need to depend upon central office financial and accounting reports, and there is no marketing plan or effective regional budgeting process.

The HAD II Amendment has reserved a total of two million dollars (US\$2,000,000.00) in Grant funds which will be used to provide additional capital to the BANDESA trust fund. These funds will be tied to a CP and will be released only once the GOG has financed a loan fund of \$5.0 million dollars (Quetzal equivalent) to supplement the existing AID fund, and once a full-scale decentralization of Regions I, II, VI and VII has been approved and initiated by the Guatemalan government.

This plan will include an increase in regional loan approval authority, decentralization of loan analysis, delivery and administration, relocating loan collection personnel and processes at the regional offices, and decentralizing accounting procedures and financial reporting.

Regional decentralization, however, will not solve all of the problems of BANDESA. The delegation of authority and accountability to the regional offices will bring management decision-making closer to the agencies where the farmer loan programs are being implemented. Regional staffing must be increased and the quality of personnel upgraded to promote more effective and rapid lending and to increase recoveries in the outstanding portfolio.

#### ii. Operation of the Project Loan Fund

The Loan Fund mechanism used in prior USAID-supported Projects provides an opportunity to introduce innovations in lending criteria as a means of increasing BANDESA's effectiveness in channeling financing to Project beneficiaries. Modifications to the credit policy of the HAD Trust Agreement will be developed and incorporated to streamline the loan analysis and approval process, reduce documentation and guarantee requirements, and accelerate loan disbursements. Possible modifications may include the use of multi-cycle crop loans, balloon payments on investment loans, signature loans for class "A" clients, etc., as a means of both accelerating credit delivery and increasing the number of borrowers obtaining access to Project financing.

The BANDESA Loan Fund will provide financing to small farmers for: (a) crop production, irrigation construction and maintenance; (b) marketing working capital and

infrastructure; and, (c) soil conservation activities. Briefly, these activities are discussed below:

(a) The production credit element is very similar to that in the Small Farmer Diversification Systems Project. However, financing is not restricted to export-oriented crops and credit will be available to finance basic grain production. All lending for livestock investments will be directed at the establishment of commercial enterprises in which livestock is a primary activity and source of income.

(b) Investment financing for irrigation construction and maintenance will include both gravity and pump systems, however, preference will be given to gravity systems in order to lower initial investment, operation and maintenance costs to the small farmers and enhance their repayment capacity.

Currently infrastructure loans have an extended repayment period (i.e., ten years) in order to compensate for the farmers limited repayment capacity in early years. Although this has reduced the annual principal payments and brought them into line with the producers' ability to pay, it has also resulted in high interest costs over the life of the loan and delayed the reflow of investment capital. For this reason the Project will continue to investigate other financial mechanisms to lessen the investment costs of Project beneficiaries.

(c) Project financing will also be available for marketing working capital and infrastructure development. Priority will be given to producers and producer associations seeking entry into local and international markets to enhance value-added income. The most likely use of infrastructure financing at the local and regional levels will target collection and distribution centers.

Finally, the Project will continue to provide non-reimbursable financing to small farmers to promote the expanded use of soil conservation measures. These activities include terracing, contour rows, rockwalls, gully plugs and live barriers.

### iii. Special Account Financial Services

The special account financial services component includes two pilot activities to be managed by BANDESA separate from the Loan Fund but in close coordination with credit delivery to the Project beneficiaries. The first activity will finance the use of private sector firms to complete feasibility and design studies of irrigation systems.

The second activity will finance the contracting of private firms and individuals to provide technical assistance for crop production and livestock management.

This use of Project financed technical assistance will speed-up the design of irrigation systems, increase the likelihood that borrowers will make sound investment decisions, and provide BANDESA with an additional assurance of loan recovery.

In order to encourage both the Bank and the borrower to use private sector technical assistance, the Project will provide funds to be administered by BANDESA through a special non-reimbursable account, on the premise that, once private technical assistance has demonstrated its value, the farmer will be more willing to pay for such support.

A final decision concerning the grant/loan mix in the use of these resources and the specific terms and conditions to govern the use of this special account will be approved by A.I.D. and the GOG and be taken prior to disbursement of financing for technical services.

c. Inputs

Summary

Long-term technical assistance	\$ 300,000
Short-term technical assistance	252,000
Short-term training	84,000
In-country training	150,000
Commodities	776,000
Loan Fund	<u>2,860,000</u>
TOTAL	\$ 4,422,000

This component requires 24 person-months of long-term technical assistance with primary emphasis on developing and implementing a sound credit management program. Assistance will also be provided to the administrative reform process agreed upon in Project Amendment IV. An additional 21 person-months of short-term technical assistance will relate to implementing computer systems and organization and methods issues in the credit delivery process.

Training inputs will provide 21 person months of short-term participant training for selected BANDESA personnel in an appropriate third country in financial analysis and/or credit management. In-country training activities will include courses in credit and finance and/or data management plus several broad-based courses in personnel management,

evaluation and monitoring. To strengthen and expand operations in the regions, 30 vehicles will be provided. Data processing and adequate office support and demonstration equipment to meet the office operation and information needs of the Project will be procured.

d. Outputs

By the HAD Phase II PACD, the following outputs will have been achieved by the credit component:

- Effective long-term decentralized management capacity within BANDESA to structure, operate, and monitor its credit activities will be operational, including the ability to:

- Design Trust Fund agreements responsive to Project objectives

- Generate, process and analyze loan data  
- Incorporate valid financial and banking criteria into loan administration

- A logistic structure will be established within BANDESA enabling it to effectively manage its development portfolio

- Increased commercial farming operations will be achieved by small farmers through infrastructure, production and marketing credit funds, which will result in increased production and farmer earnings on a sustainable basis

- A credit line item for private sector technical assistance will exist which:

- Generates a demand for private sector professionals

- Reduces the pressure on public sector institutions

- Completes the transition of the small farm to a small business

5. Support Services (\$5,226,400)

a. Overview

This component has been designed to ensure the effective and efficient implementation of Phase II of the

Project. The magnitude and complexity of the HAD Phase II Project requires substantial improvements in the Project management structure, and the establishment of built-in flexibility to respond technical assistance needs as they arise during Project implementation.

The use of a contractor for crucial, but tedious contracting services is a key element of this project, as is the extensive use of in-country research and technical support services. Key long-term contractor personnel will take the lead in delivering a structured package of technical assistance, in-country and off-shore training, and commodity support.

The services of an agricultural policy advisor will be contracted directly by the Mission. The advisor's primary function will be to ensure that the policy dialogue/reform and institutional strengthening interests of the Project are properly represented in the PL 480- and ESF-supported agricultural policy dialogue with the GOG. This integration of a DA/PL 480/ESF agricultural policy effort will help create an environment that includes stable and predictable macroeconomic and financial policies and the development of an institutional and infrastructural base required to support a robust, internationally competitive export agriculture. Additionally, the policy advisor will address agricultural planning issues to strengthen the MAGA's Planning Unit, USPADA.

b. Sub-components

i. Project Management

The Contractor will serve as the principal mechanism on behalf of USAID to ensure that resources and services (including commodity procurement, training, technical assistance contracting, and Project implementation and impact monitoring) are made available in an expeditious manner, relieving USAID Mission personnel of the time-consuming clerical aspects of these activities.

The Contractor will be assigned functions which often cause implementation delays, and which historically have been poorly managed by both USAID and the GOG. Traditionally, these functions have been provided under a series of contracts between USAID and private firms or other public institutions. The multiplicity of functions and sub-contractors has usually caused serious management difficulties and a confused hierarchy of responsibilities. The Contractor will establish a point of accountability and a precise structure for support services, and will respond to the

demands of the GOG and USAID as outlined in terms of reference and implementation schedules.

ii. Technical Support Services

USAID and the GOG will approve a package of services to be contracted to in-country private or non-profit institutions and/or consigned to appropriate GOG public sector institutions through grant-type agreements to perform specified tasks, analyses or support services. The range of activities will include data management, market information dissemination, publication/information printing and documentation, feasibility and design studies for irrigation, training needs assessments, contract research, and project orientation. This will provide a quick response mechanism to Project demands, as determined by implementing agencies and technical assistance advisors.

iii. Special Studies/Analyses

The purpose of allocating these Project resources is to anticipate Project-related needs for new knowledge and information and stimulate a professional investigative capacity. In response to identified information needs, the Contractor will commission specific studies in order to:

- Provide a sound analytical base from which to improve the Project's planning, programming, and policy decisions

- Develop reliable sources of information from which to identify, analyze and resolve problems

- Provide a basis on which to reprogram resources and forecast long-range needs in succeeding phases of the current Project

- Test performance criteria

During the life of the Project, it is anticipated that at least seven such studies can be completed with the funding allocated. Illustrative studies/analyses include:

- Feasibility of establishing country-wide vegetable grower, wholesaler, exporter, etc., associations. Examine alternative organizational mechanisms, improved access to market information and relationships with middlemen and potential buyers.

- Feasibility and benefits of the creation of an internal system for controlling the quality of export produce.

- Specific opportunities and outlets in regional export markets.

- Management and institutional efficiency of irrigation. Examine the situation of water and the water user in Guatemala's Highlands twenty years from now; needs and relationships of water laws to water user associations; and government interface with community systems in terms of roles and responsibilities.

- A similar study in conjunction with soil conservation.

- Establishment and maintenance of a sector-wide, user-oriented agricultural data bank to support alternative policy analyses: where should such a bank be located? What kinds of quantitative data and qualitative information should be in it? How should it be updated? What institutional links and computer facilities should be established? What analytical capabilities are recommended? Should these be within the public sector or contracted out? Is technical assistance needed?

- What are the demand implications of projects designed to increase food supplies: How are farm consumption and dietary patterns affected by changes in incomes and food prices? How are these reflected in the balance between autoconsumption vs. sales and purchases of food (and other items) on the market? What are the implications for domestic and export availabilities? Given growing population pressures, what will be the likely future tradeoff between policies to promote food exports vs. domestic food security?

- Given the extensive land use required for cattle and sheep production, is long-term livestock export promotion consistent with policies designed to aid land-starved small farmers? How complementary are livestock "modules" with other small farm activities (quantitatively) in different areas? What are the implications of diminishing farm sizes for optimum livestock packages? How might domestic market demand be stimulated for high-productivity species? What are the chief bottlenecks impeding increased production and improved animal health and genetic potential?

- How should agricultural research priorities best be established? What is the tradeoff between

basic vs. adaptive research? Should DIGESA and DIGESEPE be involved? How might support for ICTA be improved? Should the private sector be tapped beyond the level contemplated in the Project Amendment?

iv. In-Country Technical Services

This activity will support the hiring of long-term, mid-level technical expertise to facilitate operation of the various Project components, improve the strategy and coordinate planning of Project activities, strengthen Project information processing and monitoring and render follow-up and feedback assistance for field activities. This is primarily to incorporate and bridge the long-term arrangements established in HAD I and which will be greatly expanded in this supplement, as well as facilitate new and more comprehensive procurement and training support. The profile of these services includes irrigation and soil conservation, irrigation structures, watershed and ground water, commodity procurement and training and information systems specialties. These services will be arranged and administered by the Contractor with approval by the GOG and USAID.

v. Environmental Needs

An environmental assessment of the Project will be conducted in August-September 1988 and will provide findings and recommendations that will be incorporated into the overall Project structure in late FY 88. This sub-component will reserve a budget line item consisting of \$100,000 to address technical assistance, training and other resource needs identified in the environmental assessment.

c. Inputs

Summary

U.S. Admin. Services and Support*	\$ 2,063,400
In-country technical services *	1,610,000
Technical support (In-country contracts/grants)	973,000
Baseline Study	150,000
Environmental needs	100,000
Policy Advisor	<u>330,000</u>
TOTAL	\$ 5,226,400

This component will require approximately 69 person-months of long-term technical assistance to facilitate

management of the Project and administer the training and commodity resources; this includes the Contractor's Chief of Party/Management Specialist, Training Advisor and Procurement Specialist.

Approximately 35 person-months of short-term technical assistance will be required to design, implement and produce the special studies and analyses. Approximately 312 person-months of mid-level assistance from Guatemalan sources will serve as field facilitators for the Project, particularly as related to irrigation development activities, training and commodity procurement.

This component will provide the in-country Contractor office support which will include: 1) support personnel such as administrative assistants, financial analyst, training support, secretaries (bilingual), clerks and office support; 2) office equipment and furniture; 3) office supplies; 4) communication installation/support; 5) office rent and security services; 6) in-country transportation for TA and; 7) Contractor home office support.

#### d. Outputs

The Support Services component will achieve the following outputs:

- Establish a streamlined management structure to properly allocate, utilize and monitor Project resources
- Provide participating GOG institutions with needed in-country technical services in areas that cut across the other four components
- Provide in-country mid-level technical/managerial professionals to complement the GOG and Contractor technical assistance arrangements in a broad array of activities, ranging from enhancing and better utilizing the natural resource base to establishing expanded logistic support functions (e.g., commodity procurement, training, data management systems)
- Conduct at least seven special studies and analyses to improve the planning, programming, and policies related to attaining particular Project objectives
- Address concerns resulting from the Environmental Assessment in progress

#### IV. PROJECT ANALYSES

##### A. Technical Analysis

##### 1. Land and Water Use

Land and water resources will be utilized under Phase II to increase the productive capacity of Highland farms, while assuring their conservation through sound management activities. Two specific activities will be undertaken to achieve this end: 1) Irrigation; and 2) Watershed Management. These activities will be implemented in an integrated manner to assure a proper balance between resource utilization and conservation. They will be carried out by a combination of GOG and private institutions in irrigated areas and key tributary watersheds to insure the long-term high productivity of Highland plots and resource protection. Provided below are summarized technical analyses of the land and water use activities to be undertaken under Phase II. Annex L contains detailed analyses.

Under the USAID-financed Small Farmer Development (520-0233), Small Farmer Diversification Systems (520-0255) and HAD Phase I (520-0274) Projects, small-scale irrigation and watershed management activities were undertaken. The evaluations of these Projects have provided the basis for the following technical analyses.

##### a. Small-Scale Irrigation

Under previous USAID projects, 87% of the installed small irrigation systems have operated by simple diversion gravity flow, employing either sprinkler systems or surface ditches for water application. The time required for installation of these systems varied between 180-220 days depending on topography, water rights regulations, size and type of irrigation system and number of beneficiaries. Phase II of HAD proposes to install similar systems in the Highland areas.

Analyses of these small-scale irrigation systems have found this technological package to be sound; however, several recommendations have been made to improve implementation. Changes that will be incorporated into Phase II of HAD include soil conservation activities in all irrigated areas, implementation of a systematic site selection process, and development of a computerized data base for monitoring and analyzing projects.

To provide a more comprehensive and integrated approach to water and land use for irrigation, construction and utilization of these systems will be undertaken together with

water use planning, agro-forestry and soil conservation techniques not only in irrigation areas, but in tributary watersheds as well.

Detailed information on site identification, construction, maintenance, data base for monitoring and evaluation, technical assistance and training is included in Annex L.

b. Watershed Management

Experience from previous projects show that the limited amount of prime agricultural land, combined with high population growth rates, has forced the small farmer to remove natural forest growth and cultivate ever steeper hillside lands. In HAD Phase II, watershed management will consist mainly of soil and water conservation and agro-forestry practices. Due to the key role these activities play in preserving the long-term productivity of agricultural land and their close interrelationship, these practices will be integrated together, and with irrigation activities. In fact, as deforestation and conversion to agricultural land use occurs, water retention has been reduced in many areas and runoff has increased, resulting in reductions of streamflow and locally important water resources. Significant soil losses also result. This loss of soil and reduced water availability have resulted in decreased crop yields, and, in turn, decreased farmer income.

Watershed management practices have been promoted successfully in the Guatemalan Highlands for many years. Over 2,225 hectares of bench terraces and contour rows have been constructed under previous USAID projects in Region I using home-made leveling devices and hand tools. In other areas, hillside ditches, rock walls, live barriers and gully plugs using similar design and construction techniques have also been found to be appropriate measures to conserve soil and water resources. When integrated with crop management practices (e.g., conservation tillage, contour cropping, incorporation of crop residues, composting, green manuring, mulching and strip cropping), these measures have had a marked impact on crop production levels and long-term productivity.

Previous USAID project evaluations indicate a need to integrate irrigation with watershed management. Under the Phase II Amendment, this will be accomplished at irrigation sites and in tributary watershed areas. To increase effectiveness, the management package will be broadened to include agronomic practices and conservation structures. These measures will also be expanded to respond to a wider range of

soil, topographic and climatic conditions to assure optimal crop productivity while conserving valuable resources.

Agro-forestry was introduced as a pilot activity under HAD in 1983. This component promoted the production of fuelwood by reforestation of public lands and seedling planting on small private land holdings. As reported in the project midterm evaluation, this component did not adequately support or address the overall objectives of small-scale irrigation and soil conservation activities. However, in Phase II of HAD, agro-forestry will play a more integrated role in the management of tributary watersheds for irrigation areas. In addition, Phase II will address further Highland problems by broadening the scope of this activity to emphasize on-farm agro-forestry activities and the protection of important forest stands in key watershed areas.

Past USAID experience has indicated that agro-forestry activities need to promote the establishment and management of local species or proven introduced species to protect critical watershed areas and diversify agricultural production systems. This will be accomplished under Phase II by selecting species characterized by ease of propagation, hardiness and productivity. Agro-forestry will also emphasize the incorporation of complementary multi-use tree species within existing or recommended cropping systems planted along fence lines as live fences and windbreaks, incorporated with conservation structures (such as along terrace slopes, rock walls or hillside ditches), and in mixed stands for watershed protection and lumber/fuelwood production. On upland watershed areas with existing tree stands, forest management (including reforestation, thinning, selective cutting and/or protection from fire and animals), will be employed.

Successful appropriate agro-forestry technology packages that include these techniques have been developed by the Centro Agropecuario Tropical de Investigación y Enseñanza (CATIE) and the CARE/INAFOR agro-forestry projects. It is expected that these well-researched and applicable packages will be employed in Phase II of the project by DIGEBOS (INAFOR's successor) and DIGESA. As noted earlier, these activities may be supplemented by a separate grant, to a PVO, at a later date.

Detailed information on the specific watershed management techniques, their sequence of implementation, selection of conservation areas, technical assistance, training and research under this activity is included in Annex L.

## 2. Research and Extension

The socio-economic characteristics of farmers with limited resources have been stated many times and are applicable to Guatemalan "small farmer" agriculture. These can be summarized as follows: 1) they are poor and have little ready cash; 2) loans to them are usually unavailable or expensive; 3) they are thoroughly conscious of an uncertain environment, of cash shortage and of family responsibilities; therefore, they are risk-averse; 4) they often suffer cyclical labor shortages and underemployment; 5) they may have opportunities for competing off-farm employment; 6) they are economically rational, but may not necessarily be profit maximizing because they have their own scales of utility; and 7) they live in a social infrastructure of markets, supplies and communications that is often weak and unreliable. Thus, it is not surprising that limited-resource farmers approach innovation cautiously. Yet, there are numerous data suggesting that farmers in traditional agriculture are fairly quick to adjust to using new production methods to enhance their own welfare. Farmers in Guatemala's Highlands are no exception.

This component is based on the premise that much is already known about the farmer, that there is a large reservoir of technical information available, and that a basic framework of institutions is in place to serve the agricultural community. It is also assumed that farmers in Guatemala do not demand a "perfect", risk-free packet of production technology; they accept a certain level of risk.

Therefore, this component aims at separating out the relevant from irrelevant research needs for Highlands farmers, consolidating from both public and private sources, and hastening the tedious validation processes of research and extension to the targeted farmer. This project component aims at assisting MAGA institutions (primarily ICTA, DIGESA and DIGESEPE) to develop a focus on understanding farmers' needs; improve the "hands-on", relevant, and dynamic quality of their work; and to develop a capacity for problem solving.

Innovations derived from adaptive research, validation and transference of technology are those which require: a) costless inputs; b) costs in cash; and/or c) costs in additional effort. Successful innovations must either fit the farmers' goals and economic circumstances or initiate changes to allow the innovations to work. On-farm-research with a farming-systems perspective must advocate relatively simple, even single unit, innovations which fit the circumstances. More complex changes usually must contemplate a series of adjustments through government and private interventions.

Historically, Guatemalan Highlands agriculture has been finely tuned and highly dependent upon seasonal rainfall patterns, with up to six-month dry periods. Region I and Region V are subject to periods of frost (from October until April) during the dry months. Total yearly rainfall ranges from 1000 to 2700 millimeters and high probabilities of frost occur at elevations over 1700 meters above sea level. Agriculture in region VI and VII has also developed under highly seasonal rainfall patterns, where droughts are not uncommon. However, during the long dry periods high temperatures may limit production of some crops and livestock. Within the context of these physical environmental constraints and assets, agriculture based on corn, beans, wheat, vegetables, fruits, sorghum, and sheep production have evolved into the highly tuned systems that are typical of subsistence agriculture. Traditionally, small farmers have sought off-farm employment to compensate for production limitations due to small landholdings, reflecting the fractionated land tenure situation, and the prolonged dry season. Cropping systems have evolved for centuries around corn, beans and wheat in Regions I and V, and around corn, beans and creole sorghums in Regions VI and VII. Thus, for the last 25 years, research and technical assistance have concentrated on these crops, seeking to generate and provide technical assistance through low-cost inputs, relevant to the reduced economic circumstances of small-farm producer.

In 1978, small-scale irrigation was introduced, resulting in a powerful instrument to expand small-farm production, ameliorate frost effects, and reduce heat stress. This innovation presented a possibility for increasing rural income through intensified on-farm labor use, and high value crops and livestock. This began modifying the economic potential of small-farm producers by introducing another dimension into the farm production system.

Within this context, a major concern arises regarding the sustainability of production of higher value crops and livestock, using subsistence agriculture as a starting point. Attention to technological concerns in soil productivity maintenance, ecologically sound pest and beneficial organism management, fertilizer use efficiency, and agro-forestry practices, all have to be adequately addressed through appropriate on-farm research and technology transfer processes.

This Project component will, in conjunction with the Land and Water Use component, address the above mentioned concerns through an interdisciplinary team approach to on-farm research and technology transfer. Efforts will be made to strengthen and institutionalize the capacity for promoting improved soil productivity maintenance practices, pest and

beneficial organism identification, sound pest management guidelines, and safe pesticide use practices. Greater farmer involvement will be promoted in the proper use of newly available resources to produce within the framework of ecologically sound agriculture.

### 3. Marketing

The constraints associated with the poorly developed marketing system have caused it to be a principal limitation to the success of production-oriented activities. Design of the marketing component is based upon the premise that by increasing the availability and awareness of market alternatives and opportunities, the participants in the marketing system will make rational economic choices. In addition, as their knowledge of market options increases, more competitive systems will emerge, with benefits accruing to the small and medium producer, as well as to the consumer.

