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

GUATEMALA

PROJECT PAPER

COMMUNITY NATURAL RESOURCES MANAGEMENT

AID/LAC/P-829

PROJECT NUMBER: 520-0404

UNCLASSIFIED

PROJECT DATA SHEET

1. TRANSACTION CODE

A = Add  
 C = Change  
 D = Delete

Amendment Number

DOCUMENT CODE

3

2. COUNTRY/ENTITY

Guatemala

3. PROJECT NUMBER

520-0404

4. BUREAU/OFFICE

Latin American and the Caribbean

5. PROJECT TITLE (maximum 40 characters)

Community Natural Resources Management

6. PROJECT ASSISTANCE COMPLETION DATE (PACD)

MM DD YY  
 1 | 2 | 3 | 1 | 9 | 7

7. ESTIMATED DATE OF OBLIGATION  
 (Under 'B.' below, enter 1, 2, 3, or 4)

A. Initial FY 9 | 3 | B. Quarter 4 C. Final FY 9 | 6 |

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

A. FUNDING SOURCE	FIRST FY 94			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	573	891.5	1464.5	1076.6	3123.4	4200
(Grant)	( 573 )	( 891.5 )	( 1464.5 )	( 1076.6 )	( 3123.4 )	( 4200 )
(Loan)	( )	( )	( )	( )	( )	( )
Other U.S.	1.					
	2.					
Host Country						
Other Donor(s)		390.4	390.4		1610	1610
<b>TOTALS</b>	<b>573</b>	<b>1281.9</b>	<b>1854.9</b>	<b>1076.6</b>	<b>4733.4</b>	<b>5810</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) DA						4,200		4,200	
(2)									
(3)									
(4)									
<b>TOTALS</b>						<b>4,200</b>		<b>4,200</b>	

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

11. SECONDARY PURPOSE CODE

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

A. Code

B. Amount

13. PROJECT PURPOSE (maximum 480 characters)

To develop and replicate sustainable, community-based natural resources management models in upland watersheds, and achieve sound policy improvements.

14. SCHEDULED EVALUATIONS

Interim MM YY Final MM YY  
 1 | 2 | 9 | 5 | 1 | 2 | 9 | 7

15. SOURCE/ORIGIN OF GOODS AND SERVICES

000  941  Local  Other (Specify)

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

I certify that the methods of payment and audit plans are in compliance with the payment verification policy.

*Gary Byllsby*  
 Gary Byllsby, Controller

17. APPROVED BY

Signature

Title: Director  
 USAID/Guatemala

Date Signed

MM DD YY  
 08 | 19 | 93

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

MM DD YY

## PROJECT AUTHORIZATION

Name of Country: Guatemala  
Name of Project: Community Natural Resource Management  
Number of Project: 520-0404

1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Community Natural resource Management Project for Guatemala, involving planned obligations not to exceed \$4,200,000 in grant funds over the life of project, subject to the availability of funds in accordance with A.I.D. OYB/allotment processes, to help in financing the foreign exchange and local currency costs of the Project. The planned life of project is until December 31, 1997.
2. The Project Purpose is to 1) develop and replicate sustainable community-based natural resource management (NRM) models in upland watersheds, and 2) achieve sound NRM policy improvements.
3. The Project Agreement(s), which may be negotiated and executed by the officer(s) to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority, shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate.

### 3.1 Source and Origin of Commodities, Nationality of Services

Commodities financed by A.I.D. under the project shall have their source and origin in the United States (Country Code 000), except as A.I.D. may otherwise agree in writing or as provided in paragraph 3.2 below.

The suppliers of commodities or services shall have the United States as their place of nationality, except as A.I.D. may otherwise agree in writing or as provided in paragraph 3.2 below.

Ocean shipping financed by A.I.D. under the project shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States.

Air transportation services financed under the Project shall be on U.S. flag carriers except to the extent such carriers are not "available" as such term is defined by the U.S. Fly America Act.