Agricultural production and marketing for export and domestic consumption are interrelated and mutually dependent. They form part of an integrated marketing system. In Guatemala, the major outlet for farm output is the domestic market, where traditional grains and vegetables are the basic units of production and consumption. For some of these same commodities, major export markets have developed (e.g., El Salvador and Mexico), and represent important growth opportunities. While the products demanded in these regional export markets and the Guatemalan internal market are the same, international boundaries allow market differentiation. Thus, while the traditional small producer does not have to change his production program, he should be able to choose between two markets. In a competitive marketing system the producer should then be in a position to maximize benefits through rational market selection.

The situation with respect to specialty export crops (primarily to the U.S., Canada and Europe) does not lend itself to the same degree to interrelation between the export and internal markets. However, two directions can be pursued to bring them into closer contact.

Promotion responsibility and initiative rests primarily, and ultimately, with the private sector. Both producers and marketers have a direct interest in broadening the composition of the national diet. Within the near future organizations or associations representing these groups should consider long-term campaigns for effecting changes in consumption patterns.

A second path of action towards a closer synchronization between traditional and export activities requires the development of a market orientation and mentality among commercial producers. Basically, this implies accepting market considerations as the primary element in production planning. Once the farmer produces with the objective of satisfying market demands, he can more easily adapt to the special rigor that export markets require. This approach to farming will enable the producer to diminish risk and increase income stability and security, whether he elects to deal in domestic or export markets.

#### 4. Credit

The Trust Fund mechanism has been underutilized as a development instrument. While BANDESA, as the national agricultural development bank, must be responsive to social and political policies and pressures in which decisions are often based on other than economic criteria, the Trust Fund provides a means of separating specific internationally financed programs from general bank operations. It allows the creation of a bank within a bank, in which the modus operandi can reflect a more objective portfolio management.

##### a. Administration

In order to take full advantage of the Trust Funds, the latter must be isolated from the obstacles which are hindering efficient operation in other divisions of BANDESA. Within the specific context of the HAD Project Amendment, the Trust Fund must be given an agility and competency commensurate with that found in the private agricultural production and marketing sectors which it must serve.

Trust Fund administration within BANDESA must be coordinated with respect to objectives, procedures and resource use. Currently, many activities financed under the collective trust fund mechanism are redundant, compete for scarce managerial and operational resources, and are a source of volumes of work at clerical and mid-management levels. It is equally evident that Trust Fund efficiency is reduced by the inadequacy of BANDESA's logistic support and data management. Trust Fund activity is dependent upon the same equipment and personnel used to perform general bank functions.

##### b. Provisions

The effect of strengthening the Trust Fund element in BANDESA takes on added dimension and importance considering its potential as an aggressive instrument for

development, rather than merely a passive repository of credit funds. The wide latitude permitted in Trust Fund specification has enabled the bank to serve target groups which were ineligible under BANDESA's own-funds portfolio regulations. Now, a second round of innovations is needed in order to better serve this expanded client group, in a manner consistent with real economic and technical conditions.

The delimitation of the terms and provisions of the Trust Fund agreement should be considered as an integral part of project design; and, the agreement under this amendment must serve the Project's new activities and orientation. In addition, the Trust Fund agreement must be given a built-in flexibility which will allow it to be modified in response to exogenous changes and in accordance with dictates of experience. The first generation A.I.D. Projects upon which this amendment is built provide clear examples of areas in which Trust Fund use can be improved.

## B. Administrative Analysis

### 1. Overview

Evaluations of the Small Farmer Diversification Systems and HAD Phase I Projects indicate that many of the goals and impacts on the target population were not achieved within expected timeframes due primarily to inadequate administrative and management capabilities. Lessons drawn from the previous Projects highlight the type of institutional and administrative modifications needed before initiating Phase II.

Successful completion of this Project will require effective supervision by, and coordination of, seven Ministry of Agriculture, Livestock and Food agencies operating across an area comprised of at least four administrative regions in Guatemala's Highlands. These agencies will additionally be working with a multiplicity of private sector organizations and consultants. In view of the persistence of management and coordination problems afflicting multi-component projects, special emphasis has been placed in this Project on mechanisms to facilitate the tasks of the public sector institutions and to give them greater flexibility to adapt procedures and goals to local circumstances. These can be summarized briefly as including:

- Regional decentralization of Project decision-making via the use of existing Regional Agricultural Development Committees (COREDA's), each with its own Project technical sub-committee

- Project design and management training for directors, program leaders, technicians and administrative personnel; "training-for-trainers" courses for program leaders, technicians and field agents

- Extensive use of sub-contracting to private sector entities (local, U.S. and third country) to facilitate the Ministry's management of the Project in such areas as technical assistance recruitment and administration, commodities procurement, and special studies and surveys

- Specific training and commodity assistance to address the weaknesses of individual agencies

In general, the "institutional strategy" of the Project is to make maximum effective use of existing institutional capabilities, recognizing that there are unavoidable limitations to what the public sector can do, and employing private sector expertise, where appropriate, to complement public sector skills and resources. Through this process, an effective public/private sector alliance should result, enabling Guatemala to design its own sustainable development projects in the future.

## 2. The Agencies

Seven Ministry of Agriculture (MAGA) institutions or agencies will participate directly or indirectly in this project:

DIGESA (Dirección General de Servicios Agrícolas)  
DIGESEPE (Dirección General de Servicios Pecuarios)  
DIGEBOS (Dirección General de Bosques y Vida Silvestre)  
ICTA (Instituto de Ciencias y Tecnologías Agrícolas)  
BANDESA (Banco Nacional de Desarrollo Agrícola)  
INDECA (Instituto Nacional de Comercialización Agrícola)  
USPADA (Unidad Sectorial de Planificación Agrícola y Alimentación)

Three of these (DIGESA, DIGESEPE and DIGEBOS) are line agencies under the direct administration of the Minister of Agriculture. USPADA is a separate support unit for the Ministry providing planning, programming, and budgeting coordination services. ICTA, BANDESA and INDECA enjoy semi-autonomous status, the Minister of Agriculture serving as a member of their respective boards of directors. Specific functions and characteristics of each agency can be found in Annex J.

Except for USPADA, the Ministry agencies have regional and sub-regional (or "district") offices, each with its own director and staff. Regional offices are linked locally by Regional Agricultural Development Committees (COREDA's); in some regions there are sub-regional counterpart committees (COSUREDA's). COREDA's and COSUREDA's comprise the principle means of interagency coordination in the execution of multi-component projects. Legally, they are not "institutions" with legislative or administrative authority per se. However, under the Small Farmer Diversification Systems Project in Region I, the local COREDA acquired some of these functions de facto, and this was one of the factors contributing to the success of that Project.

Under this project, emphasis will be placed on the COSUREDAs as "tactical" coordinating bodies, since their members -- the Ministry sub-regional Agency Directors --, are the immediate superiors of public sector extensionists, livestock promoters, credit agents, and other field personnel. Coordination is especially important at this level, where sector strategies and projects are transformed into concrete activities involving farmers and their communities. Hence, these committees are included in this analysis.

### 3. Institutional Strengths

Viewed from the perspective of the past twenty years, there has been significant improvement in the Public Agriculture Sector's ability to manage development programs. The consolidation of over twenty sector agencies into eight during the 1970's and the establishment of the regional COREDA's were major steps forward, simultaneously improving the focus of policy implementation and, via decentralization, rendering implementation more flexible.

The present government is strongly committed to sustaining and improving the condition of the small farmer. It is well aware of the socioeconomic factors giving rise to the present duality characterizing the agriculture sector, and it has conceived realistic strategies to mitigate them over time. These strategies and their philosophical underpinnings are congruent with USAID's outlook in general, and with the objectives of this Project in particular.

More significant, however, is the fact that the kinds of problems and issues addressed by this project have become less "political" over time. Beginning in 1975, there has been a discernible trend of growing government support for programs aimed at strengthening institutional capabilities in concrete ways: a series of USAID projects with institutional

components -- Area Sample Frame Development, Small Farmer Development, Small Farm Marketing, Small Farmer Diversification Systems, among others -- all received solid support from contemporary governments. This suggests that quite apart from the temporary occupants of the political offices in the government, the more permanent occupants of the bureaucratic/administrative office are accepting the need for institutional change. This trend, if it continues, bodes well for sustainability, not only of specific Project achievements, but of effective internal mechanisms for conceptualizing, designing, and implementing future Projects.

The quality of DIGESA, DIGESEPE, and ICTA professionals and technicians is generally good. Many of them, even in more remote locations, are young and highly motivated. Although their numbers are still far from adequate and many receive scant logistical support, most are hard workers and eager to learn. The Ministry's outreach has definitely improved in the past twenty years.

Several agencies--BANDESA, INDECA and INAFOR (recently replaced by DIGEBOS)--have become seriously overextended in recent years, their statutory responsibilities outstripping the resources at their disposal. Nevertheless, the government has recognized this and has inaugurated strategies to upgrade the quality of internal training, improve the flow of information and resources, limit the scope of individual agency responsibilities, and decentralize decision-making. The institutional mechanisms prescribed in this paper are consonant with these efforts.

#### 4. Institutional Weakness

Although the magnitude and quality of MAGA's outreach to small farmers has improved greatly in recent years, the number of farmers needing help has grown even faster. DIGESA's guía agrícola program and its growing reliance on representantes agropecuarios has eased the situation; both guías and representantes are "paraextensionists" who live in small-farm communities and provide neighboring farmers with basic assistance at a low cost to the government. Nevertheless there remain tens of thousands of farmers, especially in the more remote mountain areas, who have never received technical assistance of any kind, even for traditional basic grains production and marketing. DIGESEPE and BANDESA, both significantly smaller than DIGESA, have a correspondingly more restricted outreach. Thus, many small farmers are deprived, not only of basic crop production assistance, but of credit and livestock services as well.

DIGESA and BANDESA, both large and highly articulated agencies, are hard pressed to keep track of their many regional and field activities. They lack standardized, focused internal information systems which would permit their directors to relate the quality of their employees' performance to the cost of their operations.

Performance standards and objectives tend to be excessively quantitative: numbers of field visits, numbers and amounts of loans made, numbers of farm households and total farm areas covered. Low rates of acceptance and diffusion of new technologies and high rates of small farm loan default are common as a result.

ICTA and DIGESEPE generally possess highly trained scientific field staff. They are arguably the most capable professional agencies MAGA has. Nevertheless, this fact has contributed to a sense of elitism which has distanced them from the other agencies, and they have tended to pursue their own independent agendas. Flexibility and interagency coordination have suffered, especially in the key area of technology validation/transfer (see section II.C.2 and Annex M).

Channels of authority within agencies can be confusing. DIGESA, for example, divides its activities into distinct "program areas": vegetables, fruits, soil conservation, irrigation, home economics ("Educadoras del Hogar") and training. Each of these is headed by a program director. At the regional level, these directors may deal directly with local farmers and extensionists, thereby bypassing the latter's subregional administrative directors. This has contributed to a "marginalization" of subregional offices and a widespread sense of irrelevancy regarding the COSUREDA's, phenomena especially noteworthy under the Small Farmer Diversification Systems Project in Region I.

All MAGA agencies jointly lack a unified information/data system designed to give decision makers a detailed picture of events in the field. Thus in any given period it is difficult to make balanced judgments about how global accomplishments relate to global objectives in order to effect timely adjustments to logistics and execution. USPADA and the Statistics Directorate of the Ministry of Economics periodically provide statistical information about the sector, but much of this is not user-oriented; that is, it is not identified and collected with an eye to constructing analytic indicators linking on-going sector activities with specific project/program goals and targets. In part, this reflects inability on the part of USPADA planners and agency programmers

to conceptualize sector strategies holistically and to apply such a vision to concrete tactics in the field.

The consequences are tardy and unfocused evaluation of joint agency accomplishments and excessive emphasis upon short-term programming and budgeting by all agencies.

All agencies are likewise afflicted by shortages of office facilities, training materials and equipment, vehicles and gasoline, and other logistical support. INDECA and INAFOR have suffered the most in these areas in recent years, but DIGESA, with its numerous employees, broad area coverage, and heavy responsibilities, has difficulty in responsibly managing the resources it does command; inadequate per diem and the fungibility of such items as gasoline, vehicles, and technical equipment provide irresistible temptations toward laxness in accountability at local levels. Even ICTA and DIGESEPE suffer shortages in key equipment and laboratory facilities which diminish the effectiveness of extension, research and validation activities.

##### 5. Coordination Problems

As mentioned previously, Guatemala's eight COREDA's were not intended to exercise "legislative" authority over their component member agencies, and, with the exception of Region I's COREDA, they have not done so. In Region I, the combination of strong leadership on the part of the DIGESA director during his tenure as committee president and years of joint collaboration under the Small Farmer Diversification Systems Project led to an unprecedented degree of individual agency compliance with COREDA decisions. This, combined with the tacit approval of MAGA authorities, afforded COREDA the autonomy and flexibility needed to make timely, binding Project-wide decisions affecting a host of issues and problems.

However, the other COREDA's destined to participate in this Project have not undergone the arduous evolution experienced by the Region I committee. The Region VI COREDA (Jutiapa) has gone the farthest in recent years to achieve effective coordinating methods with the help of IICA; but the levels and sophistication of coordinated programs in that area have not matched those required by the Small Farmer Diversification Systems Project. The Region V COREDA has traditionally been overwhelmed by the nearby presence of COSUCO and the National agency offices in Guatemala City. The Region VII COREDA (Zacapa) has suffered from both scarce resources and lack of systematic support for interagency cooperation.

There is a tendency in some regions for Agency Regional Offices to bypass their sub-regional counterparts and work directly with extensionists and farmers. This has happened where regional program technicians (DIGESA and DIGESEPE, for example) directly involve field personnel in presentations and field days. The result is "marginalization" of the sub-regional offices and their COSUREDAs at the expense of local coordination.

Thus, the practical application of sector policy continues to be largely "balkanized", especially at lower institutional levels. Even in Region I much remains to be done to transform the COSUREDA's into true arbiters of tactical field coordination and to weld field agents into effective interdisciplinary teams.

6. Summary: Implications for Project Strategies

This analysis, in the face of the institutional complexity characterizing Guatemala's public agricultural sector, has necessarily been superficial (additional detail can be found in Annex J). Nevertheless, it has underscored broad areas in which the mechanisms defined in this Project Paper will contribute to stronger, more effective implementation of Ministry of Agriculture policy:

Strengthening Regional COREDA's by assigning to them oversight authority over all project related activities in their respective regions via project technical sub-committees consisting of representatives of participating MAGA agencies. Each COREDA will have latitude to shape the application of project components to its local circumstances within general guidelines established by the National Agricultural Coordinating Committee (COSUCO).

Strengthening individual MAGA institutions via training in management and administration for key decision makers, professionals, and technicians; upgrading of the agency's own training capabilities; facilitating acquisition of technical and training materials and equipment.

Reliance upon private sector entities and individuals to facilitate GOG's management of the project by providing specialized complementary services in the areas of material procurement and the recruitment and administration of technical assistance, under the supervision of MAGA and COSUCO.

Creation of a Project Technical Committee under COSUCO responsible for overall interregional Project oversight and coordination, in collaboration with USAID, regional COREDA's, and private contractors.

Specialized Training and Material Support tailored to the needs of individual participating MAGA agencies, as specified elsewhere in this Project Paper Amendment.

Innovative means of Extending MAGA's outreach to farmers such as provision of contractual specialized technical extension assistance from private sources, strengthening sub-regional COSUREDA's, and fostering formation of local interdisciplinary "field teams", consisting of already in-place extension personnel, to provide more balanced assistance packages.

### C. Social Analysis

This Project is noteworthy for the diversity of its technical components and of the sociocultural characteristics of the intended beneficiaries. Geographically, virtually all of Guatemala's Highland region will be included, from the Mexican to the Honduras/El Salvador borders. Within this vast area, the majority of the population are farmers, cultivating an average of less than 7 hectares of corn, beans, squash and other traditional crops. Culturally, Guatemalan farmers, like their counterparts in Bolivia, Ecuador, and Peru, comprise a heterogeneous mix of ethnic groups ranging from "Indians", the direct inheritors of ancient pre-colonial native traditions to poor non-indian "ladino" descendants of the country's Spanish conquistadores. Climatically, the area ranges from the cool western mountains through the temperate central regions, to the warm, semi-arid eastern hills.

These differences strongly condition the farmers' ways of thinking about risk, and their receptivity to change. Since agricultural diversification and soil/water resource management involve both of these factors, it is especially important that strategies for this Project be sufficiently flexible to permit adaptation of technical assistance to local circumstances.

#### 1. The Target Population

The principal beneficiaries of the project will be small subsistence farms cultivating less than 7 hectares. Such farms typically comprise six to seven family members cultivating corn, beans, and a few vegetable crops, primarily for home consumption. Most farms have a few chickens, pigs, and an occasional milk cow tended by women and children.

Three broad categories of small farmers can be identified: Traditional Indian, Transitional Indian, and Ladino. Traditional Indians predominate in the West, Ladinos in

the East. Transitional Indians concentrate about the larger towns and in the central Highlands. No sharp lines divide these groups, however, since "Indian" and "Ladino" are terms referring to varying combinations of characteristics including life styles, language, modes of dress, attitudes and motivations.

Traditional Indian Farmers: Do not share "modern" attitudes about "progress", economic and material values, or notions of "progress" over time. They speak a variety of languages deriving from the original Maya, using Spanish mainly as a "lingua franca" in communicating with other Indian groups and with the Ladino-dominated world outside of their community. Loyalties to cultural tradition and to the local community are strong. Distrust of outsiders is common and runs deeply. Nevertheless, traditional Indians have demonstrated a willingness to change under pressures of poverty and growing local population.

Transitional Indians: While retaining elements of their traditional culture, this group seeks to interact more fully with the market system and is more open to innovation for specific purposes under specific conditions. They have acquired tastes for some of the goods and amenities found in the towns and cities and have had more experience with credit and formal modes of organization. Many are aware of less traditional ways of farming and are more open to risk taking.

Ladino Farmers: Share the cultural values of the governing Hispanic groups in the larger urban areas. They are better educated more literate and better informed than their Indian counterparts.

In spite of these differences, the Project is expected to provide benefits to most small farmers among these groups provided that careful attention is given to providing information appropriate to their needs and in a form they can understand.

## 2. Expected Benefits

Immediate benefits will include increased employment and net incomes, expanded savings opportunities and a broader range of choices in production and consumption. Improved health and nutritional status will enhance both the quantity and quality of family labor, with more opportunities for schooling and leisure time. Fuller productive on-farm employment will reduce the need for off-farm wage labor and seasonal migration. In the longer term, gains in small farm income and saving will increase effective demand for non-agricultural goods and services and generate a growing pool

of rural capital available for financing both rural and urban investment.

### 3. Role of Women

Evidence from recent diversification projects in Guatemala suggests dramatic changes in the nature of, and financial returns, as a result of women's roles on small farms. Traditionally, farm wives, indian and ladino alike, perform most of the marketing activities, oversee the farm animals and fowl, prepare and distribute the family meals, and coordinate most household activities, including management of the family garden.

With diversification into a greater variety of fruits, vegetable and animals, these tasks can be expected to intensify. Sorting, washing and trimming --essential first steps in fruit and vegetable processing-- almost certainly will be done by women. Marketing activities will likewise become more diverse and of necessity, more sophisticated. As labor requirements rise, more women may be found working in the fields at certain times of the year, especially engaged in tasks requiring more agility than brute strength. Improvements in animal sanitation, breeding, nutrition and selection will result in increased income from women's care of the household livestock.

As the income related to her activities rises, she will be freer to make decisions about food purchases and distribution within the household. Studies undertaken in Guatemala show that the state of the household's nutrition correlates more strongly with the income earned by women than family income generally.

This project will address, directly and indirectly, the issues of women's roles in diversified farms. First, the project baseline survey and final impact evaluation will collect gender disaggregated information relating to household division of labor and decision making, levels and kinds of female controlled income and expenditure, and public sector program training activities oriented towards women. Second, in those areas covered by the projects, support for, and coordination with DIGESA's "Educatadora del Hogar" program will be encouraged. Third, training and extension plans involving agricultural production activities (e.g., fruits, vegetables, livestock) will be designed to incorporate and support work traditionally done by women and children, especially in the areas of animal husbandry and on-farm crop processing. Fourth, under the project marketing component, efforts will be made to insure that improved market information reaches farm wives.

A greater availability of vitamin-rich fruits and vegetables and protein-rich milk and eggs should improve the traditionally lamentable status of young children and lactating mothers, especially if diversified production is accompanied by education leading to increased on-farm consumption to improve food storage and preparation.

Finally, the increased incomes and opportunities for leisure brought about by diversification should enable women to acquire literacy and fluency in the Spanish language and to obtain more schooling generally. These, in turn, should contribute to a larger women's participation in management of the farm as a whole and to greater possibilities for non-farm activities. Improvement in women's status in traditionally male-dominated Indian and Ladino societies should follow in the longer term.

#### 4. Spread Effects

Small farmers in Guatemala--Indian and Ladino alike commonly share information about farming practices and have a strong awareness of what their immediate neighbors are doing. They are accustomed to working in groups, formally or informally as circumstances may require, and every community has at least a few individuals willing to innovate. There must, however, be a more proactive approach to the interchange of information between farmers in different regions, to prevent the constant reinventing of the wheel.

To promote this spread effect, the Ministry of Agriculture has developed the Intra-Regional Technology Transfer Program. Under this activity, the Ministry transports farmers and extension workers outside of their regions to observe, and learn from, successful projects elsewhere in Guatemala. This program has proven successful and will be supported by this project.

#### D. Economic Analysis

The activities to be carried out under Phase II of the Project are expected to produce significant economic benefits resulting from increased crop production and higher farmer incomes. Please see Annex I for the detailed economic analysis.

The principal economic benefits under Phase II of the Project will result directly from the installation of small-scale irrigation systems, which permits: 1) multiple cropping in most areas, 2) increased production of vegetables, and 3) the introduction of non-traditional, higher-value crops.

The increase in farm income that will result from irrigation ranges between 160% and 540%, depending on the Project area.

The market orientation of the Project Amendment will also complement production gains and create further economic benefits by exposing the producer to new market alternatives and marketing techniques. The resulting higher quality produce and lower post-harvest losses will create additional farm level earnings that were not factored into the economic analysis.

Additional indicators which were calculated in Annex I to measure the economic viability of Phase II were favorable. At the end of fifteen years, the overall project will have an internal rate of return of 13.3% and a benefit/cost ratio of 1.02. Analysis over a longer period results in even more favorable figures due to the high initial investment in institutional development proposed under Phase II of this Project.

#### E. Environmental Analysis

The Initial Environmental Examination for the Phase II Amendment determined that Project activities may cause a negative environmental impact. According to Sector 118 of the Foreign Assistance Act, an Environmental Analysis (EA) is therefore required for this Project Amendment. At present, a team to elaborate the EA is being contracted in AID/Washington. This team will be responsible for analyzing all environmentally related Project interventions, designing Project activities to mitigate adverse environmental effects, and identifying methods to promote environmental protection where possible.

Funds under this Project Amendment will not be utilized for environmentally related activities until the EA is approved in AID/Washington and the Condition Precedent fulfilled regarding actions to be taken to mitigate any negative impacts on the environment. Environmentally related activities include irrigation, soil conservation, reforestation, watershed management and production credit.

V. FINANCIAL ANALYSIS AND PLAN

A. Project Budget and Disbursement Plan

The proposed total cost of PHASE II is \$29.8 million. AID's contribution will comprise 50.4% of the total project budget and will consist of \$15.0 million in grant funds. The remaining 49.6% of the budget or \$14.8 million will be contributed by the Government of Guatemala (GOG). Table I contains the project summary by component, including the GOG counterpart funding, separating out the foreign exchange/local currency mix. Table II provides the projection of the summary expenditures by fiscal year, whilst Table III separates out the methods of implementation and payment for each expense sub-component. The detailed budgets by component, line item and recipient agency are contained in Table IV, which includes the detailed budget calculations and the assumptions on which they are based. The contingency factor is 4.5% and inflation was calculated at 10% compounded starting year 2.

TABLE I  
BUDGET SUMMARY AND FINANCIAL PLAN (\$000's)

COMPONENTS	USAID		TOTAL USAID	GOG FUNDS	
	LC	USAID		LC	TOTAL
1. Land/Water Use	694	171	865	2,896	3,761
2. Research/Ext.	812	688	1,500	3,076	4,576
3. Marketing	602	200	802	1,905	2,707
4. Credit	1,131	3,291	4,422	6,905	11,327
5. Support Services	1,557	3,669	5,226	-	5,226
6. Evals/Audits	250	60	310	-	310
7. Contingencies	227	368	595	-	595
8. Inflation	492	788	1,280	-	1,280
<b>TOTAL</b>	<b>5,765</b>	<b>9,235</b>	<b>15,000</b>	<b>14,782</b>	<b>29,782</b>
	*****	*****	*****	*****	*****

TABLE II  
SUMMARY EXPENDITURES BY FY (\$000's)

<u>FISCAL YEAR</u>	<u>AID</u>	<u>GOG</u>	<u>TOTAL</u>
1989	3,639	2,366	6,005
1990	2,549	2,371	4,920
1991	2,939	3,342	6,281
1992	2,153	3,348	5,501
1993	1,845	3,355	5,200
INFLATION	1,280	-	1,280
CONTINGENCY	<u>595</u>	<u>-</u>	<u>595</u>
TOTAL	15,000 *****	14,782 *****	29,782 *****

TABLE III  
METHODS OF IMPLEMENTATION AND FINANCING (US\$)

<u>METHOD OF IMPLEMENTATION</u>	<u>METHOD OF PAYMENT</u>	<u>AMOUNT</u>
I. TECHNICAL ASSISTANCE		
PRIME CONTRACTOR	Direct Payment	4,896,400
USDA - PASA	Direct Payment	2,103,000
POLICY ADVISOR (PSC)	Direct Payment	330,000
II. COMMODITY PROCUREMENT		
PRIME CONTRACTOR	Direct Payment	1,579,500
CONSTRUCTION (GOG)	Reimbursement	260,000
III. TRAINING		
PRIME CONTRACTOR	Direct Payment	786,000
IV. CREDIT FUNDS		
BANDESA	Direct Payment	2,860,000
V. EVALUATIONS AND AUDITS	Direct Payment	310,000
VI. CONTINGENCIES AND INFLATION		<u>1,875,100</u>
TOTAL		15,000,000 *****

B. INSTITUTIONAL ANALYSIS

(1) BANDESA

BANDESA is the government's financial institution for channeling public sector credit to the agricultural sector. Small and medium-scale farmer lending is financed with external capital obtained from international donor agencies (eg. AID, BID etc.). These donor institutions have financed the creation of trust accounts (fideicomisos) in support to specific project initiatives.

The trust fund accounting system maintained by BANDESA produces, on a monthly basis, a complete set of financial statements for each separate trust fund, including of course the interest generated by the trust fund. The trust fund is established by means of a publicly registered legal document, signed by the Ministers of Finance and Agriculture and the General Manager of BANDESA, which contains all the provisions relating to the management of the trust fund, the investment of its unused funds and the utilization of the interest generated by the trust fund. There is a separate section in the DFEF (External Finance Directorate), in the Finance Ministry, which is dedicated to the control of all the trust accounts in BANDESA, be they of AID or BID or any of the other international agencies.

Given BANDESA's mandate to meet the credit needs of AID's traditional clientele, USAID/Guatemala has channeled more than \$42M in loan funds through the bank since 1970 for onlending to small and medium-sized farmers. AID success in utilizing BANDESA to support project initiatives has been mixed. The inefficiencies in its operating procedures, the continued operating losses and resultant decapitalization, and the increasing delinquency in its portfolio have forced the Mission to reevaluate its continued use of the bank. As part of Project 520-0276 "Agribusiness development" a study was contracted in March 1988 with Development Associates Inc. to analyse the credit operations, management of trust funds, and internal administrative structure and procedures of BANDESA, and provide a series of recommendations which will improve small farmer lending. The report acknowledges that BANDESA appears to be improving slowly overall and that it probably could operate on a break-even basis if it were decentralized accompanied by a major movement of people from unproductive jobs in the central office to productive jobs in the field. The addition of 20 or more loan collectors in the field would help in cleaning up the balance sheet. However, a major cash injection to both the bank and the trust accounts to permit writing off uncollectable loans and the interest due thereon will be needed before the bank will

have the appearance of a sound financial institution. The report is under joint study by both USAID and the GOG to determine the measures to be taken to put into effect the recommendations of the consultants.

The Agribusiness Development Project (520-0276) is providing 2 years of technical assistance to BANDESA to improve its credit approval, administration and collection procedures, whilst the Cooperative Strengthening Project (520-0286) includes administrative and financial systems improvements and the debt restructuring of BANDESA's clients. The HADS Phase II Amendment will fortify BANDESA through 3 types of intervention:

i. technical assistance for improving operations and inter-agency collaboration;

ii. equipment and logistical support ranging from field vehicles and office equipment to data processing systems; and

iii. training in loan analysis, credit administration and data management.

The Mission is aware that a long-term effort will be required before BANDESA can achieve financial solvency while at the same time carrying out its development task in rural areas. Despite its shortcomings, USAID views BANDESA as the only real alternative financial intermediary to provide funds to small farmers under the project. Our experience has been that the internal controls established for the trust funds are adequate and there have not been any problems experienced in receiving the required financial reports. There is no need for a further review of BANDESA's systems and controls at this moment.

## (2) DIGESA

The small-scale irrigation and soil conservation sub-components are currently being implemented through MAGA's General Directorate of Agricultural Services (DIGESA) regional offices.

Potential small-scale irrigation sites will be identified by interested farmers, farmer associations or by DIGESA extensionists. Once identified DIGESA will make a preliminary screening visit to the site and prepare a brief report documenting any major technical, social or legal limitations encountered.

Thereafter the actual feasibility study and design of the system will be performed by either DIGESA or a

pre-qualified private contractor. The extension capacity of the public sector is limited by the quantity and quality of its resources. By tapping the private sector, private technical assistance will provide an alternative to the public sector extension service and thus will increase the overall availability of farm-level technical assistance.

The private contractors will be selected via an open competitive bidding process applying selection criteria jointly agreed to by USAID and DIGESA. The funding for the pre-qualified contractors is included within the non-reimbursable funds in the credit component (Irrigation studies and design \$360,000). The regional offices of DIGESA are funded out of HADS Phase I. The criteria has still not been established to determine which projects will be looked after by DIGESA and those to be put out for bidding by the private sector contractors. It is likely that the more extensive/sophisticated systems with a higher investment/risk factor will be those for which the feasibility study, design and later supervision of the construction will be carried out by the pre-qualified private contractors.

Upon receipt of a favorable feasibility study, the Regional Agricultural Development Committee (COREDA) will prioritize the proposed project and submit a recommendation to BANDESA to finance the irrigation system, using the "Irrigation system construction and maintenance credit fund" of \$2,818,000.

The system beneficiaries purchase the necessary materials, using the BANDESA credit, and to the extent possible undertake the construction, under the supervision and control of DIGESA or the private contractor. The latter will organize the labor, oversee the materials procurement and provide the needed technical assistance and practical training both in the construction and the later system operation and maintenance. Final acceptance of the completed system will be made by the borrowers and BANDESA, with technical input from DIGESA and/or a pre-qualified technical firm. The maintenance of the systems will be undertaken by the benefitting communities.

DIGESA will not be handling funds under this project and thus there is no need for an updated review of its systems and controls.

### (3) PRIME CONTRACTOR

The contractor will serve as the principal mechanism on behalf of USAID so that resources and services can be made available in a more expeditious manner, and USAID

project management can be relieved of the routine and clerical aspects of these activities.

The main activities will include commodity procurement, training, technical assistance contracting and backstopping, and project implementation and impact monitoring. The contractor will establish a point of accountability and a precise structure for support services, and will respond to the demands of the GOG and USAID as outlined in the terms of reference and implementation schedules.

The technical assistance and personnel services provided under the umbrella of the prime contractor contain a multiplier of 2.5 for overhead expenses. In order to maximize economies an extensive use is being planned for long and short-term technical assistance to be provided by the USDA under the PASA mechanism which will not be affected by the multiplier.

	<u>USDA</u>	<u>CONTRACTOR</u>
Long-term T.A.	150,000/yr	200-250,000/yr
Short-term T.A.	12,000/m	16,000/m

### C. SUSTAINABILITY AND RECURRENT COST ANALYSIS

The Land and Water use component should encounter no problem with recurrent costs. Maintenance of the irrigation systems will be undertaken by benefitting communities on a voluntary basis. Committees will be formed to undertake periodic cleaning of the canals, holding tanks and associated systems components. Repair or replacement of components will be financed by the community through contribution or water-usage charges.

The recurrent costs associated with pump systems are higher due to the cost of fuel/electricity or diesel for the pumps as well as routine maintenance and repair. However, past experience with pump driven systems indicates that the farmers generate sufficient profits to more than cover the recurrent costs of keeping the systems operational.

Terracing activities will require labor input for maintenance, but it is expected that individual farmers will maintain their terraces once they are built. Social cost payments will be used to introduce soil conservation practices only in areas where they are not presently being utilized. It has been demonstrated in previous USAID projects that once farmers observe and are convinced of the benefits of soil conservation practices, they will construct soil conservation structures without social benefit payments.

For project purposes and the long-run sustainability of commercial agricultural activities adequate technical assistance, both long and short-term, will be drawn upon from a wide variety of sources. The validation and transfer of agricultural technology to the extension agency personnel (training-for-trainers) and through them to the interested farmers will be sustained by the establishment of regional technical information banks. The extension capacity of the public sector is limited by the quality and quantity of its resources. Private sector technical assistance will provide an alternative to the public sector extension service and increase the overall availability of farm-level assistance.

During the trial period this private sector assistance will be financed on a non-reimbursable basis from a special account in BANDESA. Following this trial period, continued use of private sector technicians will be credit-financed. As with conservation, when private technical assistance demonstrates its worth, the farmer will assume the risk of purchasing it.

In general, the "institutional strategy" of the project is to make maximum effective use of existing institutional capabilities, recognizing that there are unavoidable limitations to what the public sector can do, and employing private sector expertise, where appropriate, to complement public sector skills and resources. Through this process, an effective public/private sector alliance should result, enabling Guatemala to design its own sustainable development projects in the future. The contracting of an agricultural policy advisor is primarily to integrate the DA/PL 480/ESF agricultural policy effort and thereby create an environment that includes stable and predictable macro-economic and financial policies and the development of an institutional and infrastructural base required to support a robust, internationally competitive export agriculture.

One of the covenants to the Phase II amendment states that the GOG shall provide evidence satisfactory to AID that it will provide funds for the necessary repair and spare parts for all vehicles financed under this project.

#### D. FINANCIAL FEASIBILITY OF IRRIGATION SYSTEMS/LOANS

Approximately \$2,818,000 of the project resources, including GOG counterpart, will be used for credit to groups of farmers for irrigation projects. \$1,875,000, or 67%, will be used for gravity feed systems, and \$943,000, or 33%, for pump operated pressure systems.

A number of similar systems have been installed under the HADS I project. These existing systems, therefore, provide the best basis for determination of the financial feasibility of continuing this type of intervention, on the assumption that reliable data can be obtained to evaluate past performance.

A study was conducted by Utah State University in August 1987 entitled "Experience with Small-Scale Sprinkler System Development in Guatemala: An Evaluation of Program Benefits". This study was carried out as part of the Water Management Synthesis II Project, an S&T central project.

The above study surveyed 26 irrigation projects and calculated incremental income, Internal Rates of Returns, and also reviewed the history of loan repayments. The results of the study are very positive as to the profitability of this type of intervention in increasing farmer incomes, and the viability of loan repayments. Internal Rates of Return ranged from 7.5% to 46%. Therefore this study forms the basis for a determination that the planned project activities in irrigation systems are financially viable.

The study does point out various factors which had varying effects on individual project viability. These items are discussed briefly below. The project envisions an economic viability review as part of the design feasibility study for each individual irrigation project. These factors should be included or considered in determining the potential economic/financial feasibility of the project, and should also be considered in any future evaluations.

Crop Mix - The study pointed out that improvement in incomes was more significant when higher priced cash crops were introduced. With the increased cost of the pump systems, the need to introduce these types of crops becomes more important to ensure a higher level of profitability. The study does conclude that in cases where production of traditional low value crops was continued, the system would still likely be able to provide an increase in farmer's incomes, and pay for the system. It would seem, however, that higher value crops would provide for an increased margin of profitability to ensure the long term viability when considering such varying factors as inflation, devaluation and shifting internal and external markets.

These conclusions as to the importance of the appropriate crop production to maintain or improve financial viability lend further support to the need for sound marketing information and improved extension services to allow the farmer to make appropriate decisions.

Interest Rates - The study was based upon projects receiving loans made at a concessionary rate of two percent. The rates of 10% currently envisioned will decrease the IRR. Even with a higher interest rate profitability is not expected to be a problem. Additionally, loan repayments may increase, thus providing more rapid rollover of funds and thus increasing the replicability potential.

Capital Costs - The study found significant variance in construction costs. Some gravity feed systems actually had a higher per hectare cost than some pump systems. There appeared to be no direct correlation between the financial viability of a system and its initial cost. Although the study did conclude that in general the higher cost systems had to turn to the higher value crops to assure viability. Careful monitoring of increased initial costs of materials will be necessary to provide an accurate assessment of preliminary financial viability.

Loan Repayments - At the time of the study, loan repayments had a varied history. Some projects had been paid off in full well in advance of the loan period. At the same time significant numbers of borrowers were in arrears on their payments. The study concludes that such arrearages were not an indication of the recipients inability to repay, nor did it reflect adversely on the overall viability of the projects. Rather, the study concluded that the significant devaluation of the Quetzal, the uncertainty as to future devaluations, low concessionary interest rates, and the lack of aggressive follow-up by BANDESA all contributed to the arrearages. In fact, the study implies that there was no good reason for the borrower to repay the loan. It states, "Being in arrears is not a bad strategy if there are no penalties, and more and more devalued currency can be used eventually to catch the payments up."

In conclusion it appears that assessments of existing systems is the best confirmation of the potential viability and benefits of the proposed irrigation systems. However, the changing conditions of interest rates, markets, capital costs, crop values, and currency valuation, argue for a careful economic/financial review as part of each feasibility study.

- TABLE IV -

HIGHLANDS AGRICULTURAL DEVELOPMENT PROJECT (HADP - AID 520-0274)  
SUMMARY BY COMPONENTS AND SOURCE OF CONTRIBUTION (PHASE II)

COMPONENT	USAID FUNDS	GOG FUNDS	TOTAL
LAND AND WATER USE	\$864,500	\$2,896,503	\$3,761,00
RESEARCH AND EXTENSION	\$1,500,000	\$3,075,710	\$4,575,71
MARKETING	\$802,000	\$1,904,745	\$2,706,74
CREDIT SERVICES	\$4,422,000	\$6,904,745	\$11,326,74
SUPPORT SERVICES	\$5,226,400	\$0	\$5,226,40
EVALUATIONS AND AUDITS	\$310,000	\$0	\$310,00
CONTINGENCIES	\$595,100	\$0	\$595,10
Sub-total:	\$13,720,000	\$14,731,703	\$28,451,70
INFLATION	\$1,250,000	\$0	\$1,250,00
PHASE II TOTAL (GRANT)	\$15,000,000	\$14,731,703	\$29,731,70

HIGHLANDS AGRICULTURAL DEVELOPMENT PROJECT (AID 520-0274) - PHASE II  
 DETAILED BUDGET BY LINE ITEM AND RECIPIENT AGENCY

COMPONENT: LAND AND WATER USE			
LINE ITEM		COST (US\$)	Recipient Institution
TOTAL FOR COMPONENT:		\$864,500	
1.	Technical Assistance	\$450,000	
1.1	Long Term	\$450,000	
	Watershed Management Spec. (U.S. 36 mos x \$150,000/yr)	\$450,000	DIGESA
2.	Training	\$312,000	
2.1	Long Term	\$80,000	
	Agroforestry (2 part's, 3rd, \$20,000/yr)	\$80,000	DIGESA
2.2	Short Term	\$196,000	
	Small Scale Irrigation (12part, 3rd, 1mo. ea., \$4,000/m)	\$48,000	DIGESA
	Watershed Mgt/Conservation (12part, 3rd, 1mo. ea., \$4,000/m)	\$48,000	DIGESA
2.3	In-Country	\$136,000	
	Courses, Workshops, Seminars, etc	\$136,000	DIGESA
3.	Commodities	\$102,500	
3.1	Vehicles	\$52,500	
	Motorcycles (15 U., \$3,500ea.)	\$52,500	DIGESA
3.2	Equipment	\$50,000	
	Office and Lab. Equipment	\$25,000	DIGESA
	Training and Field Eq.	\$25,000	DIGESA

HIGHLANDS AGRICULTURAL DEVELOPMENT PROJECT (AID 520-0274) - PHASE II  
 DETAILED BUDGET BY LINE ITEM AND RECIPIENT AGENCY

COMPONENT: RESEARCH AND EXTENSION			
LINE ITEM	COST (US\$)		Recipient Institution
TOTAL FOR COMPONENT:		91,500,000	
1. Technical Assistance		8609,000	
1.1 Long Term		9225,000	
Fruit Specialist (U.S., 18 mos x \$150,000/yr)	9225,000		ICTA
1.2 Short Term		9384,000	
Seed/Nursery Mngt (U.S. 4 mos x \$12,000/a)	948,000		ICTA
Extension Training/Materials (U.S. 8 mos x \$12,000/a)	996,000		DIGESA
Pest Management (U.S. 14 mos x \$12,000/a)	9168,000		DIGESA/ICTA
Livestock (Small Animals) (U.S. 6 mos x \$12,000/a)	972,000		DIGESEPE
2. Training		9114,000	
2.1 Short Term		964,000	
Plant/Soil Analysis (2 part, U.S. 1mo. ea., \$4,000/a)	98,000		DIGESA/ICTA 50/50
Pest Diagnosis (4 part, 3rd, 1mo. ea., \$4,000/a)	916,000		DIGESA/ICTA 50/50
Tropical Fruits (2 part, 3rd, 1mo. ea., \$4,000/a)	98,000		DIGESA/ICTA 50/50
Seed Technology (4 part, U.S. 1mo. ea., \$4,000/a)	916,000		DIGESA/ICTA 50/50
Animal Nutrition (2 part, U.S. 1mo. ea., \$4,000/a)	98,000		DIGESEPE
Vegetable Crops (2 part, 3rd, 1mo. ea., \$4,000/a)	98,000		DIGESA/ICTA 50/50
2.2 In-Country		950,000	
Courses, Workshops, Seminars, etc	950,000		ICTA

HIGHLANDS AGRICULTURAL DEVELOPMENT PROJECT (AID 520-0274) - PHASE II  
 DETAILED BUDGET BY LINE ITEM AND RECIPIENT AGENCY

COMPONENT: RESEARCH AND EXTENSION

LINE ITEM	COST (US\$)	Recipient Institution
3. Commodities	\$517,000	
3.1 Vehicles	\$42,000	
Motorcycles (12 U., \$3,500ea.)	\$42,000	DIGESA
3.2 Data Processing	\$150,000	
DIGESEPE	\$50,000	DIGESEPE
ICTA	\$100,000	ICTA
3.3 Equipment	\$325,000	
3.3.1 Lab. Equipment and Supplies	\$250,000	
DIGESA	\$50,000	DIGESA
ICTA	\$200,000	ICTA
3.3.2 Training and Field Supplies	\$75,000	
ICTA	\$50,000	ICTA
DIGESEPE	\$25,000	DIGESEPE
4. Construction/Rehabilitation	\$260,000	
4.1 La Esperanza Training Center	\$60,000	DIGESA
4.2 LAVOR Ovalle Soil Fert. Lab.	\$70,000	ICTA
4.3 El Oasis Pest Diagn. Lab.	\$60,000	ICTA
4.4 Export Inspection Facilities	\$70,000	DIGESA/San. Veg.