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**COMMUNITY NATURAL RESOURCE MANAGEMENT**

**PROJECT PAPER.  
(520-0404)**

**Office of Rural Development  
July 2, 1993**

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## LIST OF ACRONYMS

<b>AID</b>	U.S. Agency for International Development
<b>Altiplano</b>	Upland areas of the Central and Western regions, whose population is primarily Indian
<b>APROFAM</b>	Private Guatemalan Family Planning Organization
<b>ASIES</b>	Asociación de Investigación y Estudios Sociales (Association of Research and Social Studies)
<b>BANGUAT</b>	Central Bank of Guatemala
<b>BID</b>	Inter-American Development Bank
<b>CIEN</b>	Centro de Investigaciones Economicas Nacionales (National Economic Study Center)
<b>CNRM</b>	Community Natural Resources Management Project
<b>COMPDA</b>	Watershed Management Component of the Highland Agricultural Development Project
<b>CONAMA</b>	Comisión Nacional de Medio Ambiente (National Environmental Commission)
<b>CONAP</b>	Comisión Nacional de Areas Protegidas (National Council on Protected Areas)
<b>DIGEBOS</b>	Dirección General de Bosques y Vida Silvestre (General Directorate of Forests and Wildlife)
<b>DIGESA</b>	Dirección General de Servicios Agrícolas (General Directorate of Agricultural Services)
<b>EEC</b>	European Community
<b>EIA</b>	Environmental Impact Assessment
<b>FEAT</b>	Private Sector Agricultural Extension Project ( <i>Fondo Especial de Asistencia Técnica</i> )
<b>FONAPAS</b>	Fondo Nacional para la Paz
<b>FPR</b>	Farmer Participatory Research
<b>GOG</b>	Government of Guatemala
<b>GPS</b>	Guatemalan Peace Scholarship
<b>HAD</b>	Highland Agricultural Development Project
<b>Highlands</b>	Upland areas of the Central and Western regions, whose population is primarily Indian
<b>IBRD</b>	World Bank
<b>IFAD</b>	International Fund for Agricultural Development
<b>"Indigenas"</b>	Men and women who identify as "Indian"
<b>INE</b>	National Statistics Institute
<b>IPM</b>	Integrated Pest Management
<b>"Ladinos"</b>	Rural residents who are not "Indigenas"
<b>M&amp;E</b>	Monitoring and Evaluation
<b>MAGA</b>	Ministry of Agriculture
<b>MAYAREMA</b>	Maya Biosphere Project
<b>MICUENCA</b>	Integrated Watershed Management Component
<b>NGO</b>	Non-governmental Organization
<b>NRM</b>	Natural Resource Management
<b>NTAE</b>	Non-traditional Agricultural Exports
<b>ODDT</b>	Office of Democratic Development and Training
<b>Oriente</b>	Eastern region of Guatemala, bordering on El Salvador and Honduras, whose population is primarily <i>Ladino</i> ( <i>Mestizo</i> )

**LIST OF ACRONYMS con't**

<b>PAFG</b>	Forestry Action Plan for Guatemala
<b>PARAGRO</b>	Policy Analysis Group of Ministry of Agriculture
<b>PCD</b>	Participatory Community Diagnostic
<b>PIC</b>	Policy Improvement Component
<b>PID</b>	Project Identification Document
<b>PRA</b>	Participatory Rural Appraisal
<b>REMARK</b>	Regional Environmental and Natural Resources Management Project
<b>ROCAP</b>	AID Regional Office for Central American and Panama
<b>SFDP</b>	Small Farmer Diversification Project
<b>SO</b>	Strategic Objective
<b>TA</b>	Technical Assistance
<b>TAC</b>	Technical Advisory Committee of CNRM
<b>URL\IIES</b>	Universidad Rafael Landivar\Instituto de Investigacion Economico y Social
<b>USAID</b>	United States Agency for International Development
<b>USPADA</b>	Agricultural Planning Unit-Ministry of Agriculture
<b>WID</b>	Women in Development

## 1.0 PROJECT SUMMARY

Guatemala still has a rural-based economy with 60% of its population living outside of the cities. 70% of national employment and 80% of economic product (GDP) is generated by the natural resource-based production, processing, and marketing system. If tourism is included, dependence of the national economy on the natural resource base is even higher.