HIGHLANDS AGRICULTURAL DEVELOPMENT PROJECT (AID 520-0274) - PHASE II  
 DETAILED BUDGET BY LINE ITEM AND RECIPIENT AGENCY

COMPONENT: MARKETING			
LINE ITEM	COST (US\$)		Recipient Institution
TOTAL FOR COMPONENT:		\$802,000	
1. Technical Assistance		\$492,000	
1.1 Long Term		\$300,000	
Marketing Advisor (U.S. 24 mos x \$150,000/yr)	\$300,000		INDECA
1.2 Short Term		\$192,000	
Grades and Standards (U.S. 5 mos x \$12,000/m)	\$60,000		INDECA
Information System:			
a) Gathering Analysis (U.S. 4 mos x \$12,000/m)	\$48,000		INDECA
b) Dissemination (U.S. 3 mos x \$12,000/m)	\$36,000		INDECA
c) Equipment and Program Trng. (U.S. 4 mos x \$12,000/m)	\$48,000		INDECA
2. Training		\$126,000	
2.2 Short Term		\$56,000	
Grades and Standards (2 part., 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th)	\$8,000		INDECA/DIGESA
Marketing Information (4 part., 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th)	\$16,000		INDECA/DIGESA
Internal Marketing (2 part, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th)	\$32,000		INDECA
2.3 In-Country		\$70,000	
Courses, Workshops, Seminars, etc	\$70,000		INDECA/DIGESA
3. Commodities		\$184,000	
3.1 Vehicles		\$54,000	
Pick-ups (2 Units, \$15,000 ea.)	\$30,000		INDECA
Motorcycles (8 U., \$3,000 ea.)	\$24,000		INDECA
3.2 Data Processing - INDECA		\$95,000	INDECA
3.3 Office Equipment - INDECA		\$35,000	INDECA

HIGHLANDS AGRICULTURAL DEVELOPMENT PROJECT (AID 520-0274) - PHASE II  
 DETAILED BUDGET BY LINE ITEM AND RECIPIENT AGENCY

COMPONENT: CREDIT SERVICES			
LINE ITEM	COST (US\$)		Recipient Institution
TOTAL FOR COMPONENT:		\$4,422,000	
1. Technical Assistance		\$552,000	
1.1 Long Term		\$300,000	
Credit Advisor (U.S., 24 mos x \$150,000/yr)	\$300,000		BANDESA
1.2 Short Term		\$252,000	
Computer System Specialist (U.S. 9 mos x \$12,000/m)	\$108,000		BANDESA
Organiz./Methods/Credit Adv. (U.S. 12 mos x \$12,000/m)	\$144,000		BANDESA
2. Training		\$234,000	
2.1 Short Term		\$84,000	
Financial Analysis/Credit Mngt (2 part., 3rd, 1mo. ea., \$4,000/m)	\$84,000		BANDESA
2.2 In-Country		\$150,000	
Courses, Workshops, Seminars, etc	\$150,000		
3. Commodities		\$776,000	
3.1 Vehicles		\$450,000	
Pick-ups (30 Units, \$15,000 ea.)	\$450,000		BANDESA
3.2 Data Processing		\$176,000	BANDESA
3.3 Office Equipment		\$150,000	BANDESA
4 Credit (Trust Fund)		\$2,000,000	BANDESA
-Irrigation Construction/Mant.	\$1,500,000		
-Marketing	\$500,000		
5 Special Accounts		\$860,000	BANDESA
-Agricultural Techn. Assist.	\$500,000		
-Irrig. Feasibility & Design	\$360,000		

HIGHLANDS AGRICULTURAL DEVELOPMENT PROJECT (AID 520-0274) - PHASE II  
 DETAILED BUDGET BY LINE ITEM AND RECIPIENT AGENCY

COMPONENT: SUPPORT SERVICES			
LINE ITEM	COST (US\$)	Recipient Institution	
TOTAL FOR COMPONENT:	\$5,226,400		
1. Administrative Services	\$2,063,400		
1.1 Personnel Services	\$1,498,400		
Chief of Party/Mngt Advisor (U.S., 42mos. x \$225,000/yr)	\$787,500	N/A	
Training Specialist (U.S., 12mos. x \$200,000/yr)	\$200,000	N/A	
Project Procurement Specialist (U.S., 15mos. x \$16,000/m)	\$240,000	N/A	
Personnel Support	\$270,900	N/A	
1.2 Non-Personnel	\$565,000	N/A	
2. Technical Services	\$1,610,000		
Irrigation/Soil Cons. Spec. (Gua., 4yrs. x \$35,000/y. x 5)	\$700,000	DIGESA	
Agroforestry Specialist (Gua., 4yrs. x \$35,000/yr)	\$140,000	DIGEDS	
Marketing Specialists (Gua., 4yrs. x \$35,000/y. x 2)	\$280,000	DIGESA/INDECA	
Ground Water Specialist (Gua., 3yrs. x \$35,000/yr)	\$105,000	DIGESA	
Vegetable Crops (Gua., 3yrs. x \$35,000/yr)	\$105,000	ICTA	
Soil Fertility (Gua., 3yrs. x \$35,000/yr)	\$105,000	DIGESA/ICTA	
Livestock Management (Gua., 2yrs. x \$35,000/yr)	\$70,000	DIGEDEPE	
Computer Specialist (Gua., 3yrs. x \$35,000/yr)	\$105,000	DIGESA	
3. Technical Support (In-Country Technical Support Contracts and Grants)	\$773,000		
3.1 Pre-Shipment Lab. Testing	\$75,000	N/A	
3.2 Publication/Information	\$50,000	ALL AGENCIES	
3.3 Local Administrative Support			
-National Level Operation	\$250,000	COSLCO	
-Six regions operation	\$548,000	COREZA's	
3.4 Data Management	\$25,000	DIGESA/INDECA	
3.5 Project Orientation	\$25,000	ALL AGENCIES	

HIGHLANDS AGRICULTURAL DEVELOPMENT PROJECT (AID 520-0274) - PHASE II  
 DETAILED BUDGET BY LINE ITEM AND RECIPIENT AGENCY

COMPONENT: SUPPORT SERVICES			Recipient Institution
LINE ITEM	COST (US\$)		
4. Baseline Studies	\$150,000		N/A
5. Environment	\$100,000		DIGESA
6. Policy Advisor (U.S., PEO, 3yrs x \$110,000)	\$330,000		USAID/ORD
OTHER ACTIVITIES AND ACCOUNTS OUT OF THE COMPONENTS:			
	\$2,185,100		
1. EVALUATION AND AUDIT	\$310,000		N/A
2. INFLATION (10% from 2nd year)	\$1,280,000		N/A
3. CONTINGENCIES (4.5%)	\$595,100		N/A

HIGHLANDS AGRICULTURAL DEVELOPMENT NEW MONEY (USA)  
 PHASE II/COMBINATION WITH THE SMALL FARMER DIVERSIFICATION PROJECT (520-0255)

LINE ITEMS	1989		1990		1991		1992		1993		TOTAL		TOTAL	I CONTRIB.	I TOTAL PROJECT	
	AID	GOG COUNTERP.	AID	GOG COUNTERP.												
Technical Assistance	\$688,000	\$0	\$899,000	\$0	\$639,000	\$0	\$183,000	\$0	\$24,000	\$0	\$2,433,000	\$0	\$2,433,000	1	16.2%	8.1%
Training	\$179,000	\$0	\$259,000	\$0	\$141,000	\$0	\$111,000	\$0	\$76,000	\$0	\$786,000	\$0	\$786,000	1	5.2%	2.6%
Equipment/Vehicles	\$1,537,500	\$0	\$42,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,579,500	\$0	\$1,579,500	1	10.5%	5.3%
Trust Fund/Credit	\$0	\$800,000	\$100,000	\$800,000	\$700,000	\$800,000	\$700,000	\$800,000	\$500,000	\$500,000	\$2,000,000	\$4,000,000	\$6,000,000	1	13.3%	20.1%
Financial Services	\$50,000	\$200,000	\$130,000	\$200,000	\$200,000	\$200,000	\$235,000	\$200,000	\$245,000	\$200,000	\$860,000	\$1,000,000	\$1,860,000	1	5.7%	6.2%
Construction	\$75,000	\$0	\$55,000	\$0	\$130,000	\$0	\$0	\$0	\$0	\$0	\$260,000	\$0	\$260,000	1	1.7%	0.9%
Personnel Techn. Services	\$315,000	\$0	\$350,000	\$0	\$350,000	\$0	\$315,000	\$0	\$280,000	\$0	\$1,610,000	\$0	\$1,610,000	1	10.7%	5.4%
Contract Techn./Adm. Services	\$236,600	\$0	\$206,600	\$0	\$176,600	\$0	\$176,600	\$0	\$176,600	\$0	\$973,000	\$0	\$973,000	1	6.5%	3.3%
Administrative Services	\$412,680	\$0	\$412,680	\$0	\$412,680	\$0	\$412,680	\$0	\$412,680	\$0	\$2,063,400	\$0	\$2,063,400	1	13.8%	6.9%
Environmental Protection	\$75,000	\$0	\$25,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$100,000	\$0	\$100,000	1	0.7%	0.3%
Evaluations/Audits	\$0	\$0	\$20,000	\$0	\$140,000	\$0	\$20,000	\$0	\$130,000	\$0	\$310,000	\$0	\$310,000	1	2.1%	1.0%
Baseline Studies	\$50,000	\$0	\$50,000	\$0	\$50,000	\$0	\$0	\$0	\$0	\$0	\$150,000	\$0	\$150,000	1	1.0%	0.5%
Institutional Operational Fund	\$0	\$1,365,989	\$0	\$1,370,989	\$0	\$2,341,990	\$0	\$2,348,040	\$0	\$2,354,695	\$0	\$9,781,703	\$9,781,703	1	0.0%	32.0%
<b>SUB-TOTAL</b>	<b>\$3,638,780</b>	<b>\$2,365,989</b>	<b>\$2,549,280</b>	<b>\$2,370,989</b>	<b>\$2,939,280</b>	<b>\$3,341,990</b>	<b>\$2,153,280</b>	<b>\$3,348,040</b>	<b>\$1,844,280</b>	<b>\$3,354,695</b>	<b>\$13,124,900</b>	<b>\$14,781,703</b>	<b>\$27,906,603</b>	1		
Contingencies (4.5%)	\$161,220	\$0	\$114,718	\$0	\$132,268	\$0	\$99,423	\$0	\$87,472	\$0	\$595,100	\$0	\$595,100	1	4.0%	2.0%
Inflation 1982 (from 2nd. Year)	\$0	\$0	\$300,000	\$0	\$380,000	\$0	\$300,000	\$0	\$300,000	\$0	\$1,280,000	\$0	\$1,280,000	1	8.5%	4.3%
<b>SUB-TOTAL</b>	<b>\$161,220</b>	<b>\$0</b>	<b>\$414,718</b>	<b>\$0</b>	<b>\$512,268</b>	<b>\$0</b>	<b>\$399,423</b>	<b>\$0</b>	<b>\$387,472</b>	<b>\$0</b>	<b>\$1,875,100</b>	<b>\$0</b>	<b>\$1,875,100</b>	1		
<b>TOTAL</b>	<b>\$3,799,999</b>	<b>\$2,365,989</b>	<b>\$2,963,998</b>	<b>\$2,370,989</b>	<b>\$3,451,548</b>	<b>\$3,341,990</b>	<b>\$2,552,703</b>	<b>\$3,348,040</b>	<b>\$2,231,752</b>	<b>\$3,354,695</b>	<b>\$15,000,000</b>	<b>\$14,781,703</b>	<b>\$29,781,703</b>	1	100.0%	100.0%
<b>% PER YEAR AND SOURCE</b>	<b>25.3%</b>	<b>16.0%</b>	<b>19.8%</b>	<b>16.0%</b>	<b>23.1%</b>	<b>22.5%</b>	<b>17.0%</b>	<b>22.6%</b>	<b>14.9%</b>	<b>22.7%</b>	<b>100.0%</b>	<b>100.0%</b>				
<b>% COUNTERPART CONTRIBUTION</b>													<b>49.6%</b>			

VI. IMPLEMENTATION PLAN

A. Administrative Arrangements

1. A.I.D. Responsibilities

The USAID Guatemala Office of Rural Development (ORD) will have overall responsibility for monitoring the Project. ORD will select an experienced person with agricultural credentials and a proven record of managing multi-faceted agricultural development programs. This Project Officer will serve as chairman of the Mission Project Committee, which will develop monitoring tasks and mechanisms for anticipating and resolving implementation problems in a timely manner. The Project Committee will have representation from PDSO, the Private Sector Office and the Controller.

The Project Officer, with appropriate Mission staff, GOG counterparts and the Prime Contractor (described below), will also develop the yearly planning documents needed to allocate PL-480 resources to this Project effectively. The Project Officer will be responsible for ensuring that Project resources are linked as needed with resources of other Mission projects. This is particularly important for those activities involving rural roads, electrification, farmer organizations and agribusiness.

A.I.D. will be responsible for negotiating and awarding an overall Project technical assistance contract under competitive bid to a U.S. firm with proven management skills in private/public sector development and experienced knowledge of the problems and process of development in countries such as Guatemala. GOG personnel will participate actively in the contractor selection process. The Request for Proposal and the contracting process will be guided by the following considerations: (a) the firm must have demonstrable experience in management and sub-contracting; (b) full participation is expected of Guatemalan firms and individuals in research and in other aspects of implementation; and (c) the firm must have a demonstrated capacity to provide a wide variety of technical assistance and commodity procurement, to implement a Project-level data management system for monitoring purposes, and to arrange U.S. and third country training.

The project will be implemented by two FSNDHs under the direction of the USDH. Project progress will be monitored to assure that this configuration is viable or if, due to heavy implementation requirements, a PSC will be required to complement this team.

## 2. GOG Responsibilities

The responsible agency will be the Ministry of Agriculture, Livestock and Food (MAGA). Implementation responsibility will be delegated to a national-level Guatemalan entity which will establish, for the purposes of Project management, a Project Administration Unit. Implementation requiring participation of specific departments of MAGA will be under the overall direction and coordination of this unit. Annex T contains a description of the organizational relationships, responsibilities and functions of the participating agencies of MAGA.

The unit will carry out a wide range of activities, including orientation, support and selective supervision of the several Ministry Departments (e.g., DIGESA, DIGESEPE, ICTA, INDECA and BANDESA) involved in Project implementation. The unit will be kept informed of the activities and progress of the private sector firms and the individual contractors. The unit will assure the maintenance of acceptable public sector performance levels and coordinate reprogramming of public sector resources as necessary. It will maintain close contact with USAID and the Contractor. The unit will also be responsible for consolidating and submitting regional operational plans and progress reports from the several Ministry departments, with the appropriate analyses and recommendations.

At the operational level, the unit will represent MAGA with respect to defining Project terms of reference, bid evaluation, and contract review for those stated and agreed upon activities being executed by the GOG agencies and/or private sector firms, organization, and individuals. It will also represent MAGA in the identification of suitable candidates for both long- and short-term overseas training, serve as a clearing house for private sector training grants, and supervise public sector services to assure they meet criteria in the Project Phase II Amendment Plan in terms of adequacy and timeliness. DIGESA will have specific responsibility for supervision of the construction of irrigation projects under the Project.

The Dirección General de Caminos (DGC) will coordinate with DIGESA to prioritize the selection of sites for roadwork related to this and future Projects. The Geographic Information System (GIS), financed under the HAD Project, will provide the DGC and DIGESA with data necessary to effectively determine transportation demand and important farm-to-market access factors in Project regions. These data include land use patterns, natural resource distribution, socio-economic information and infrastructure usage.

The Contractor will coordinate closely with all agencies of the GOG involved with implementation of the Project. The technical assistance provided for the different components of the Project will have appropriate counterparts designated within specific departments of MAGA. Both the Contractor and individual consultants, in addition to their reporting responsibilities vis-a-vis USAID, will provide agreed-upon reports to MAGA.

Pre-implementation workshops will be conducted both centrally and regionally, in order to introduce the Phase II Project to participating agencies of the GOG and to clarify coordination issues, responsibilities and time schedules. Funds have been included in the Project for this purpose.

MAGA is responsible for: 1) general policy guidelines of the Project; 2) reviewing and approving annual operational plans; and 3) financial reports of the GOG on the Project. National departmental directors will be responsible for Project activities related to their department at national and regional operational levels. Project implementation requiring inter-departmental cooperation at the regional level will function through the COREDA (Regional Agricultural Development Committee) mechanism.

#### B. Monitoring Plan

The HAD II Project will task the Contractor with the design and implementation of a Project Monitoring System, including baseline data, which effectively provides a continuous flow of data, which tracks Project implementation and measures Project impact. This system will track, in addition to financial management of the Project, progress toward achievement of projected outputs and provide an "early warning" system to Project managers when serious shortfalls are developing. This Monitoring System will build on the lessons learned in the Small Farmer Diversification and HAD I Projects.

##### 1. Project Implementation

Monitoring the Project implementation process will focus on adherence to the programmed schedule and work plan (i.e., timely acquisition of inputs and achievement of estimated outputs) and on the flow of administrative and financial information, paperwork and actions. In each case, the underlying role of the monitoring system is to maintain Project management current and to alert them as to implementation trouble spots before they can adversely affect the Project. To this end, the Contractor will design the reporting and tracking systems that will keep management apprised of the status of each

activity; and it will assist Project management in the use of these tracking systems. Analyses of the monitoring information will be used at Project management and executive levels to modify procedures and strategies to best attain Project goals. The objectively verifiable indicators in the PPS will form part of the criteria against which progress is measured.

A key responsibility of the USAID Project Officer will be to work closely on a partnership basis with the Project Contractor to assure that the Project implementation plans are being carried out. The Project Officer will be the person primarily responsible for keeping the Project Management Committee advised of Project performance and be able to respond to requests for up-to-date, reliable information on the Project from Mission management, AID/W and other concerned offices and/or organizations.

## 2. Project Impact

Project impact upon target farmers will be assessed by means of a three-phase program consisting of :

- Initial baseline sample surveys of the project areas;
- Periodic surveys during the life of the project;
- A final impact survey

The objective of the baseline survey will be to collect information describing the characteristics of farms, farm households, and rural communities to be affected by the project and relevant to its goals and purposes: cropping and livestock patterns and yields; soil conservation and water use; household incomes, purchases, expenditures and consumption; credit and technical assistance received; marketing patterns; family characteristics, education, literacy, and the roles of women and children. The information will be used (1) to aid in the design of project activities best adapted to local circumstances; and, (2) to provide a data base against which subsequent changes wrought by the project may be assessed by surveys in the final impact evaluation.

The baseline survey will be undertaken as early as practicable during the first year of the project. A plan will be developed to determine the most effective schedule for surveys to be undertaken in each of the project areas. The final impact survey is planned for the second half of the last year. The contractor will assist in the design of the basic

information instruments, data processing programs and analytical measurements in order to standardize them across participating agencies.

The project will finance the installation of information systems in some of the implementing agencies and assist in upgrading existing systems; inter-agency standardization. Compatibility, and access will be emphasized. The irrigation feasibility studies and the credit application system will provide managers with an additional data base for impact measurement. On-going monitoring through subsequent credit application and specific surveys of client groups will complement the periodic surveys in providing indicators of change and project impact.

### C. Procurement Plan

#### 1. Technical Assistance

Most technical assistance will be provided by a contractor selected via open competitive bid. In areas where USAID Mission elects to contract services for selected TA through the PSC, IQC, PASA arrangements and/or other modes, the Contractor will be made responsible for assuring Project quality control and setting performance standards for technical assistance. The oversight arrangement which defines management responsibilities will be specified in the contractual agreements between USAID and the Contractor.

#### 2. Commodities

Commodities to be procured for this Project Phase II Amendment will be in the following general categories: a) vehicles; b) laboratory and field demonstration equipment; and c) support equipment for data collection, analysis and information programs. See Annex P for an illustrative listing.

All commodities will have their source and origin in the U.S., Guatemala, and member countries of the Central American Common Market. Only U.S. manufactured motor vehicles will be procured. The Contractor will have procurement authority for this Project amendment.

#### 3. Construction and Facility Rehabilitation Plan

Ministry of Agriculture (MAGA) will contract with a local construction firm through competitive procedures to design and supervise the construction and/or rehabilitation of facilities as noted in Annex P. The work required is not complicated, and the plans and specifications for such

facilities will generally adhere to GOG requirements governing such facilities. Maximum utilization of interior building space and equipment requirements will be the principal criteria. The designated sub-contract firm and/or individual under the Contractor will be responsible for assuring that design and construction conforms to established standards.

#### D. Training Plan

The evaluations of the forerunner activities to this HAD II Amendment concluded that additional resources must be made available to strengthen training support for small farmer programs. This constraint is notably critical when introducing subsistence farmers to non-traditional crops which require higher levels of technology and appropriate use of inputs and credit. Written material has limited utility among an largely uneducated, multi-lingual populace. Equally important is the need to improve the technical preparation of public sector research and extension personnel, and to raise the administrative and management capabilities among public sector officials. Improved and expanded training and education programs to introduce technological changes at the farm level, increase communication and dissemination of information, and introduce greater efficiency in program and Project implementation will be greatly expanded in this Project.

The Project Amendment will finance degree and non-degree training in the United States and third countries, and a comprehensive package of short courses, seminars, workshops and field observation programs in Guatemala. The program is designed to provide approximately 900 person months of overseas long- and short-term training activities, and approximately \$540,000 has been programmed for a wide range of in-country training activities encompassing over 270 courses and involving over 2,600 participants from both the public and private sector.

The Contractor under this USAID-financed activity will provide the necessary consultant services, commodity support needs (except construction) and logistical/management oversight to insure that Project goals in this category are enacted as planned. The key element will be the development and implementation of a five-year Project training plan that details the scope and direction of all long- and short-term training, in-country training, and related support requirements such as needs assessments, training materials/communications and information management. The Project will provide a training consultant for 30 person-months and short-term assistance in extension training/materials, adult learning and training-for-trainers programs, and audio-visual specialties.

### E. Audit and Evaluation Plan

The Ministry of Agriculture, Livestock and Food, as part of the GOG, is audited each year by the Contraloria de Cuentas, the official GOG Audit Institution. AID funding for audit activity has been included in the project budget. These audits will be supervised and reviewed by the USAID Controller's office to ensure conformity with sound fiscal management practices.

Two formal external evaluations of the Project are proposed -- one in the fourth quarter of Year Two and the other in the third quarter of Year Four. These evaluations will be undertaken by a select team of short-term expatriate and Guatemalan consultants. Resource personnel for the evaluators will be the Project contractor(s), A.I.D. Mission, and the concerned public and private institutions in Guatemala. It is the intent of the Mission to use the services of 8a firms for at least one of the evaluations.

To set the basis for these evaluations, and to provide a system of continuous monitoring and oversight throughout the life of Phase II, the Contractor, with the A.I.D. Project Officer and key GOG counterparts, will identify baseline data requirements, develop specific evaluation criteria, establish quantifiable performance benchmarks (specifically as related to end-of-project output indicators) and a comprehensive monitoring and evaluation plan. This should be established within the first quarter of Year One in the Project. The USAID Mission designated evaluation officer will be involved. The key output should be a evaluation framework that is timely, well-conceived, focused, uncomplicated and manageable.

External Evaluation One will essentially be an instrument to note the course of the Project, reprogram those resources that have no real opportunity of being used over the life of the Project, and address and provide relevant recommendations for overcoming critical problem areas. External Evaluation Two will be the main focal point for the USAID Mission decision whether to proceed on planning and allocating resources to support a five year Phase III activity.

Complementing the above, the USAID Mission will enact yearly reviews (during the first quarter of each Project year) to monitor progress of the Project. These will be chaired by the Director (or his designee). The Project Officer will institute a process of reasonable dialogue on a planned basis with the Contractor and will play a significant role in developing the Project's yearly implementation plan. In addition to the regular internal and external reviews the

Project will contain provisions for special evaluations as required. \$310,000 will be set aside for all outside and special evaluations and audits.

F. Implementation Schedule

The HAD Phase II Project Amendment activities will take place over a period of five years, beginning in October 1988. An illustrative implementation schedule is presented in the following table.

Shortly after the Project Agreement is signed with the GOG, a Request for Proposal (RFP) for the technical assistance contract will be issued by USAID.

Early phases of Project implementation of the Phase II Amendment will focus on developing or strengthening the management framework for the Project in the various participating GOG institutions and carrying out the arrangements for procurement, training, special studies and the monitoring system. During this early phase, expansion of Project activities from Region I to other regions will begin. It is anticipated that many of the key management training programs will be well established and operational, particularly those related to monitoring, planning, and evaluations at the different levels of the Project.

With the technical assistance under contract and in place, Project activities will focus on field programs, where many irrigation/watershed activities will already be underway and receiving improved production and marketing inputs. Much of the marketing infrastructure activities will take place during this period, as production stabilizes on the irrigated farms.