Unfortunately, the combination of accelerating population pressures, limited agricultural land, unsustainable fuelwood requirements, increasing slash and burn agriculture on steep and/or fragile lands, and unrestricted destructive logging practices, are dramatically degrading the nation's natural resource base at an alarming rate. This array of serious environmental and natural resource management problems converge into an overall problem statement for Guatemala:

**The present environmental deterioration and unsustainable use of the natural resources base is seriously jeopardizing long-term prospects for social and economic development.**

In the past, this perceived problem has been addressed by technical interventions (soil management, reforestation...) primarily oriented toward increased agricultural and forestry production. These have had varying degrees of success within their limited purposes.

What often has been missing in these interventions has been a more comprehensive development model of *sustainable production and natural resource management (NRM)*, amenable to widespread replication. Such a comprehensive approach should deal not only with technological solutions to the problem, but also with the *underlying structural causes of the NRM problem*, as identified by the 1991 Concept Paper:

- ◆ Inadequate NRM policy framework that defines the economic and social environment that encourages misuse of natural resources
- ◆ Inappropriate NRM institutional policy framework that has created a confusing mix of institutions and overlapping roles that have impeded improvements in the management of natural resources
- ◆ Limited local community initiatives and participation in the decision-making and management of natural resources
- ◆ Limited cultivable land base and inequitable distribution
- ◆ Lack of NRM awareness and effective educational programs
- ◆ Rapid rural population growth that increases pressures on resource use

The Community Natural Resource Management Project (CNRM) has been designed to promote a balanced production/conservation development approach, while addressing the above structural causes of resource mismanagement. This more comprehensive approach to NRM improvement, combined with proven technical NRM practices, is expected to establish conditions and sustainable progress in addressing the longer-term problem statement.

The Goal to which the CNRM Project will contribute in Guatemala is to improve long-term social and economic well-being of the rural poor through improved management and sustainable use of natural resources. Project Purposes are:

- ♦ To achieve sound policy improvements that promote sustainable management of natural resources; and,
- ♦ To develop and replicate sustainable, community-based natural resources management models in upland watersheds.

The Project will be funded initially at \$4.2 million over a period of four years, with the expectation that an amendment to define the Policy Improvement Components (PIC) and Monitoring Evaluation (M&E) will be developed in FY 1994. The Project will build on past successful USAID interventions that need additional time to sustain their accomplishments, specifically in the area of Integrated Watershed Management MICUENCA (IWM), and a start-up M&E activity to be implemented through a buy-in to the RENARM Project. This and the components to be further developed next Fiscal Year will be designed to be mutually reinforcing so as to contribute to the achievement of the Mission's Improved Natural Resource Management Strategic Objective.

PIC will contribute to the development of an improved NRM policy environment. It will develop an agenda of key NRM policy issues, formulate policy resolutions, and promote these reforms with decision-makers. The policy emphasis will be on local community level management of natural resources. Under the direction of CARE, the integrated watershed management component will introduce and promote improved technical practices in natural resource management. The Monitoring and evaluation component will measure progress in achieving project and program objectives and overall impacts of the NRM program. The experiences and lessons learned from this interim effort, along with experience gained in other NRM projects, will help form the basis for integrating our knowledge of improving natural resource management and environmental preservation into the design of a longer-term NRM project in the future.