Intensive reviews of the Project, chaired by the Mission Director, will be held on an annual basis. The USAID Project Committee will meet regularly to monitor progress of the Project and resolve problems. Two external evaluations will be carried out. The first evaluation will take place in the fourth quarter of the second Project year. This interim evaluation will assess Project implementation progress to date and identify the need to redirect or reprogram Project activities. The second external evaluation will be carried out in the third quarter of Year 4. This Final Evaluation will examine both impact and progress toward achieving Project purposes and outputs, and will provide the basis upon which to plan follow-on Project activities.

ILLUSTRATIVE IMPLEMENTATION SCHEDULE

<u>DATE</u>	<u>ACTIVITY</u>
July 1988	. PPS approved in Mission.
August 1988	. Procurement begun under HAD I for commodities in Amendment 4. . Project Amendment Agreement signed AID/GOG.
September 1988	. Request for Proposal (RFP) for technical assistance contractor prepared and issued. . Environmental Assessment completed.
<u>PROJECT YEAR ONE</u>	
October 1988	. AID, GOG, Colegio de Ing. Agronomos, Asociacion de Peritos Agronomos, etc. design the private TA mechanism. . Trust Fund agreement written by BANDESA and AID, and presented to GOG.
December 1988/ January 1989	. Mission Committee selects technical assistance contractor.
February 1989	. Contract signed with technical assistance Contractor.
March 1989	. TA Contractor begins operations.
May/June 1989	. Contract signed for land use map overlay system.
June 1989	. Commodity procurement process begun. . Irrigation site selection criteria determined. . Qualify regional contractors for small-scale irrigation system feasibility studies and project construction.

- . Design and implementation of the benchmark database framework at the regional level.
- . Design of market information system and grades and standards.
- July 1989 . ST training for information, grades and standards and marketing.
- . Long-Term training begins.
- August 1989 . Contractor, AID and GOG have first semiannual progress review.
- . Year Two Implementation Plan and Budget approved by GOG and AID.

PROJECT YEAR TWO

- October 1989 . Full Mission review of Project, chaired by Mission Director
- March 1990 . Key irrigation seminar (progress to-date, on-site visitation.)
- May 1990 . Regional Conference on soil conservation (natural resource management context.)
- July 1990 . Year Three Implementation Plan and Budget approved by GOG/AID.
- August 1990 . Major AID external interim evaluation of Project

PROJECT YEAR THREE

- July 1991 . Year Four Implementation Plan and Budget approved by GOG/AID.

PROJECT YEAR FOUR

- November 1991 . Informal AID/GOG evaluation.

- May 1992 . Final external evaluation of Project to reprogram and recommend basis for design of Phase III follow-on project.
- July 1992 . Year five operational plan approved by GOG/AID.

PROJECT YEAR FIVE

- October 1992 . Intensive Project review by AID, chaired by Mission Director.
- November 1992 . Begin draft of new project or phase III.
- April 1993 . New project or phase III approved.
- July 1993 . New project signed with GOG.

VII. CONDITIONS PRECEDENT, COVENANTS AND NEGOTIATING STATUS

A. Conditions precedent to Disbursement for Specific Activities

(1) Prior to any disbursement of credit funds for irrigation, soil conservation, reforestation, watershed management and agricultural production, the GOG and A.I.D. shall reach agreement on measures recommended in the Environmental Assessment to mitigate potential adverse environmental impacts caused by Project activities.

(2) Prior to first disbursement of the additional TWO MILLION UNITED STATES DOLLARS (US\$2,000,000) of Grant fund included in this Amendment and programmed for use by BANDESA to finance the credit needs of Project beneficiaries, or to the issuance by A.I.D. of documentation pursuant to which disbursement will be made, the Grantee will, except as the Parties may otherwise agree in writing, furnish to A.I.D. in form and substance satisfactory to A.I.D.:

a. A revised trust agreement between the Ministry of Finance and BANDESA for the administration of no less than an additional Quetzal equivalent of FIVE MILLION UNITED STATES DOLLARS (US\$5,000,000.00) in counterpart funding and up to an additional amount of TWO MILLION UNITED STATES DOLLARS (US\$2,000,000) of A.I.D. Grant Funds. The GOG counterpart fund will finance the non-reimbursable social payments and the production and investment credit needs of Project beneficiaries. The additional A.I.D. Grant Funding will be used to finance working capital and marketing credit needs of Project beneficiaries. The additional GOG counterpart contribution will be made available to BANDESA in equal annual amounts beginning in 1989 and continuing through 1993.

b. A resolution of the BANDESA Board of Directors approving a plan to decentralize the operations of the District Offices, Agencies and Cajas Rurales located in Regions I, II, VI and VII in accordance with the actual regional distribution of the Bank. This plan will include, but not be limited to, (1) an increase in regional loan approval authority; (2) decentralization of loan analysis, delivery and credit administration; (3)

decentralization of administrative and legal loan recovery processes and procedures; and (4) decentralization of accounting and financial systems.

Upon A.I.D. approval of this plan, a first disbursement of ONE MILLION UNITED STATES DOLLARS (US\$1,000,000.00) of Grant Funds will be made to the BANDESA trust fund. Two years following the first disbursement and upon the receipt of documentation supporting the progress attained in decentralizing regional operations, a final disbursement of Grant Funds totalling ONE MILLION UNITED STATES DOLLARS (US\$1,000,000) will be made to the trust fund.

B. Covenants

Prior to any disbursement of credit funds, the Grantee hereby covenants that, except as the Parties may otherwise agree in writing:

- (1) A project technical committee directly responsible to the Office of the Vice-Minister of Agriculture shall be created to assure proper functioning and coordination of the Project within the GOG;
- (2) A.I.D. shall be provided with a financial plan detailing counterpart contributions including personnel and infrastructural support to the Project;
- (3) A.I.D. shall be provided with a yearly time-phased action plan which describes all Project inputs, outputs and implementation arrangements of the GOG;
- (4) BANDESA shall support the reorganization process initiated in Region I under Project Amendment IV, in additional Regions II, VI and VII;
- (5) Guatemalan professionals with appropriate technical qualifications will be assigned to serve as counterparts to all Project-financed consultants;
- (6) Funds for the necessary repair and spare parts for all Project-financed vehicles will be provided.
- (7) an impact evaluation near the end of the Project will be carried out with A.I.D. Grant resources included in this Amendment. The consulting firm or individual carrying out this evaluation activity will

be selected by mutual agreement of the Parties. Except as the Parties may otherwise agree in writing, the evaluation will include at least the following aspects:

- (a) Evaluation of progress towards achieving Project objectives;
- (b) Identification and evaluation of problem areas or constraints which impede achievement of outputs;
- (c) Analysis of ways in which problem areas and constraints may be resolved.

8. Annual internal Project evaluations shall be carried out during the entire life of the Project. These internal evaluations will be the basis for the preparation of the annual implementation plans and budgets, and shall be presented for A.I.D. consideration. The internal evaluations will examine the programmed targets, the supervision system, logistics and other elements of the Project to recommend and implement the necessary improvements.

(9) Annual independent audits of each activity under the Project, in accordance with standard auditing principles, shall be carried out with resources included in this Project Amendment. These audits should be carried out during the first quarter of each year. Said audits will in no event replace the periodic Project audits which must be carried out by the GOG Controller Office (Contraloria de Cuentas de la Republica de Guatemala)

#### C. Negotiating Status

The activities described in this Project Paper Amendment have been fully discussed with the appropriate GOG officials. The GOG supports the Project as designed, and implementation may proceed upon signing of the Project Agreement.

## 5C(1) - COUNTRY CHECKLIST

Listed below are statutory criteria applicable to: (A) FFA funds generally; (B)(1) Development Assistance funds only; or (B)(2) the Economic Support Fund only.

A. GENERAL CRITERIA FOR COUNTRY ELIGIBILITY

1. FY 1988 Continuing Resolution Sec. 526.

Has the President certified to the Congress that the government of the recipient country is failing to take adequate measures to prevent narcotic drugs or other controlled substances which are cultivated, produced or processed illicitly, in whole or in part, in such country or transported through such country, from being sold illegally within the jurisdiction of such country to United States Government personnel or their dependents or from entering the United States unlawfully?

The President has not so determined. Guatemala does take adequate steps to prevent narcotics traffic.

2. FAA Sec. 481(h). (This provision applies to assistance of any kind provided by grant, sale, loan, lease, credit, guaranty, or insurance, except assistance from the Child Survival Fund or relating to international narcotics control, disaster and refugee relief, or the provision of food or medicine.) If the recipient is a "major illicit drug producing country" (defined as a country producing during a fiscal year at least five metric tons of opium or 500 metric tons of coca or marijuana) or a "major drug-transit country" (defined as a country that is a significant direct source of illicit drugs significantly affecting the United States, through which such drugs are transported, or through which significant sums of drug-related profits are laundered with the knowledge or complicity of the government), has the President in the March 1 International Narcotics Control Strategy Report (INSCR) determined and certified to the Congress (without

The President has not so determined.

Congressional enactment, within 30 days of continuous session, of a resolution disapproving such a certification), or has the President determined and certified to the Congress on any other date (with enactment by Congress of a resolution approving such certification), that (a) during the previous year the country has cooperated fully with the United States or taken adequate steps on its own to prevent illicit drugs produced or processed in or transported through such country from being transported into the United States, and to prevent and punish drug profit laundering in the country, or that (b) the vital national interests of the United States require the provision of such assistance?

3. Drug Act Sec. 2013. (This section applies to the same categories of assistance subject to the restrictions in FAA Sec. 481(h), above.) If recipient country is a "major illicit drug producing country" or "major drug-transit country" (as defined for the purpose of FAA Sec 481(h)), has the President submitted a report to Congress listing such country as one (a) which, as a matter of government policy, encourages or facilitates the production or distribution of illicit drugs; (b) in which any senior official of the government engages in, encourages, or facilitates the production or distribution of illegal drugs; (c) in which any member of a U.S. Government agency has suffered or been threatened with violence inflicted by or with the complicity of any government officer; or (d) which fails to provide reasonable cooperation to lawful activities of U.S. drug enforcement agents, unless the President has provided the required certification to Congress pertaining to U.S. national interests and the drug control and criminal prosecution efforts of that country?

The President has not submitted a report to Congress listing such country.

4. FAA Sec. 620(c). If assistance is to a government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) the debt is not denied or contested by such government? NO
5. FAA Sec. 620(e)(1). If assistance is to a government, has it (including any government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities? N/A
6. FAA Secs. 620(a), 620(f), 620D; FY 1987 Continuing Resolution Secs. 512, 560. Is recipient country a Communist country? If so, has the President determined that assistance to the country is important to the national interests of the United States? Will assistance be provided to Angola, Cambodia, Cuba, Iraq, Syria, Vietnam, Libya, or South Yemen? Will assistance be provided to Afghanistan without a certification? NO
7. FAA Sec. 620(j). Has the country permitted, or failed to take adequate measures to prevent, damage or destruction by mob action of U.S. property? NO
8. FAA Sec. 620(l). Has the country failed to enter into an investment guaranty agreement with OPIC? NO.
9. FAA Sec. 620(o); Fishermen's Protective Act of 1967 (as amended) Sec. 5. (a) Has the country seized, or imposed any penalty or sanction against, any U.S. fishing vessel because of fishing activities in international waters? (b) If so, has any deduction required by the Fishermen's Protective Act been made? N/A

10. FAA Sec. 620(q); FY 1987 Continuing Resolution Sec. 518. (a) Has the government of the recipient country been in default for more than six months on interest or principal of any loan to the country under the FAA? (b) Has the country been in default for more than one year on interest or principal on any U.S. loan under a program for which the FY 1987 Continuing Resolution appropriates funds? N/A
11. FAA Sec. 620(s). If contemplated assistance is development loan or from Economic Support Fund, has the Administrator taken into account the percent of the country's budget and amount of the country's foreign exchange or other resources spent on military equipment? (Reference may be made to the annual "Taking Into Consideration" memo: "Yes, taken into account by the Administrator at time of approval of Agency OYB." This approval by the Administrator of the Operational Year Budget can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.) N/A
12. FAA Sec. 620(t). Has the country severed diplomatic relations with the United States? If so, have relations been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption? NO
13. FAA Sec. 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the A.I.D. Administrator in determining the current A.I.D. Operating Year Budget? (Reference may be made to the Taking into Consideration memo.) Country is not delinquent
14. FAA Sec. 620A. Has the President determined that the recipient country grants sanctuary from prosecution to any individual or group which has committed an act of international terrorism or otherwise supports international terrorism? The President has not so determined.

15. ISDCA of 1985 Sec. 552(b). Has the Secretary of State determined that the country is a high terrorist threat country after the Secretary of Transportation has determined, pursuant to section 1115(e)(2) of the Federal Aviation Act of 1958, that an airport in the country does not maintain and administer effective security measures? NO
16. FAA Sec. 666(b). Does the country object, on the basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. who is present in such country to carry out economic development programs under the FAA? NO
17. FAA Secs. 669, 670. Has the country, after August 3, 1977, delivered to any other country or received nuclear enrichment or reprocessing equipment, materials, or technology, without specified arrangements or safeguards, and without special certification by the President? Has it transferred a nuclear explosive device to a non-nuclear weapon state, or if such a state, either received or detonated a nuclear explosive device? (FAA Sec. 620E permits a special waiver of Sec. 669 for Pakistan.) NO
18. FAA Sec. 670. If the country is a non-nuclear weapon state, has it, on or after August 8, 1985, exported (or attempted to export) illegally from the United States any material, equipment, or technology which would contribute significantly to the ability of a country to manufacture a nuclear explosive device? NO
19. IGDCA of 1981 Sec. 720. Was the country represented at the Meeting of Ministers of Foreign Affairs and Heads of Delegations of the Non-Aligned Countries to the 36th General Assembly of the U.N. on Sept. 25 and 28, 1981, and failed to disassociate itself from the communique issued? If so, has the President taken it into account? (Reference may be made to the Taking into Consideration memo.) Guatemala was not present at the meeting.

20. FY 1987 Continuing Resolution Sec. 528.  
Has the recipient country been determined  
by the President to have engaged in a  
consistent pattern of opposition to the  
foreign policy of the United States? NO
21. FY 1987 Continuing Resolution Sec. 513.  
Has the duly elected Head of Government  
of the country been deposed by military  
coup or decree? NO

B. FUNDING SOURCE CRITERIA FOR COUNTRY  
ELIGIBILITY

1. Development Assistance Country Criteria

FAA Sec. 116. Has the Department of  
State determined that this government has  
engaged in a consistent pattern of gross  
violations of internationally recognized  
human rights? If so, can it be  
demonstrated that contemplated assistance  
will directly benefit the needy?

No determination has been  
made regarding gross vio-  
lation of human rights.

2. Economic Support Fund Country Criteria

FAA Sec. 502B. Has it been determined  
that the country has engaged in a  
consistent pattern of gross violations of  
internationally recognized human rights?  
If so, has the President found that the  
country made such significant improvement  
in its human rights record that  
furnishing such assistance is in the U.S.  
national interest?

N/A

5C(2) - PROJECT CHECKLIST

Listed below are statutory criteria applicable to projects. This section is divided into two parts. Part A includes criteria applicable to all projects. Part B applies to projects funded from specific sources only: B(1) applies to all projects funded with Development Assistance; B(2) applies to projects funded from Development Assistance loans; and B(3) applies to projects funded from ESP.

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

A. GENERAL CRITERIA FOR PROJECT

1. FY 1987 Continuing Resolution Sec. 523; FAA Sec. 634A. Describe how authorization and appropriations committees of Senate and House have been or will be notified concerning the project. Congressional Notification was submitted to AID/W for transmittal to Congress. No obligation will be made until notification requirements have been met.
2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$500,000, will there be (a) engineering, financial or other plans necessary to carry out the assistance, and (b) a reasonably firm estimate of the cost to the U.S. of the assistance? A Project Financial Plan, with reasonable firm estimates of costs to AID is contained in this Phase II Amendment.
3. FAA Sec. 611(a)(2). If 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? Legislative action will be required and will take up to 60 days from submission of request.
4. FAA Sec. 611(b); FY 1987 Continuing Resolution Sec. 501. If project is for water or water-related land resource construction, have benefits and costs been computed to the extent practicable in accordance with the principles, standards, and procedures established pursuant to the Water Resources Planning Act (42 U.S.C. 1962, et seq.)? (See A.I.D. Handbook 3 for guidelines.) N/A

5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and total U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project? N/A
6. FAA Sec. 209. Is project susceptible to 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. The research component of the Project has interface with several Regional Projects.
7. FAA Sec. 601(a). Information and conclusions on whether projects will encourage efforts of the country to:  
(a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.
8. FAA Sec. 601(b). Information and conclusions on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise). The project is promoting greater private sector participation in Guatemala. Concurrently, private sector firms particularly in management marketing, training, and credit will be encouraged to bid on the activity.
9. FAA Secs. 612(b), 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars. The host country as a non-profit organization will use only local currency to meet its Project Amendment Commitments.
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. FY 1989 Continuing Resolution Sec. 521. NO  
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?
12. FY 1989 Continuing Resolution Sec. 558 N/A  
(as interpreted by conference report). If assistance is for agricultural development activities (specifically, any testing or breeding feasibility study, variety improvement or introduction, consultancy, publication, conference, or training), are such activities (a) specifically and principally designed to increase agricultural exports by the host country to a country other than the United States, where the export would lead to direct competition in that third country with exports of a similar commodity grown or produced in the United States; and can the activities reasonably be expected to cause substantial injury to U.S. exporters of a similar agricultural commodity; or (b) in support of research that is intended primarily to benefit U.S. producers?
13. FY 1989 Continuing Resolution Sec. 559. NO  
Will the assistance (except for programs in Caribbean Basin Initiative countries under U.S. Tariff Schedule "Section 807," which allows reduced tariffs on articles assembled abroad from U.S.-made components) be used directly to procure feasibility studies, prefeasibility studies, or project profiles of potential investment in, or to assist the establishment of facilities specifically designed for, the manufacture for export to the United States or to third country markets in direct competition with U.S. exports, of textiles, apparel, footwear, handbags, flat goods (such as wallets or coin purses worn on the person), work gloves or leather wearing apparel?

14. FAA Sec. 118(c). Does the assistance comply with the environmental procedures set forth in A.I.D. Regulation 16? Does the assistance place a high priority on conservation and sustainable management of tropical forests? Specifically, does the assistance, to the fullest extent feasible: (a) stress the importance of conserving and sustainably managing forest resources; (b) support activities which offer employment and income alternatives to those who otherwise would cause destruction and loss of forests, and help countries identify and implement alternatives to colonizing forested areas; (c) support training programs, educational efforts, and the establishment or strengthening of institutions to improve forest management; (d) help end destructive slash-and-burn agriculture by supporting stable and productive farming practices; (e) help conserve forests which have not yet been degraded, by helping to increase production on lands already cleared or degraded; (f) conserve forested watersheds and rehabilitate those which have been deforested; (g) support training, research, and other actions which lead to sustainable and more environmentally sound practices for timber harvesting, removal, and processing; (h) support research to expand knowledge of tropical forests and identify alternatives which will prevent forest destruction, loss, or degradation; (i) conserve biological diversity in forest areas by supporting efforts to identify, establish, and maintain a representative network of protected tropical forest ecosystems on a worldwide basis, by making the establishment of protected areas a condition of support for activities involving forest clearance or degradation, and by helping to identify tropical forest ecosystems and species in need of protection and establish and maintain appropriate protected areas; (j) seek to increase the awareness of

Yes. An Initial Environmental Examination made a positive determination. EA will define this aspect of the Project.

- a) The Project will support an agro-forestry component designed to minimize deforestation in upland areas and protect tributary watersheds.
- b) Project designed to use existing farm lands as a higher productive units.
- c) Training is contemplated in the agro-forestry activity.
- d) Project is designed to improve current agricultural lands with better small-scale irrigation programs and production technologies.
- e) Project not only helps to increase production on already cleared lands but will participate in soil conservation programs aimed at protecting watersheds, forest areas, and existing farmlands.
- f) Project will promote the establishment and management of local species or proven introduced species to protect watershed areas.
- g) Project does not plan on using resources for timber harvesting, processing

- U.S. government agencies and other donors of the immediate and long-term value of tropical forests; and (k) utilize the resources and abilities of all relevant U.S. government agencies?
15. FAA Sec. 119(g)(4)-(6). Will the assistance (a) support training and education efforts which improve the capacity of recipient countries to prevent loss of biological diversity; (b) be provided under a long-term agreement in which the recipient country agrees to protect ecosystems or other wildlife habitats; (c) support efforts to identify and survey ecosystems in recipient countries worthy of protection; or (d) by any direct or indirect means significantly degrade national parks or similar protected areas or introduce exotic plants or animals into such areas?
16. FAA 121(d). If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (either dollars or local currency generated therefrom)?
17. FY 1988 Continuing Resolution Sec. 532. Is disbursement of the assistance conditioned solely on the basis of the policies of any multilateral institution?
- h) No tropical forest research anticipated except possibly in some specie testing.
- i) No virgin forest clearing is part of the project.
- j) The agro-forestry component will give awareness to agro-forestry -not necessary long term value of tropical forest.
- k) NO
- a) NO  
b) NO  
c) NO  
d) NO
- N/A
- NO

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

- a. FAA Secs. 102(b), 111, 113, 281(a). Describe extent to which activity will (a) effectively involve the poor in development by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, dispersing investment from cities to small towns and rural areas, and

- a) The project intends to main stream selected subsistence farmers and marginal commercial farmers to be self-sustaining commercial farmers with packages of irrigation development and marketing support, plus offering packages of improved production technology.
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- insuring wide participation of the poor in the benefits of development on a sustained basis, using 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 Secs. 103, 103A, 104, 105, 106, 120-21. Does the project fit the criteria for the source of funds (functional account) being used?
- c. FAA Sec. 107. Is emphasis placed on use of appropriate technology (relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)?
- d. FAA Secs. 110, 124(d). Will the recipient country provide at least 25 percent of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)?
- e. FAA Sec. 128(b). If the activity attempts to increase the institutional capabilities of private organizations or the government of the country, or if it attempts to stimulate scientific and technological research, has it been designed and will it be monitored to ensure that the ultimate beneficiaries are the poor majority?
- b) The project will promote cooperative type water users groups and facilitate marketing arrangements through cooperatives as appropriate.
- c) Basically this is a project designed to help subsistent and marginally commercial farmers to be mainstreamed as self-sufficient commercial farmers.
- d) The project directly impacts on well-being of women.
- e) research related component such as pest management and the sector marketing component have regional implications for cooperation
- YES
- The project emphasises low cost, scale-neutral technologies in irrigation that have been very successful in Guatemala
- Counterpart contribution will be 25% or more.
- The project aims at selected beneficiaries from the poor majority who live in the Guatemalan highlands.

- 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 processes essential to self-government. <sup>making</sup> Project will provide significant resources to both private and public sector institutions that strengthen their decision making managerial and technical processes.
- g. FY 1987 Continuing Resolution Sec. 540. Are any of the funds to be used for the performance of abortions as a method of family planning or to motivate or coerce any person to practice abortions? NO
- Are any of the funds to be used to pay for the performance of involuntary sterilization as a method of family planning or to coerce or provide any financial incentive to any person to undergo sterilizations?
- Are any of the funds to be used to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilization as a means of family planning?
- h. FY 1987 Continuing Resolution. Is the assistance being made available to any organization or program which has been determined to support or participate in the management of a program of coercive abortion or involuntary sterilization? NO
- If assistance is from the population functional account, are any of the funds to be made available to voluntary family planning projects which do not offer, either directly or through referral to or information about access to, a broad range of family planning methods and services?
- i. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise? YES

- j. FY 1997 Continuing Resolution. How much of the funds will be available only for activities of economically and socially disadvantaged enterprises, historically black colleges and universities, and private and voluntary organizations which are controlled by individuals who are black Americans, Hispanic Americans, or Native Americans, or who are economically or socially disadvantaged (including women)? None
- k. FAA Sec. 118(c)(13). If the assistance will support a program or project significantly affecting tropical forests (including projects involving the planting of exotic plant species), will the program or project (a) be based upon careful analysis of the alternatives available to achieve the best sustainable use of the land, and (b) take full account of the environmental impacts of the proposed activities on biological diversity? N/A
- l. FAA Sec. 118(c)(14). Will assistance be used for (a) the procurement or use of logging equipment, unless an environmental assessment indicates that all timber harvesting operations involved will be conducted in an environmentally sound manner and that the proposed activity will produce positive economic benefits and sustainable forest management systems; or (b) actions which significantly degrade national parks or similar protected areas which contain tropical forests, or introduce exotic plants or animals into such areas? a) NO  
b) NO
- m. FAA Sec. 118(c)(15). Will assistance be used for (a) activities which would result in the conversion of forest lands to the rearing of livestock; (b) the construction, upgrading, or maintenance of roads (including temporary haul roads for logging or other extractive industries) which pass through relatively undegraded forest lands; (c) the colonization of forest lands; or (d) the construction of dams or other water a) NO  
b) NO  
c) NO  
d) NO

control structures which flood relatively undegraded forest lands, unless with respect to each such activity an environmental assessment indicates that the activity will contribute significantly and directly to improving the livelihood of the rural poor and will be conducted in an environmentally sound manner which supports sustainable development?

2. Development Assistance Project Criteria  
(Loans Only)

- a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan at a reasonable rate of interest.
- b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the recipient country to prevent export to the U.S. of more than 20 percent of the enterprise's annual production during the life of the loan, or has the requirement to enter into such an agreement been waived by the President because of a national security interest?
- c. FY 1987 Continuing Resolution. If for a loan to a private sector institution from funds made available to carry out the provisions of FAA Sections 103 through 106, will loan be provided, to the maximum extent practicable, at or near the prevailing interest rate paid on Treasury obligations of similar maturity at the time of obligating such funds?
- d. FAA Sec. 122(b). Does the activity give reasonable promise of assisting long-range plans and programs designed to develop economic resources and increase productive capacities?

3. Economic Support Fund Project Criteria

- a. FAA Sec. 531(a). Will this assistance promote economic and political stability? To the maximum extent feasible, is this assistance consistent with the policy directions, purposes, and programs of Part I of the FAA?
- b. FAA Sec. 531(e). Will this assistance be used for military or paramilitary purposes?
- c. ISDCA of 1985 Sec. 207. Will ESP funds be used to finance the construction, operation or maintenance of, or the supplying of fuel for, a nuclear facility? If so, has the President certified that such country is a party to the Treaty on the Non-Proliferation of Nuclear Weapons or the Treaty for the Prohibition of Nuclear Weapons in Latin America (the "Treaty of Tlatelolco"), cooperates fully with the IAEA, and pursues nonproliferation policies consistent with those of the United States?
- d. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?

5C(3) - STANDARD ITEM CHECKLIST

Listed below are the statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by imposing limits on certain uses of funds.

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. PROCUREMENT

1. FAA Sec. 602(a). Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed?
2. FAA Sec. 604(a). Will all procurement be from the U.S. except as otherwise determined by the President or under delegation from him?
3. FAA Sec. 604(d). If the cooperating country discriminates against marine insurance companies authorized to do business in the U.S., will commodities be insured in the United States against marine risk with such a company?
4. FAA Sec. 604(e); ISDCA of 1980 Sec. 705(a). If non-U.S. procurement of agricultural commodity or product thereof is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.)
5. FAA Sec. 604(g). Will construction or engineering services be procured from firms of advanced developing countries which are otherwise eligible under Code 941 and which have attained a competitive capability in international markets in one of these areas? (Exception for these

countries which receive direct economic assistance under the FAA and permit United States firms to compete for construction or engineering services financed from assistance programs of these countries.)

6. FAA Sec. 603. Is the shipping excluded from compliance with the requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 percent of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S. flag commercial vessels to the extent such vessels are available at fair and reasonable rates?
7. FAA Sec. 621(a). If technical assistance is financed, will such assistance be furnished by private enterprise on a contract basis to the fullest extent practicable? will the facilities and resources of other Federal agencies be utilized, when they are particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?
8. International Air Transportation Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will U.S. carriers be used to the extent such service is available?
9. FY 1987 Continuing Resolution Sec. 504. If the U.S. Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States?
10. FY 1987 Continuing Resolution Sec. 524. If assistance is for consulting service through procurement contract pursuant to 5 U.S.C. 3109, are contract expenditures a matter of public record and available for public inspection (unless otherwise provided by law or Executive order)?

B. CONSTRUCTION

1. FAA Sec. 601(d). If capital (e.g., construction) project, will U.S. engineering and professional services be used?
2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable?
3. FAA Sec. 670(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed \$100 million (except for productive enterprises in Egypt that were described in the CP), or does assistance have the express approval of Congress?

C. OTHER RESTRICTIONS

1. FAA Sec. 122(b). If development loan repayable in dollars, is interest rate at least 2 percent per annum during a grace period which is not to exceed ten years, and at least 3 percent per annum thereafter?
2. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights?
3. FAA Sec. 620(h). Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc countries?

4. Will arrangements preclude use of financing:

- a. FAA Sec. 104(f); FY 1987 Continuing Resolution Secs. 525, 540. (1) To pay for performance of abortions as a method of family planning or to motivate or coerce persons to practice abortions; (2) to pay for performance of involuntary sterilization as method of family planning, or to coerce or provide financial incentive to any person to undergo sterilization; (3) to pay for any biomedical research which relates, in whole or part, to methods or the performance of abortions or involuntary sterilizations as a means of family planning; or (4) to lobby for abortion?
- b. FAA Sec. 483. To make reimbursements, in the form of cash payments, to persons whose illicit drug crops are eradicated?
- c. FAA Sec. 620(g). To compensate owners for expropriated or nationalized property, except to compensate foreign nationals in accordance with a land reform program certified by the President?
- d. FAA Sec. 660. To provide training, advice, or any financial support for police, prisons, or other law enforcement forces, except for narcotics programs?
- e. FAA Sec. 662. For CIA activities?
- f. FAA Sec. 636(i). For purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained?
- g. FY 1987 Continuing Resolution Sec. 503. To pay pensions, annuities, retirement pay, or adjusted service compensation for military personnel?

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- h. FY 1987 Continuing Resolution Sec. 505.  
To pay U.N. assessments, arrears or dues?
- i. FY 1987 Continuing Resolution Sec. 506.  
To carry out provisions of FAA section 209(d) (transfer of FAA funds to multilateral organizations for lending)?
- j. FY 1987 Continuing Resolution Sec. 510.  
To finance the export of nuclear equipment, fuel, or technology?
- k. FY 1987 Continuing Resolution Sec. 511.  
For the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights?
- l. FY 1986 Continuing Resolution Sec. 516.  
To be used for publicity or propaganda purposes within U.S. not authorized by Congress?



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# Ministerio de Agricultura, Ganadería y Alimentación

PALACIO NACIONAL

GUATEMALA, C. A.

10035

USA  
GUATEMALA

M-1348/88  
Agosto 18 de 1988

ORD

POSO-

Sr. Anthony Cauterucci  
Director Misión AID/Guatemala  
Ciudad.

Estimado señor Director:

Por este medio me permito expresar y confirmar a la Agencia para el Desarrollo Internacional (AID) el interés del Gobierno de Guatemala en ampliar el financiamiento, las actividades y la cobertura del Proyecto No. 520-0274 "Desarrollo Agrícola del Altiplano" (PDAA).

En nuestras reuniones de trabajo hemos discutido la conveniencia de combinar en uno solo los Proyectos 520-255 "Sistemas de Diversificación de Cultivos para el Pequeño Agricultor" y 520-0274 "Desarrollo Agrícola del Altiplano". En este sentido, técnicos de este Ministerio y de la Misión AID han venido trabajando en el diseño de la Fase II del PDAA, el cual tengo entendido que ya fue concluido y recomienda, entre otros aspectos, ampliar el financiamiento de AID por aproximadamente US\$15.0 millones, que serán ejecutados durante un período de 5 años a partir de 1989.

También el Ministerio de Agricultura, Ganadería y Alimentación propondrá al Ministerio de Finanzas Públicas que el Gobierno de Guatemala contribuya con recursos adicionales en Quetzales equivalentes a aproximadamente US\$15.8 millones, de los cuales US\$5.0 millones serán recursos nuevos y el resto ya están presupuestados en las unidades ejecutoras involucradas. Como una posible fuente de financiamiento para cubrir los fondos nuevos adicionales de contrapartida, durante los cinco años de ejecución de la Fase II, se han identificado los recursos en moneda local generados por los Programas PL 480 y de Apoyo Económico de AID al Gobierno de Guatemala.

Asimismo, hemos acordado que la Fase II del PDAA, cuyo objetivo es aumentar la producción y rentabilidad agrícola a través del desarrollo de la agricultura diversificada comercial, pondrá un mayor énfasis en la construcción de sistemas de riego en pequeñas fincas y en la dotación de transferencia de tecnología apropiada, comercialización y crédito a los pequeños y medianos agricultores del país.

*P.*

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Sr. Anthony Cauterucci  
Director Misión AID/Guatemala

M-1348/88-2

En consecuencia, para alcanzar los objetivos y el énfasis indicados, la Fase II del PDAA estará integrada por los cinco componentes siguientes: (1) Uso de Aguas y Suelos; (2) Investigación y Extensión; (3) Servicios de Crédito; (4) Comercialización; y (5) Servicios de Apoyo para la Ejecución del Proyecto.

Finalmente, solicito a usted se sirva hacer los arreglos necesarios para que su sede en Washington autorice el otorgamiento de US\$15.0 de recursos de donación al Gobierno de la República de Guatemala para llevar a cabo la ejecución de la Fase II del PDAA.

Al reiterarle, en representación del Gobierno de Guatemala, el interés en continuar ejecutando tan importante proyecto para impulsar el desarrollo agrícola de los pequeños y medianos productores guatemaltecos, de conformidad con el diseño elaborado conjuntamente, me suscribo con las muestras de mi distinguida consideración y estima.



Ing. Lic. RODOLFO ESTRADA HURTADO  
Ministro de Agricultura, Ganadería  
y Alimentación

M/Idem.

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORKLife of Project:  
From FY 1983 To FY 1993  
Total U.S. Funding:  
Date Prepared: 8/18/88Project Title & Number: Highland Agricultural Development 520-0274

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTION
Program or Sector Goal: The broader objective to which this project contributes (A-1).  To enable the rural sector to make a greater contribution to national economic growth and improve rural living standards and incomes through increased production and successful marketing of agricultural products.	Measure of Goal Achievement (A-2)	(A-3)	Assumption for achieving goal targets (A-4)
	1) Increase in rural net incomes.	National indicators of production and marketing.	- GOG continues to place high priority on agricultural development supported by adequate levels of recurrent capital budget allocations.
	2) Increase in Commercial Agricultural production.	Internal/External Evaluations	- Policies supportive of private sector involvement/investment in agriculture.
	3) Increase in non-traditional production and marketing	National indicators of income.	- Changes in crops and/or production/marketing techniques will provide an increase in net income for the major portion of participants.

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PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Life of Project:  
From FY 1981 To FY 1991  
Total U.S. Funding:  
Date Prepared: 8/18/88

Project Title & Number: Highland Agricultural Development (520-0274)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTION
<p>Project Purpose: (B-1)</p> <p>Increase rural agricultural productivity and profitability. This will be accomplished through the development of diversified commercial agriculture, expanded emphasis on irrigated farm systems, and the transfer of production technology and marketing services to small farmers.</p>	<p>Conditions that will indicate purpose has been achieved: End of Project Status (B-2)</p> <p>1) Mini-irrigation sites adequately developed to produce profitable, marketable crops.</p> <p>2) Net increase in Agricultural production, with an emphasis on non-traditional crops.</p> <p>3) Net increase in income due to successful production and marketing of crops.</p>	<p>(B-3)</p> <p>1) a. Reports from institutions and field supervisors. b. Mid-term evaluation.</p> <p>2) Comparison of base line survey with impact evaluation carried out 3-5 years later, measuring production and income.</p> <p>3) See 2" above.</p>	<p>Assumption of achieving purpose: (B-4)</p> <p>- Small scale irrigation is a valid project focus.</p> <p>- Delivery of private and public sector service is adequate and timely.</p> <p>- TA and training is appropriate and timely.</p>

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PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Life of Project:  
From FY 1981 To FY 1991  
Total U.S. Funding: \_\_\_\_\_  
Date Prepared: 8/18/88

Project Title & Number: Highland Agricultural Development (520-0274)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTION
Project Outputs: (C-1)	Magnitude of Outputs: (C-2)	(C-3) Project reports, evaluations and related studies	Assumption for achieving outputs: (C-4)
1. Marketing information system	1. National and international coverage for domestic and export crops, including price, supply and transportation information.	- Contractor reports - Field observations - GOG/AID records	- Contractor inputs provided in a qualitative, timely manner  - Project plan implemented as scheduled  - Technologies developed are socially/economically appropriate to farmers.
2. Marketing/Processing	2. System of product grades, standards and measures which will facilitate data gathering and reporting for the information system and improve communication between buyers and sellers, and instill a market orientation among producers.		- GOG mandates respective institutions to support project goals and be accountable for resources needed  - System permits proper selection of trainees at all levels.

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Life of Project:  
From FY 1981 To FY 1991  
Total U.S. Funding: \_\_\_\_\_  
Date Prepared: 8/18/88

Project Title & Number: Highland Agricultural Development (250-0274)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTION
	<p>3. Pre-shipment program for exports which will result in reduced problems and rejections for Guatemalan exports; producer and exporter awareness of the need and value for internal controls on exports; standards for Guatemalan exports; an institutional responsibility for promoting and enforcing compliance with export standards; and, an established international reputation for quality for Guatemalan exports (long-term goal)</p> <p>4. Marketing and processing infrastructure established to serve principal production areas and expedite channeling of produce to domestic and export market.</p> <p>5. Private sector institutions effectively working in partnership with public agricultural institution to achieve component objectives.</p>		

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Life of Project  
From FY 1981 to FY 1991  
Total U.S. Funding  
Date Prepared: 8/18/88

Project Title & Number: Highland Agricultural Development (520-0274)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTION
3. Credit	<p>6. Increase commercial farming operations by small farmers through infrastructure, production and marketing credit funds, which will result in increased production and farmer earnings on a sustainable basis.</p> <p>7. A credit line item for private sector technical assistance that:</p> <ul style="list-style-type: none"><li>a. Generates a demand for private sector professionals;</li><li>b. Reduces the pressure on public sector institutions; and,</li><li>c. Completes the transition of the small farm to a small business.</li></ul>		
4. Irrigation Criteria	<p>8. Established priority site selection criteria applicable in the regions of the amended project.</p>		

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Life of Project:  
From FY 1981 To FY 1991  
Total U.S. Funding: \_\_\_\_\_  
Date Prepared: 8/18/88

Project Title & Number: Highland Agricultural Development (520-0274)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTION
3. Production	9. Efficient and profitable integrated production of traditional and non-traditional crops and livestock on irrigation sites consistent with local and export market opportunities.		
6. Management	10. Lean, streamlined management structure for allocating and utilizing project resources.		
7. Baseline data collection monitoring	11. Mechanism to provide adequate, objective project coverage to monitor progress and expenditures, social/economic benefits to clients and quality control of resources.		
8. Technology generation and transfer	12. Responsive to market demands, and production potential in the context of land and farmer capabilities, and sustainable commercial agriculture.		

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Life of Project:  
From FY 1981 to FY 1991  
Total U.S. Funding: \_\_\_\_\_  
Date Prepared: 8/18/88

Project Title & Number: Highland Agricultural Development (520-0774)

BRIEF SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTION
9. Irrigation/Natural resources	13. Based on priority selection criteria: a) Development of 270 small-scale irrigation systems encompassing 2,350 hectares, benefitting 6,000 rural families. b) Integrated soil conservation and agro-forestry activities on 270 small scale irrigation sites, involving 4,400 hectares and benefitting 27,000 rural families. c) Acceptable standards of performance in place and utilized by DICASA in the design, construction, implementation, maintenance and evaluation of small-scale irrigation activities. d) A multidisciplinary, institutionalized procedure to mobilize public and/or private resources to identify potential small irrigation projects at the regional level through the COMEDA'S.		

PROJECT DESIGN SUMMARY  
LOCAL FARMING

Life of Project  
From FY 1961 to FY 1991  
Total U.S. Funding  
Date Prepared: 4/18/88

Project Title & Number: Highland Agricultural Development (370-0774)

OBJECTIVE SUMMARY	OBJECTIVELY MEASURABLE INDICATORS	MEANS OF VERIFICATION	IMPACTS ASSUMPTION
13. Adaptive research and transfer of technology	14. Based on market oriented adaptive research a) Construction of 4 training/laboratory sites supporting diversification. b) Establishment of 3 technical data banks (one central, 2 regional) c) A simplified research system in use to solve site-specific production problems. d) 4 Regional COMEDA'S strengthened to support diversification on irrigated lands. e) Pest management activities fully operational in four regions.		

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PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Life of Project  
From FY 83 To FY 93  
Total U.S. Funding  
Date Prepared: 8/18/88

Project Title & Number Highland Agricultural Development (520-0274)

NAARRATIVE SUMMARY	OBJECTIVELY MEASURABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTION
Project Inputs (D-1)	Implementation Target (Type and Quality): (D-2)	(D-3)	Assumption for providing inputs (D-4)
1. A.I.D.			
a) Technical Assistance	1. 519 mos. LT 2. 68 mos. ST	- Contractor reports	- Project plan implemented as scheduled
b) Commodities	1. Vehicles \$ 598,500 2. Data processing \$767,000	- Project Agreements with accompanying FIC/T/C/P	- AID-GGG funds disbursed as planned.
- Project procurement and services de-	3. Field equipment & supplies \$100,000 4. Lab. & office equipment & supplies \$460,000 5. In-country construction \$260,000	- PL 480 reports	livered in reasonable time, frames.
c) Training	1. 48 mos. LT participants 2. 85 mos. ST participants 3. 5,230 in country participants, \$406,000	- Community organizations - Project disbursements and audit reports.	- GGG meets Conditions Precedent and Covenants - Contractor(s) meets acceptable TA performance criteria
d) Loan fund	Loan fund 2. Irr. Credit \$1,500,000 3. MBtp. Credit \$ 500,000		(social payments)\$1,692,000
e) Support Personnel	\$ 270,900		
f) Non-personnel support	\$ 565,000		

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Life of Project:  
From FY 83 To FY 93  
Total U.S. Funds: \$10,000,000  
Date Prepared: 6/18/88

Project Title & Number Highland Agricultural Development (520-0274)

SUBJECTIVE SUPPORT	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	INCIDENT ASSUMPTION
Project Inputs (D-1)	Implementation Target (Type and Quality): (D-2)	(D-3)	Assumption for providing inputs: (D-4)
g) In-country technical support	\$973,000		
h) Environment	\$100,000		
i) Evaluation & Audit	\$110,000		
j) Policy Advisor	\$110,000		
k) Inflation	\$1,200,000		
l) Contingencies	\$590,621		
2. O&M			
a) Staff salaries	\$11,554,450		
b) Operations-administration vehicle and equipment maintenance rent, supplies, etc.	\$2,744,210		
c) Inflation	\$552,340		

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AGENCY FOR INTERNATIONAL DEVELOPMENT  
WASHINGTON DC 20523

LAC-IEE-88-46

## ENVIRONMENTAL THRESHOLD DECISION

Project Location : Guatemala

Project Title : Highlands Agricultural  
Development Phase II

Project Number : 520-0274

Funding : \$15,000,000

Life of Project : Three years

IEE Prepared by : Audon Trujillo Jr.  
Alfred Naketsuna  
USAID/Guatemala

Recommended Threshold Decision : Positive Determination; An  
Environmental Assessment for the  
project will be carried out  
emphasizing the issues identified  
in the IEE

Bureau Threshold Decision : Concur with Recommendation

Comments : None

Copy to : Anthony J. Cauterucci, Director  
USAID/Guatemala

Copy to : Alfred Naketsuna  
Mission Environmental Officer,  
USAID/Guatemala

Copy to : Frank Zadroga, REMS/CEN  
ROCAP/San Jose

Copy to : Donald Boyd, LAC/DR/CEN

Copy to : IEE File

*James S. Hester* Date SEP 16 1988  
James S. Hester  
Chief Environmental Officer  
Bureau for Latin America  
and the Caribbean

## INITIAL ENVIRONMENTAL EXAMINATION

Project Location : Guatemala  
Project Title : Highland Agricultural  
Development Phase II  
Amendment (520-0274)  
Funding : \$15,000,000

### I. BACKGROUND

Since its initiation in 1983, the Highlands Agricultural Development Project (HADS) has utilized \$11.4 million in loan funds and \$2.1 million in grant funds to increase the agricultural productivity of the rural poor in the Highlands of Guatemala by improving their productive resource base. Currently the Mission is amending the Project through a project paper supplement to extend its PACD by three years to 9/30/93, provide an additional \$15,000,000 in grant funds, expand the Project activities and extend the Project area.

### II. PROJECT DESCRIPTION

The goal of the HADS Phase II Amendment is to enable the rural sector to make a greater contribution to national economic growth. The sub-goal is to improve rural incomes, equity and welfare through increased participation in the benefits of economic growth.

The Project purpose is to increase rural agricultural productivity and profitability through the development of diversified commercial agriculture, expanded emphasis on irrigated farm systems, and the provision of production technology transfer and marketing services to small farmers, particularly in the Highlands of Guatemala.

The Amendment proposes to undertake this effort by:

- 1) Expanding small-scale irrigation activities and integrating specific practices in watershed management, agro-forestry and soil and water conservation,
- 2) Strengthening the research and extension programs in developing and disseminating production technologies,
- 3) Improving a credit delivery system to serve small-scale farmers and/or farmer groups, and

- 4) Developing a commercially based agricultural marketing and processing system.