## 2.0 PROJECT SETTING AND RATIONALE

### 2.1 Physical and Structural Setting

In contrast to much of Latin America, Guatemala still is a rural-based economy with 60% of its population living outside of the cities. 70% of national employment and 80% of economic product (GDP) is generated by the natural resource-based production, processing, and marketing system. If tourism is included, dependence of the national economy on the natural resource base is even higher.

Experts classify Guatemala as extraordinarily rich in renewable natural resources because of its biodiversity. However, in terms of availability of agricultural land per capita to satisfy basic human needs, and the distribution of that agricultural land both in geographic and ownership terms, Guatemala is one of the more-poorly endowed countries in Latin America. Approximately 15% of all agricultural land is located in the mountainous highlands, where two-thirds of the rural population and 40% of total population live. This is less than 1.0 hectare of cropland per farm family, and much of this is on moderate to steep slopes. Mismanagement of this sloping cropland and deforestation to meet growing fuelwood and subsistence cropland needs, causes accelerated rainfall run-off and high soil erosion.

Experts estimate that with current prevailing conditions of limited irrigation, traditional cropping patterns, and low levels of productivity on small farms in the highlands, a farm family needs 1.5 to 3.0 hectares of cropland for basic subsistence. In 1950, 90% of the estimated 350,000 farm families in Guatemala, the majority in the highlands, cultivated an average of 1.75 hectares each. Today, with annual rural population growth rates of 3.6%, 90% of the estimated 650,000-700,000 farm families cultivate an average of only 0.75 hectares. Most make do with even less. Additionally, some 30,000 new rural farm families (20,000 in the highlands) now are being formed each year, of which no more than half will be absorbed into urban areas. There are relatively large tracts of agricultural land on the South Coast, but these are inaccessible to excess rural families from the highlands because of the highly skewed ownership patterns favoring large landowners, and the lack of a competitive land market.

Because of the conditions described above, "excess" rural families from the highlands for the last 10 years or more have had no alternative but to seek their livelihood by clearing unfarmed lands (often public or common lands) on the steeper slopes of the highlands or to migrate to the fragile tropical lowlands of the northern portions of the country, especially the Peten. Since most of these areas cannot support cultivated crop production on a

sustainable basis, these families adopt a "slash and burn" system, whereby cleared areas are abandoned every 1-3 years and new areas are cleared for planting subsistence crops until these in turn must be abandoned. An estimated 50,000-100,000 families currently survive in this manner, and an additional 8,000-12,000 families annually adopt these practices in order to survive.

In the past decade slash and burn deforestation, combined with destructive and often illegal logging practices, especially in the Petén, has led to deforestation of an estimated 1.5 million hectares. To illustrate the national impact of this trend on the natural resource base, from 1960 to 1980 national territory covered by primary forests decreased from 77% to 42% of the total. By 1989, primary forest area had dropped to 29% of the total. If this rate continues, primary forests will virtually disappear from Guatemala by the year 2010.

To the enormous natural resource destruction that takes place directly on deforested lands, must be added widespread degradation of the lower level agricultural resource base caused by resultant accelerated water run-off and erosion from these deforested areas. Further, most of the abandoned slash and burn areas do not reforest naturally and remain degraded almost indefinitely.

This combination of accelerating population pressures, limited agricultural land, unsustainable fuelwood requirements, increasing slash and burn agriculture on steep and/or fragile lands, and unrestricted destructive logging practices, are dramatically degrading the nation's natural resource base and are increasingly foreclosing some of the most important development options for the future.

For example, on the limited cropland, expanded irrigation is an important option for generating increased employment and incomes from diversified intensive crop production for export. Irrigation combined with diversification has as much economic growth potential as a four-fold increase in cropland area. However, negative impacts of resource degradation on the hydrologic regime are undermining these important options for relieving population pressures on ecologically fragile and over-saturated areas.