### III. POTENTIAL ENVIRONMENTAL CONSEQUENCES

As proposed, the HADS Phase II Amendment has both positive and negative environmental consequences. Soil and water conservation, agro-forestry and research/extension for rational agricultural production practices will create positive environmental impact. The Project will also promote an increased use of pesticides and clearing of land to maintain and construct rural access roads. These could lead to the degradation of potable water quality, the unmanaged cutting of forest lands and the destruction of other biological resources.

### IV. MAJOR ENVIRONMENTAL CONCERNS

Due to the Project's components involving credit, irrigation and rural roads, the following four areas of concern were identified by a team of environmental specialists:

- 1) Pesticide procurement and use,
- 2) Sustainability of land use and the management of properties in areas where irrigation systems are installed,
- 3) Conservation of communal natural resources (i.e. woodlots, forest reserves, water supply and water quality), and
- 4) Protection of biodiversity and tropical forest resources.

It was determined by this team that an Environmental Assessment would be necessary to identify mitigative measures and environmental management practices. These activities will combat potential negative impacts, and assist in sustaining land use productivity and related social welfare benefits.

A team of environmental specialists will be contracted to perform the Environmental Assessment, which will:

- 1) Identify and evaluate critical pest management and pesticide use, handling and disposal issues and problems for different crops and regions,

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- 2) Evaluate environmental, economic and social costs and benefits of the current trends in pesticide use,
- 3) Evaluate the environmental impact of small-scale irrigation, production credit, rural roads and the environmental implications of agricultural intensification activities in the HADS Project Amendment.
- 4) Evaluate institutional capabilities and constraints for effective management of natural resources and integrated pest management programs.

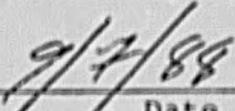
V. CONCLUSIONS AND RECOMMENDATIONS

According to Section 216.2(a) of the A.I.D. environmental procedures, environmental analysis/evaluation is required for substantive project amendments. Furthermore, significant environmental impacts could result from the procurement and use of pesticides, and the clearing and development of tropical forest lands. Both of these actions require the preparation of an Environmental Assessment (or Impact Statement) per 22 CFR Section 216.3(b) and FAA Section 118, respectively.

USAID/Guatemala will issue a Sequential Project Implementation Letter stating that funds under the amendment will not be disbursed for environmentally-related Project activities until the required Environmental Assessment has been approved by AID/LAC Chief Environmental Officer. USAID/Guatemala further agrees to modify Project Amendment implementation plans to incorporate recommended mitigative measures for the Project, in accordance with the approved Environmental Assessment.

Concurrence: \_\_\_\_\_

  
Anthony Cauterucci  
Mission Director

  
Date

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I. SUMMARY OVERVIEW \*

Guatemalan agriculture is dualistic, composed of two broad systems: the "commercial" and the "subsistence". Although farms in transition can be identified somewhere between these two categories, most operations fall clearly into one or the other.

The commercial system is usually embodied in large farms which have ready access to productive land, capital and input markets, and infrastructure support. These farms employ the most modern production techniques, given the international state of technical knowledge, international product prices, and relative costs and prices in Guatemala. Most of this system's production is exported, often through international commodity agreements. Product quality tends to be uniformly high in order to meet the demanding international market. This system's performance is highly dependent upon market-driven price relationships. It provides two-thirds of gross foreign exchange receipts and 80 percent of total direct taxes.

The subsistence system is comprised primarily of land-poor farmers and landless laborers who produce largely for their own consumption, with any small surpluses sold in nearby markets. Product quality, uniformity, and physical yields are very uneven, but usually poor. Production techniques are generally labor intensive because the opportunity cost of this numerically large group's labor is low, while the price of all other inputs (to them) is high. Access to productive land, broader product markets, and supportive infrastructure is limited to non-existent. The poorest producers in this subsistence system are trapped in an oppressive cycle of low productivity and incomes which is difficult to break. The value of their production is low because the goods they produce are economically inferior and are sold in nearby, low-income markets. Given low productivity, they cannot generate surpluses with which to finance improvements in their input mix or production methods. Additionally, capital and input markets are not available to this group of producers.

Although the conditions for accelerated development in the commercial system would appear to be much more favorable than those for the subsistence system, relatively low world market prices for export commodities, combined with ill-advised economic policies, have reduced the profitability of these key, export-oriented enterprises. Investment in the development and maintenance of productive agricultural lands and application of the latest production technologies have been reduced as well. However, significant increases in agricultural GDP over the

\* Sector Development Strategy, office of Rural Development (Report 025)  
USAID/Guatemala, February 1988

short run can be achieved principally through a more favorable investment environment for this commercial system, while medium- and long-run improvements can be attained through direct assistance to the subsistence system.

It is clear that if Guatemalan agriculture is to play the major role of which it is capable in accelerated economic development of the nation in the short as well as long run, the constraints in both groups must be addressed. The Mission's Agriculture Sector Development Strategy is designed to support a transition of subsistence farms into commercial operations while improving investment, efficiency, and income-generating opportunities for the already commercial enterprises.

In broad terms, the Mission's Agriculture Sector Development Strategy has two qualitative targets. First, it is aimed at a fuller use of existing productive capacity. This will be pursued by securing a stable policy environment and institutional support that will induce the already commercial group to achieve the production and efficiency of which it is presently capable. Establishment of this environment will also benefit the subsistence system since it is a necessary condition for maximum, market competitive production. It is not, however, a sufficient condition for this latter group. Consequently, the second target of the strategy is to expand productive capacity by enabling the populous subsistence group to produce efficiently and competitively through improved knowledge, skills, infrastructure, and resources, thereby permitting it to make the transition to commercial agriculture.

As discussed in Section IV, perhaps the most significant mechanism to transform subsistence agriculture into commercial agriculture is the production of internationally tradable commodities, or what might be termed "export agriculture". Recent A.I.D. experience in Guatemala in crop diversification combined with irrigation supports the view that with proper assistance, subsistence farmers can break the poverty cycle through nontraditional crop production in as little as three years.

Consequently, the theme of the Mission's Agriculture Sector Development Strategy is "commercial export agriculture" with an emphasis on irrigation and crop diversification. This will be undertaken through two mechanisms: (1) agriculture sector-specific policy dialogue and support in conjunction with ESF and PL 480 programs and (2) expanded and new projects using DA and local currency funding. Over the five-year strategy period (1988-1992) a target of \$200 million will be invested by A.I.D. to implement this Strategy. This will require a tight integration of DA, ESF and PL 480 funds to achieve maximum impact. These outlays, combined with considerable GOG and

other donor resources, will be required to help transform the agriculture sector and achieve at least the targeted 3.5 percent average annual growth in agricultural GDP beginning in 1990.

With respect to commercial agriculture, public policy and public infrastructure represent the areas of greatest potential payoff. Demand conditions are expected to be generally favorable. Accordingly, the Mission proposes to provide agriculture sector-specific assistance to work with the GOG in developing a propitious environment. The proposed policies to be addressed in this sector assistance (discussed in Section V) will be coordinated with the general ESF macro policy agenda and the PL480 Title I program. By enlisting the Ministry of Agriculture's cooperation and collaboration, a politically important constituency will be gained for appropriate policy reform. Concurrently, local currency funding will increase key budgetary allocations and improve public sector efficiency and services.

With respect to subsistence agriculture, efforts to promote movement into commercial export production will be supported by policy reform and institutional strengthening through the sector-specific assistance. Direct interventions on the supply side will be delivered through the more traditional DA project mode. The Mission will focus its agriculture sector project portfolio over the strategy period, concentrating on irrigated agriculture and crop diversification in the Highlands. These are the areas in which the payoff in terms of employment, incomes, and production is the quickest and most sustainable and in which the Mission has demonstrated capability and experience. The specific interventions related to this focus will be concentrated on:

- o expanding small- and medium-scale irrigation systems to facilitate crop diversification
- o broadening support to agricultural product marketing and processing especially for export
- o developing credit delivery mechanisms for small farmers and farmer groups to finance crop diversification
- o expanding agricultural technology development and transfer especially related to irrigated agriculture
- o improving natural resource management and use (soil conservation, agroforestry, and land distribution) especially related to key Highland watersheds

- o expanding rural infrastructure (roads and electrification) related to marketing and agroindustry.

Specific interventions in each area, both existing and proposed, are described in Section V. As indicated above, the project portfolio will continue to be focused geographically on the Highlands, where the majority of the subsistence agriculture group (mostly indigenous) is concentrated, although this focus will not prohibit the Mission from taking advantage of targets of opportunity in other areas on a limited and well-defined basis.

The Central American Initiative (CAI) sets a goal of 3.5 percent annual growth in the value of agricultural production for the region as a whole. Guatemala's climate and natural endowments are such that we believe the nation can possibly exceed that performance. Assuming that further major reduction of world market prices of traditional agricultural exports does not occur, that cooperation of the countries of the region proceeds toward more favorable trading relationships, and that the Strategy described in this paper is successfully implemented, it is safe to assume positive growth of export agriculture over the next few years. Also, assuming positive policy reforms and continued success in nontraditional exports, 4.5 percent per year growth in export agriculture is a plausible target for 1988-1990. Given this performance, transition (subsistence to commercial) agriculture would have to grow by just 3 percent (the present population growth rate) in order to reach the overall sector growth target of 3.5 percent. The transition agriculture target should be achievable by 1989. Thus, in 1990 the sector should be firmly onto a 3.5 percent aggregate growth path or, with improved intra-regional trade, possibly exceed that rate. Following 1992 it is expected that the growth rates of the two systems will be about the same and will remain at 3.5 percent for at least a decade.

## II. THE RURAL/AGRICULTURAL SETTING IN GUATEMALA

Agriculture has always played a major, if not dominant, role in the Guatemalan economy. Over the past twenty years, however, its role has become less important than economic forces alone would have led one to expect. During the 1970s the policy framework favored the development of import substituting sectors and trade within the Central American Common Market, at the expense of traditional agriculture. In the first half of the 1980s the sector was damaged by the volatile socio-political situation, and by ill-advised

macro-economic policies (e.g., over-valued exchange rate and discriminatory import duties). Low world market prices for Guatemala's principal exports also contributed to the sector's problems in the latter period. Still, the sector's contribution to GDP and employment has been relatively stable, around 25 and 50 percent, respectively. It is clear, therefore, that Guatemalan agriculture is not only important but resilient. Our guesstimate is that the agriculture sector's contribution to GDP could exceed the target of 3.5 percent annual growth within five years if the policy and project interventions described in this paper are fully implemented.

## ECONOMIC ANALYSIS

## PART II

The Phase II Amendment is expected to produce economic benefits in three important areas:

1. Increased production;
2. Improved marketing; and,
3. Additional employment

In view of the uncertainty which characterizes real-world project development, and the variability of farm and market data, the following analysis uses:

1. Aggregate production and price calculations;
2. Limited, specific crop combinations as representative of the production universe; and,
3. Coefficients from other studies as indicators of current parameters.

The calculations which follow depict the relative direction and magnitude of changes stimulated by the Phase II Project.

1. Production Related Income

- a. Short Cycle Crop Production

Project activities will bring about increases in farmer income due to two modifications in production:

- Additional crop cycles through the introduction of irrigation; and,
- Higher valued crop combinations made feasible through improved market access.

Irrigation in the Guatemalan environment, which has a pronounced dry season during several months of the year, permits multiple cropping for most geographic areas and most crops. In the farm models presented it is assumed that all crops, except basic grains (esp. corn and wheat) in the highlands, can be double cropped if irrigation is available. In fact, many of the traditional and non-traditional vegetables can be triple cropped; an option not considered in the calculations.

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It would be extremely presumptuous, and probably equally misleading and/or erroneous, to attempt to predict which crop combinations will eventually occupy the irrigated areas created under the project; therefore, three crop groups are used to approximate the final outcome:

- Basic grains (eg. corn, beans and wheat)
- Traditional vegetables (eg. beets, onions, carrots, cabbage and potatoes); and,
- Non-traditional vegetables (eg. snow peas, lettuce and peppers).

The following table indicates the economic data for each crop group:

CROP GROUP*	COSTS AND RETURNS IN CROP PRODUCTION			
	R E G I O N			
	I	V	VI	VII
	(US\$/HA/CYCLE)			
Basic Grains				
- Cost	369	380	352	310
- Sales	484	566	566	486
- Net	115	186	214	176
Traditional Vegetables				
- Cost	1,674	1,114	971	1,413
- Sales	2,545	1,728	1,588	2,032
- Net	871	614	617	618
Non-Traditional Vegetables				
- Cost	1,675	1,675		
- Sales	3,014	3,014		
- Net	1,339	1,339		

\* Cost and sales information from BANDESA estimates, by region.

These three groups were used to represent the different production possibilities with and without irrigation. A further assumption was made regarding cropping cycles which restricted Basic Grains in Regions I and V to one cycle per year due to low temperatures, and also that without irrigation only one cycle of any crop can be harvested. It is realized that rain fed double cropping is possible in some areas, but not as a general rule. Underestimation of non-irrigated production due to this assumption is offset by not considering more than two cycles of any crop under irrigation; although several

common crops have growing cycles of under 120 days in many areas. The following table shows the annual net income, calculating the double cropping costs and returns.

ANNUAL NET INCOME (US\$ / Ha)				
CROP GROUP	R E G I O N			
	I	V	VI	VII
Basic Grains*	115	186	428	352
Traditional Vegetables**	1,743	1,228	1,234	1,237
Non-Traditional Vegetables	2,679	2,679	--	--

\* Regions I and V - one cycle per year  
Regions VI and VII - two cycles per year

\*\* The heretofore "Non-Traditional" crops (eg. melons, tomatoes and cucumbers) have been included as traditional vegetables because of similar cost and income structures, as well as the experience and frequency in their production.

In order to simulate the changes brought about by the introduction of irrigation three double cropping models were assumed, and compared with a stylized control situation which represents a basic production unit before irrigation. These models and the control are shown in the following table:

CROP COMBINATION MODELS				
MODELS*	R E G I O N			
	I	V	VI	VII
ANNUAL NET INCOME (US\$/HA)				
A. 70% B.G.	80	130	299	246
30% T.V.	522	368	370	371
Total	602	498	669	617
B. 50% B.G.	57	93	214	176
50% T.V.	871	614	617	618
Total	928	707	831	794

CROP COMBINATION MODELS

MODELS*	R E G I O N			
	I	V	VI	VII
	ANNUAL NET INCOME (US\$/HA)			
C. 50% B.G.**	57	93		
20% T.V.	348	245	--	--
30% N/T.V.	803	803		
Total	1,208	1,141		
Control 90% B.G.**	103	167	192	158
Model 10% T.V.	87	61	61	61
Total	190	228	253	219

- \* B.G. = Basic Grains  
T.V. = Traditional Vegetables  
N/TV = Non-Traditional Vegetables  
\*\* Crop combinations described in IFPRI's study of Cuatro Pinos.

Because of a lack of information there was no allowance made for increases in per hectare yields, which in fact are evident, when farmers enter into a non-basic grains production system. (As documented in the International Food and Policy Research Institute's study of Cuatro Pinos, May 1987) The increases in income indicated above are due strictly to double cropping and the change in crop mix permitted by irrigation.

When examined on a per farm basis it is seen that the introduction of irrigation brings about significant improvement in family incomes. Using the average farm size found on mini-irrigation sites already established in Regions I, V, VI and VII, the following table indicates the income levels before and after irrigation, in terms of the crop models indicated above:

FARM INCOME LEVELS (US\$ / Year)				
	R E G I O N			
	I	V	VI	VII
Average Farm Size (Has)	.33	.47	1.12	.50
Net Income/Farm				
Model A	199	234	749	308
B	306	332	930	397
C	398	536		
Control	62	107	284	110

The percentage increase of net farm incomes with the illustrative model combination over the control, or basic mix, ranges from a low of 119% for model A in Region V to 542% for Model C in Region I. While the increases are substantial, it is easily seen that the limiting factors to achieving higher income levels are farm size, and a strong tendency to maintain a high percentage of land dedicated to basic grains (50%) in order to satisfy the desire to gain some measure of food security.

b. Fruit Crop Production

Based on the experience gained from the Diversification Project (520-0255) it seems evident that major production changes in fruit crops are still in the future. Work has just begun on the long term research needed to introduce new plant materials, and much extension and market improvement will be required to make significant investment in chemical inputs a common practice. To date, major emphasis has been given to orchard maintenance and rehabilitation, with primary attention given to pruning. On the strength of the last two years of the previous project, it was allowed that similar activities would be continued during the life of Phase II.

There is little doubt that the benefits to orchard crops are understated; but, without more concrete evidence, it is assumed that only a moderate yearly rehabilitation

effort will be undertaken . While the overall impact of this program is small, the relative returns to rehabilitation practices are high. An investment in \$200/hectare, principally labor, will yield a net increase of about \$350 in apple production.

c. Livestock Production

The focus on commercial agriculture for the Phase II Amendment has given a revised orientation to the livestock element, as compared to that in the Diversification Project. Three activities have been identified on the basis of experience as being profitable and feasible within the context of the new project:

- Egg production;
- Sheep fattening; and,
- Dairy production.

As in the case of the short cycle crop analysis these representative model activities are used to describe sector potential. Aside from the emphasis place on profitability in choosing these activities, consideration was given to improving the productivity of the extension agents who provide technical assistance to livestock producers. Within the context of the project, and, more generally, within that of the public agricultural sector, the primary limiting factor in the modernization of agriculture is the scarcity of human resources. Accepting this premise, livestock production units were conceived so as to take full advantage of the extension agent visits. The following are the representative livestock model units, and resulting economic characteristics.

ACTIVITY	UNIT SIZE	COST	SALES US\$/YR.	NET INCOME
1. Egg Production	300 Layers	4,600	6,200	1,600
2. Sheep Fattening	80 Sheep	800	1,280	400
3. Dairy Production	10 COWS	8,200	9,900	1,700

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Both the sheep and dairy activities will depend on the benefits of irrigation to be able to sustain production during the dry season. Egg production was a successful enterprise under 520-0255, and is an excellent complement to other activities, in that it occupies little land, and uses labor from sources with low opportunity costs (ie. women and children).

2. Market Related Income

The market orientation of the Phase II Amendment will complement production gains by exposing the producer to new market alternatives and marketing techniques which should result in higher quality produce and lower post-harvest losses. Though these benefits are demonstrated here, they will not be incorporated into the costs and benefits calculations, which will serve to underestimate benefits.

a. Market Alternatives

Traditionally the small highland producer has sold his output at the farm gate or in the local market. Though these may ultimately prove to be his best options, there are other markets to which he should look to evaluate comparative benefits. As one example of the process through which the farmer should go before accepting the farm gate or local price, one can examine the following set of data from 1987:

----- COMPARATIVE PRICES (ANNUAL) 1987 -----			
Crop	Farm Gate (Region I)	Guatemala (Terminal Mkt)	Difference
-----			
-- Q/qq --			
1. Green Onions	24.03	33.17	9.14
2. Carrots	25.38	32.12	6.74
3. Potatoes	22.88	26.08	3.20
4. Cabbage	10.30	12.45	2.15

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The cost of transporting 100 pounds from the production area to Guatemala City is about Q2.15, although this obviously varies with volume and location. Subtracting the transport cost from the difference between farm gate and terminal market prices will give an indication of the additional earnings possible for the farmers who sell in Guatemala. For the potato and cabbage farmer, they probably did well to sell at the farm gate, on the average. For the others, they may well have done better in 1987 to transport and sell in Guatemala City. This would represent a transfer of income from middlemen to the small farmer.

However, the farmer does not, and should not, sell according to yearly price averages. The information system to be established by the project will give him the opportunity to make sales decisions on a daily basis. While daily figures are not readily available at this time, a second look at the 1987 figures will be illustrative of the importance of timely decision making. The following table uses the same 1987 data source (INDECA), but presents the market prices for those months in which the greatest difference between farm gate and terminal market prices occurred.

----- COMPARATIVE PRICES 1987 (MONTHLY) -----				
Crop	Month	Farm Gate	Guatemala	Difference
-----				
-- Q/qq --				
1. Green Onions	June	31.88	49.02	17.14
2. Carrots	January	27.39	35.75	8.36
3. Potatoes	May	21.75	28.40	6.65
4. Cabbage	June	8.25	15.73	7.48

Using the same Q2.15/quintal transport cost from the farm to Guatemala, it is readily seen that agricultural price changes are of sufficient magnitude to radically affect profits and require the commercial producer to be constantly informed of his market options.

b. Marketing Loss Reduction

In order to compensate for anticipated losses due to damage, spoilage and weight loss, the wholesaler pays less to the producer and charges more to the consumer; thus shifting the incidence of the losses. (Observations from the Interamerican Development Bank's project for the new Guatemala terminal market). Much of the loss incurred presently at the terminal market results from inadequate storage facilities and handling at the market itself. The study for the IDB terminal market project estimates the following current and projected loss rates (ie. before and after the project).

LOSS RATES AT THE TERMINAL MARKET

<u>CROP GROUP</u>	<u>PRESENT MARKET</u>	<u>PROPOSED MARKET</u>
1. Traditional Vegetables	7.8%	3.5%
2. Non Traditional Vegetables	11.0%	4.5%

By the fifth year of the new terminal market operation it is estimated that approximately 12,000 metric tons of perishables will be saved through improved marketing facilities and practices.

It is logical to believe that the loss rates experienced at the terminal market are indicative of those also occurring elsewhere in the present marketing system. Adequate product selection, packing and transport could eliminate a large portion of current losses. Project emphasis on quality will provide guidance in practices to reduce marketing losses suffered directly by the farmer in selling his product, or that passed back to him by the wholesaler, to cover expected losses.

Specific reasons for product damage stated in the IDB study include:

1. Stacking damage,
2. Spoilage due to inadequate air circulation, and
3. Damage due to dehydration.

All of the above can be ameliorated by the initial packing and handling when the produce leaves the farm, or initial collection center. If improvements are made at this stage, the producer would receive a part of the savings.

### 3. Employment Generation

In an attempt to be as accurate as possible in measuring the employment effects of the project, those jobs created in the public sector, USAID and technical assistance, as well as their multiplier effects, should probably be included in any calculation; but, they will be left out. The estimated direct employment creation and indirect job stimulation provide a reasonably strong impact by themselves. The following table summarizes the the estimated employment effect of the project:

#### NET EMPLOYMENT GENERATION (Man-years)

	<u>5 yr*</u>	<u>10 yr*</u>	<u>15 year*</u>
<u>Region I &amp; II</u>			
Direct	1024	1024	1024
Indirect		<u>1536</u>	<u>4813</u>
Sub-Total	<u>1024</u>	2560	5837
<u>Regions VI &amp; VII</u>			
Direct	1352	1352	1352
Indirect		<u>2029</u>	<u>6354</u>
Sub-Total	<u>1352</u>	3381	7706
Total Direct	2376		
Total Indirect		3565	11167
Total Employment			
Base Farmer	1292	1292	1292
Net Direct	2376	2376	2376
Net Indirect		<u>3565</u>	<u>11167</u>
GRAND TOTAL	3668	7233	14835

\* Time elapsed from Project Day One.

The labor requirements for each model that are shown in the following table, and the increase in required labor input, as indicated, provide the basis for calculating the net direct employment generation.

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LABOR REQUIREMENTS (Man-year/Ha).

CROP ACTIVITY	R E G I O N			
	I*	V*	VI	VII
Control Model	.55	.55	.62	.62
Model A	.76	.76	.82	.82
B	.97	.97	1.01	1.01
C	1.61	1.61	-.	-.--
Increase Over Control				
Model A	.21	.21	1.02	1.02
B	.42	.42	1.40	1.40
C	1.06	1.06	-.--	-.--

\* Based on IFPRI's study on Cuatro Pinos

There are three components of the GRAND TOTAL (see Net Employment Generation table) of employment generated by project:

1. Base farmer - This group is comprised of the 5,940 farmers who will occupy the 2,350 irrigated hectares financed by the project. The present full time employment equivalent for these farmers given their present activities, based on labor requirements for the CONTROL MODEL of .55 man-years/ha, is 1,292 man-years.
2. Net direct employment - The jobs included in this category are those which are created due to double cropping and the change to new crop combinations. There are 2,376 man-years of work in this group, which includes both additional family labor and hired labor, over and above that required to produce on the CONTROL MODEL.

(Both the Base Farmer and Net Direct Employment are generated during the life of the project, and will exist at the end of year five).

3. Net indirect employment - In a study done by the National Planning Council (SEGEPLAN) in May 1986 (Metodología para Evaluar y Priorizar el Impacto Ocupacional de la Inversión Pública) it was indicated that irrigation projects indirectly create employment in the ratio of (Direct : Indirect) 1 : 1.5 at five years after project completion, and 1 : 4.7 after ten years have passed. While applying ratios calculated within one context to another at best gives a rough estimate, no better methodology was available at the time this

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analysis was carried out. Applying these rates to the Net Direct Employment figures in the previous table, a rough estimate of the net indirect employment is derived.

Total employment associated with the project at a point 15 years after it is begun would be the sum of the above three categories. While it is recognized that the BASE FARMER represents employment opportunities available without the project, in man/workday terms, it is included here to reflect that the returns to the farmer for the same workday are much higher. Certainly, the net earnings of the farmer for a full day of work in the CONTROL MODEL hardly qualify that activity as one of full employment given the low return to his labor, and in no case does a new activity produce less than double the basic production unit net income.

4. Economic Measures

There will be two indicators used to measure the economic viability of the Phase II Amendment:

- a) Benefit/Cost ratio,
- b) Internal Rate of Return (IRR),

In order to simulate a logical expansion of irrigation projects in the four regions, emphasis was given to Regions I and V in the earlier years of the project. By year four all regions were treated equally; however, the end result is that the total area under irrigation due to the project remain skewed toward Regions I and V. The following table demonstrates the progression of the project into Regions VI and VII, and also shows the distribution of the acumulative five year totals.

REGION	Y E A R				
	1	2	3	4	5
	- 3 -				
	HAS (NEW)				
I	188	188	141	117	117
V	141	141	117	117	117
VI	47	47	70	118	118
VII	94	94	142	118	118
TOTAL	470	470	470	470	470

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REGION	Y E A R				
	1	2	3	4	5
	- % -				
	HAS (NEW)				
I	188	188	141	117	117
V	141	141	117	117	117
VI	47	47	70	118	118
VII	<u>94</u>	<u>94</u>	<u>142</u>	<u>118</u>	<u>118</u>
TOTAL	470	470	470	470	470
	HAS (CUMULATIVE)				
I	188	376	517	634	751 (32%)
V	141	282	399	516	633 (27%)
VI	47	94	164	282	400 (17%)
VII	<u>94</u>	<u>188</u>	<u>330</u>	<u>448</u>	<u>566 (24%)</u>
TOTAL	470	940	1410	1880	2350

Calculations were made regarding costs and returns for each region. The cropping mix that was used was as follows:

50% a) Regions I and V Model B  
Model C 50%

This resulted in a crop composition of:

Basic Grains 50%  
Traditional Vegetables 35%  
Non-Traditional Vegetables 15%

100% b) Regions VI and VII Model B

Livestock and fruit activities, for want of another indicator, were distributed evenly over the five year period. It was assumed that the following number of units would be financed:

Fruit Crops 200 has  
Livestock  
- Dairy production 30 units  
- Egg production 80 units  
- Sheep fattening 160 units

a & b) Benefit/Cost and IRR

- Based upon the information indicated earlier (and the investment schedule from the Financial Summary) the Benefit/Cost ratio and IRR were calculated. The following table shows the projections for the first ten years of the project. The value of the Benefit/Cost ratio was 1.09, when calculated at the end of the fifteenth year with a discount rate of 15%. Similarly, over the same period the IRR was 19.95%.

5. Summary

The various indicators used to measure the economic viability of the project place it in a favorable light. Many of the expected benefits from the project from improved marketing and more intensive production were not included in the overall evaluation due to the high level of subjectivity required for their estimation, thus causing the total benefits to be understated.

nevertheless, two conclusions are rather clear:

1. the project has high medium and long run pay-off potential; and,
2. farm size is the critical factor in determining the income level of each farm family.

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SUMMARY OF PROJECT BENEFITS AND COSTS

ACTIVITY	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
<b>SHORT CYCLE CROPS</b>										
Income:	\$1,762	\$3,401	\$3,273	\$5,775	\$6,950	\$6,950	\$6,950	\$6,950	\$6,950	\$6,950
Costs:	\$1,069	\$1,581	\$1,967	\$2,341	\$2,715	\$2,715	\$2,715	\$2,715	\$2,715	\$2,715
<b>FRUIT CROPS</b>										
Income:	\$22	\$43	\$65	\$86	\$108	\$108	\$108	\$108	\$108	\$108
Costs:	\$8	\$16	\$24	\$32	\$40	\$40	\$40	\$40	\$40	\$40
<b>LIVESTOCK</b>										
Income:	\$200	\$397	\$599	\$798	\$990	\$990	\$998	\$998	\$998	\$998
Costs:	\$152	\$285	\$455	\$606	\$758	\$758	\$758	\$758	\$758	\$758
<b>INVESTMENT</b>										
USAID:	\$1,810	\$2,641	\$3,081	\$2,029	\$1,081	\$0	\$0	\$0	\$0	\$0
GOV:	\$2,301	\$7,326	\$2,341	\$2,348	\$2,355	\$350	\$350	\$350	\$350	\$350
<b>TOTALS:</b>										
REVENUE	\$1,904	\$3,843	\$3,937	\$6,659	\$8,056	\$8,056	\$8,056	\$8,056	\$8,056	\$8,056
COSTS & INVESTMENT	\$5,370	\$9,967	\$7,868	\$7,756	\$6,949	\$3,063	\$3,063	\$3,063	\$3,063	\$3,063
NET BENEFIT	(\$3,466)	(\$6,124)	(\$3,931)	(\$1,097)	\$1,107	\$4,993	\$4,993	\$4,993	\$4,993	\$4,993
IRR (15 YEARS)	19.5%									
DISCOUNT RATE	15.00%									
BENEFIT/COST	1.09									

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## SOCIAL SOUNDNESS ASSESSMENT

## 1. THE GEOGRAPHIC AND SOCIAL SETTING

The geographic, social, and cultural terrain to be covered by this project is broad and diverse stretching from the cool, mountainous country along Guatemala's western Mexican border, through the temperate central regions near the capital, to the semi-arid hills of the Honduras frontier. Project activities will encompass virtually all of the country's highland areas. In general, in proceeding eastward from San Marcos and Huehuetenango:

- Altitudes decline from over 12,000 feet to less than 3000 feet;
- The proportion of Indian to Non-Indian farmers declines;
- Farms are fewer and larger;
- Urban concentrations and associated communications and commercial activities increase; and,
- Commercial farming and the proportion of each farm's output marketed rise.

All of these changes have implications for family and community structures encountered in the sites selected under the project. Superimposed on them is the diversity of the project components themselves, any one of which is likely to affect--and be affected by--social relationships among the targetted farmers: new crops and altered cultivation practices; increased use of unconventional inputs and credit; greater involvement in national and international markets; changed consumption patterns; and more sophisticated community organizations to manage production, irrigation and soil conservation.

For these reasons, it is especially important that managers, coordinators, and directors be mindful that a technical solution that "works" in one location might not be appropriate for another; an economic strategy beneficial for one group might be harmful for a group elsewhere; innovations rapidly diffused in a given community now may be unacceptable or less appropriate in the future. Where cultural values and social structures vary widely,

economic and technical criteria alone should not govern diversification strategies.

This assessment addresses the following areas:

- Characteristics of the target populations: group profiles and motivating factors;
- Expected benefits;
- Role of women;
- Organizational structures and spread effects; and,
- Constraints.

Systematically collected, detailed information is sparse in Guatemala. Much of this assessment rests upon accumulated observations made by private social science researchers and long-time Guatemalan and USAID development professionals. These are reinforced by evidence from recent evaluations of the USAID Small Farmer Diversification Project and of the outcome of introducing non-traditional export crops on small farms in the central highlands cooperative of "Cuatro Pinos".

## 2. DIRECT BENEFICIARIES: SOME TYPICAL PROFILES

The target group for this project will be rural households cultivating approximately 7 hectares or less. These constitute "small farm families", approximately 88% of all farms in Guatemala. In attempting to assess potential sociocultural impacts, a number of general facts must be borne in mind:

- Many of Guatemala's highland small farm families are "Indians"; a heterogeneous ethnic group socially and culturally distinct from the hispanic "Ladino" population prevalent in the more urbanized parts of the country. Indian farmers predominate the western highlands, ladino farmers the eastern.
- While most small farm families employ traditional technologies to produce subsistence commodities (e.g., corn, beans, and squash), considerable variation in these, in household characteristics, and in community interrelationships exist within Indian and Ladino categories across the project area.
- The focus of the project is not upon the "poorest-of-the-poor" per se. Limited resources rapidly deteriorating economic circumstances, and an uncertain sociopolitical climate mandate a focus upon those small farmers and small farm communities with

established water and soil management infrastructure, with initial willingness to participate, and with good potential for early commercial success.

- Although participating farmers will thus be less "traditionally conditioned" than the "poorest-of-the-poor", they will nevertheless be undertaking a multitude of risky new tasks, with implications for intra-household relationships, motivations, modes of decision making, and socioeconomic relationships with the outside world.

These facts dictate discrimination in assessments of possible socioeconomic impacts and flexibility in the design of local project strategies based upon them. While detailed descriptions of all distinct variations in small Guatemalan households would not be appropriate here, brief profiles are sketched of the three of broad categories most likely to be encountered among project participants: Traditional Indian farmers, Transitional Indian farmers, and Ladino farmers.

a. Small Farmers in General

Traditional and transitional Indian and Ladino farmers, while possessing distinct sociocultural traits, share common attributes imposed upon them by poverty and external circumstances.

- With limited land and an average family size of six or seven, the bulk of their agricultural production is centered upon cheaply produced staples (e.g. corn, beans, squash) for home consumption.
- They seek to earn at least some cash income (e.g. \$500 per year per household) for inputs, food, and other commodities not produced at home.
- They produce some staples and some non-traditional crops (e.g. vegetables) for sale and may engage in other kinds of income-earning activities (e.g. artisanry, off-farm labor).
- While they are averse to risk, small Guatemalan farmers, Indian and Ladino alike, have shown a willingness to try new crops and technologies which do not compromise their ability to continue producing the basic staples and which do not threaten their land tenure arrangement.

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- They are acutely aware of what other farmers in their communities are doing and are receptive to working within the framework of communal groups, informal associations, or cooperatives.

b. Traditional Indian Farmers

The Indian-Ladino distinction is cultural rather than racial. Differences in dress, language, family/community power structures, religious practices, and group self-image collectively define who is "Indian" and who is not, and powerfully condition individual attitudes, perceptions, and modes of thought. Finally, they influence the Indian farmer's position within the broader context of Guatemalan society and have historically placed severe limits to the options available to him to improve his family's circumstances.

While it is always dangerous to generalize about a group as diverse as Guatemala's Indian farmers, the following characteristics distinguish them from their non-Indian counterparts in ways with implications for project strategies:

- Economic "progress", social status, and political influence/power are not primary motivating factors in traditional Indian communities. Filling one's expected roles within a complex matrix of religious and cultural tradition and allegiance to family, community, and local ethnic groups (e.g. Quiche, Cakchiquel, Mam) takes precedence, and govern a broad spectrum of activities ranging from details of cropping practices, to religious ritual, to serving time as town mayor (alcalde) or overseer (Regidor). It is considered pretentious to attempt to "rise above" one's neighbors in matters of wealth or social standing.
- "Time" is not viewed as a linear stream through which one "improves oneself". The past, present, and future are segments of a recurring cycle reenforced by religious and secular rituals at appropriate points during the year. Within this cycle, it is important for the individual to stay where he or she is within the well-ordered structure of community social and cultural values.
- Most traditional Indian communities speak one of the dozen or more surviving Mayan dialects (e.g.

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Quiche, Kekchi, Mam, Cakchiquel). Some of these are similar, others quite distinct. In most traditional areas to be served by the project Spanish is a "Lingua Franca", but few Indian women speak it, and many men and women are illiterate.

- Even remoter Indian communities are aware of changes in the "outside world", including alternative ways of farming. Such novelties as radio bicycles have broadened Indians' conceptual horizons, and an erosion of tradition is visible to some degree virtually everywhere.
- There still exists strong pride in one's community and traditions, and resentment (usually subdued but increasingly overt) over Ladino condescension and often ill-disguised contempt for Indian ways. ("Indio" is a commonly used term to denote someone who is backward, stupid, or lazy.)
- Despite Indians' disdain for making money and for material accumulation *per se*, the farmer and his wife are hard workers and astute bargainers when they are in need of money for specific purposes. Their decisions are limited by the information available to them and heavily influenced by aversion to risk. Their attachment to traditional crops and family custom represents a form of insurance against the caprices of an external world over which they have little control.
- Distrust of non-Indians, including "Transitional Indians" described below, is profound in many areas. Lacking a "western" sense of "class consciousness" and essentially pacific, most Guatemalan Indian groups adopt a passive posture in dealing with outsiders, often signalling agreement and acceptance over issues and ideas where none actually exists.

These seven characteristics are far from exhaustive, nor do they equally characterize all Indian groups. They do underscore the vital importance of strategies and the selection of innovations acceptable to the farmer which do not depart radically from the framework of his cultural values, at least early in the project. One factor working powerfully to alter traditional ways of thinking is that with rapidly rising population and the lack of primogeniture, Indian farms are becoming inexorably smaller. This

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is forced many farmers to seek more productive technologies simply to stay where they are in the traditional scheme of things. In the process, their conception of the "scheme of things" itself has begun to change. This has given rise to the phenomenon of the "Transitional" Indian farm family.

c. Transitional Indian Farmers

These are Indian farmers who, for one reason or another, have begun to abandon the characteristics collectively defining "Indianness" previously described. Such farmers and their families can be found scattered even among the mainly traditional Indian areas of the western highlands. They cluster about the larger towns, however, and their relative numbers increase from west to east as one approaches the Capital City, where fully "Ladinoized" farmers increasingly predominate. In many communities men have adopted western (Ladino) jeans, shirts, and straw hats; in some areas the local Mayan dialect is giving way to Spanish as the language spoken in the home; and, in rural towns and even in cities as large as Quetzaltenango, wives of Indian community farmers are managers of small stores selling commodities other than strictly agricultural produce. More importantly, Indian farmers actively seeking linkages with the economic system beyond their local communities. Such farmers are more willing to risk credit for such purchased inputs as fertilizers, pesticides, and improved seeds; to join associations or cooperatives; to pay closer attention to patterns of price changes for specific crops, both locally and outside their communities; and to experiment with unorthodox crop and livestock combinations, simple irrigation and soil conservation practices. While transitional Indian farmers, in short, retain vestiges of their old ways, they are acquiring characteristics more often associated with Ladino farmers.

d. Ladino Farmers

A "Ladino" may be directly descended from Hispanic colonial forebearers or one generation removed from a fully "Indian" household. Either way, he or she wears "modern" clothing at all times, uses the Spanish language exclusively, and shares many of the mainstream social, economic, and religious norms of urban Guatemala.

As suggested earlier, there is no clear dividing line between "Indianness" from "non-Indianness" in Guatemala. In this respect, a Ladino farmer represents an end point of a continuum of characteristics separating him from the traditional Indian farmer. The difference between transitional Indian and Ladino farmers is especially fuzzy. Nevertheless, the latter do have distinct attributes meriting attention:

- They are more likely to be literate and to have had at least three years of formal education;
- Since Ladino farmers cluster in the more cosmopolitan eastern parts of the highlands, they are more generally aware of commercial opportunities and of changes in agricultural technologies;
- While transitional Indian farmers often adopt specific elements of Ladino culture and technology for specific purposes, the Ladino farmer, by virtue of his greater literacy, higher education level, and more cosmopolitan setting, is more likely to have a grasp of the context of such elements and thus an ability to apply them to a wider range of activities.
- The Ladino farmer does not view time as an endlessly repeating cycle; and, he is less likely to be fatalistic in seeing opportunities for his family's material advancement.
- Other things equal, he is generally less risk averse and may be more willing to use credit.

These are very broad generalizations, with many exceptions. Poor "Ladino" farmers living in predominately Indian areas often closely resemble their Indian neighbors in agricultural practices and lifestyles; as do transitional Indians living in predominantly Ladino areas. There is democracy as well as tyranny in poverty; nevertheless, because he is Ladino even the smallest Ladino farmer has advantages in a Ladino dominated society. An obvious example is greater ease of interaction with credit and training systems organized around "western" concepts and values.

### 3. EXPECTED BENEFITS

Immediate benefits to small farm households will be increased employment and net incomes from production and sale of higher value, labor intensive crop and livestock commodities. Provided that incomes from sales rise faster than cost of production, households will have more cash than before, which can be used to augment consumption purchases in the market, reinvested in the farm itself, or saved. Alternatively, the family will be able to consume a greater quantity and variety its own production. In a broader sense, these benefits should contribute to the family's overall health and nutritional status, its margin of security against harder times, and most importantly, its range of options and degree of independence.

Traditional Indian farmers, by virtue of participating in the project, will become less traditional. Whether or not this represents a benefit or a cost in terms of the Indian farmer's point of view is questionable, and would depend upon why he chooses to participate. Certainly, adoption of diversification and the necessary non-Indian modes of thinking about credit, planning, and material accumulation, represent a commitment to survival in the face of present demographic trends in Guatemala. While the older generation may embrace diversification and the interdependent money economy with reluctance and view its "benefits" as mixed blessings, its children are likely to see these things more positively.

Less directly, small farm households will be healthier, better housed and clothed and more educated. Neighboring establishments offering goods and services will also benefit from farmers' increased spending. To the degree that farmers save part of their cash income in banks and local credit institutions, diversification will contribute to an accumulation of rural capital which can be mobilized to support further development efforts.

It has been demonstrated that diversification results in fuller family employment, which, in turn, leads to less seasonal migration and the need to seek day labor on larger local farms and in towns. It also produces a more equitable return per unit of the farmer's own labor as he becomes, to a greater degree, his own employer. Farm income will be spread more evenly throughout the year, with cash more readily at hand for regular expenses. Better nutrition and greater access to health services mean a family able to work longer and more effectively,

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with fewer lost work days, and more time will be available for leisure and schooling.

#### 4. ROLE OF WOMEN

Evidence from recent diversification projects in Guatemala suggests dramatic changes in the nature of, and returns to women's roles on small farms. Traditionally, farm wives, Indian and Ladino alike, perform most of the marketing activities, oversee the farm animals and fowl, prepare and distribute the family meals, and coordinate most household activities, including management of the family garden. With diversification into a greater variety of fruits, vegetables, and animals, these tasks can be expected to intensify. Sorting, washing, and trimming--essential first steps in fruit and vegetable processing--almost certainly will be done by women. Marketing activities will likewise become more diverse and of necessity more sophisticated. As labor requirements rise, more women may be found working in the fields at certain times of the year, especially engaged in tasks requiring more agility than brute strength. Improvements in animal sanitation, breeding, nutrition, and selection will increase returns to women's care of the household livestock.

As her contribution to livestock, cropping, and processing income rises, and as she acquires a greater income of her own, the farm wife will be freer to make decisions about food purchases and distribution within the household. Studies show that levels of income earned by women correlate more strongly with the state of the household's nutrition than family income generally.

A greater availability of vitamin rich fruits and vegetables and protein-rich milk and eggs on small diversifying farms should improve the traditionally lamentable status of young children and lactating mothers, especially if diversified production is accompanied by education leading to increased on-farm consumption and to improved food storage and preparation.

Finally, the increased incomes and opportunities for leisure brought about by diversification will lead to more opportunities for girls and young women to acquire literacy and fluency in the Spanish language and to obtain more schooling generally. These, in turn, should contribute to a larger women's participation in management of the farm as a whole and to greater possibilities for non-farm activities. Improvements in women's status in

traditionally male-dominated Indian and Ladino societies should follow in the longer term.

5. ORGANIZATIONAL STRUCTURES AND SPREAD EFFECTS

Small farmers in Guatemala closely observe what their neighbors are doing. Traditional Indian farmers in need of cash readily try innovations which hold a promise of profit. There is ample evidence of strong demonstration effects even in the case of such sophisticated activities as hillside terracing and construction of gravity flow irrigation systems.

Mutual support is common among small farmers in Indian and Ladino communities. Where formal cooperatives do not exist farmers frequently consult one another, and news of successful innovations travels fast. Every community has at least a few enterprising individuals willing to take the lead in adoption. The success of DIGESA's "Guia Agricola" program attests to the effectiveness of able, respected farmers as promoters of change within their own communities.

The likelihood of acceptance and successful diffusion is enhanced by the fact that few of the crop and livestock technologies to be promoted under the project are entirely unknown to the targetted farmers. Lack of knowledge has been less constraining to diffusion than poverty and restricted access to inputs, credit, and markets; precisely those constraints to be alleviated by the project.

The USAID Small Farmer Development and Small Farmer Diversification Projects clearly showed that the combination of improved access to support services, the availability of reliable technical and market information, and mutual support among farmers, via cooperatives and informal community associations, significantly reduce the perceived risk of innovation. For these reasons, the prospects for rapid, widespread, and sustainable spread of diversification under the project appear to be excellent.

6. CONSTRAINTS

The small farmer profiles sketched earlier imply that cultural and linguistic barriers may impede successful communication of innovations needed for the diversification of small farms. Economically rational uses of credit and responsible management of cooperatives and water use associations are sophisticated concepts and

are difficult to grasp for small farmers in general, and Indian farmers in particular. Extension agents, government planners, and private consultants often do not understand this. For this reason, tailoring to local conditions the manner and language by which innovations are introduced are considered vital to securing acceptance, adoption, and diffusion under this project.

Policy makers and development administrators face pressures and constraints intrinsic to their working environment which limit their conceptual horizons. Unrealistic expectations may impede a balanced assessment of progress and lead to premature judgements about the success of one or more of the project's components. Consequently, this project contains a strong focus upon more efficient modes of information flow and of project administration, monitoring, and evaluation.

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