## **2.2 Policy Setting**

The natural resource management (NRM) policy process in Guatemala is discontinuous and ad hoc. Haphazard legislative efforts are often crafted by special interest groups with little attention given to long-range planning and technical policy analysis. Legislation and regulations generally address each natural resource separately (forestry, water, soils, etc.) in a piece-meal way, without considering unifying principles that transcend these resources. Similarly, separate national-level GOG institutions are assigned regulatory functions for each resource.

There is only limited coordination among these institutions, yet often confusing overlap of roles. Relevant policies promote inefficient centralization of decision-making and authority and provide little support for mobilizing local initiatives to address natural resource issues.

The institutional setting for implementing the NRM policy improvement process in Guatemala is characterized by highly dispersed public and private sector institutional interests, combined with limited numbers of experienced policy talent. At this point, no single institution yet has developed the capacity needed to guide a technically and analytically-sound NRM policy framework, within which complementary resource-specific policy changes can be formulated. Nevertheless, the Ministry of Agriculture (MAGA) has recognized the need to take a more integrated and analysis-based approach to NRM policy improvement and has started developing its technical capability in this area. MAGA initiated, in mid-1991, a policy group (known as PARAGRO) and attached it directly to the Office of the Minister. This group has been supported by the World Bank (IBRD) and the United Nations Development Program (UNDP), and by the advisory assistance of USAID's policy specialist. PARAGRO promptly developed an agricultural and natural resources policy improvement strategy and agenda, which the Minister publicly announced would guide the Ministry's program and initiatives for the 1990s. This strategy takes a balanced approach, focussing on integrating resource preservation objectives with those of sustainable production and employment generation.

Implementation of the policy strategy is still in the beginning stages. Nevertheless, PARAGRO has gained considerable experience in developing terms of reference for policy studies, contracting individuals and/or firms to conduct analyses, and in managing the technical quality of outputs. They also have begun to initiate and manage information dissemination and dialogue events to build consensus about proposed improvements. Although this is still a developing capacity, PARAGRO shows considerable promise.

In addition to the more comprehensive approach initiated by PARAGRO, several *ad hoc* efforts have been made to take a more analytical approach to NRM policy improvement, primarily through Congressional formation of working groups supported by external donors. The Congressional Commission on the Environment and the Commission on Agriculture have been the two most prominent proponents of reform legislation to address environmental and natural resource issues. For example, they have supported different working groups developing proposals for a new forestry law, a new water and irrigation law, and a new plant health law. These initiatives have varied in quality but are being debated and will eventually form new legislation.

NRM-related organizations, whether public or private, are relatively new. Most are less than five years old, are still seeking financial viability, and have not yet consolidated their purposes or "niche". Of these, the National Environmental Commission (CONAMA) is the most important. It was created in 1986 with the general mandate to protect the environment. As of yet it has no formal policy agenda but has developed a long-term strategy which emphasizes its coordinating and support role for public and private initiatives in environmental protection. It has been a relatively weak institution in the past but is now starting to gain credibility because of increased public awareness of growing environmental problems. Important to note is that CONAMA has the support of the Presidency, which will add to its influence in the national management and conservation of natural resources in the future.

### **2.3 Monitoring and Evaluation Setting**

Provisions for monitoring and evaluation of impacts of AID and other donor-assisted projects, as well as activities wholly funded by the GOG, generally have been treated as a necessary administrative requirement rather than as an integral part of the program being supported. In addition, the generation and analysis of sector level information and statistical data for monitoring and evaluating changes in social, economic, and natural resource variables has not been accorded high priority in Guatemala for many years.

This lack in monitoring capability has not gone unnoticed in MAGA and as the result of a recent Government (GOG) decision, the Agricultural Sector Planning and Development Unit (USPADA) within MAGA has been assigned the responsibility for designing, organizing and coordinating an information and statistical data system for agriculture and natural resources. With technical assistance, USPADA has recently developed such a system to be initiated in 1993. Information and data collection and processing for monitoring and evaluation purposes of all agriculture and natural resource management programs will now be coordinated within this sector-wide system.

USAID's Highland Agricultural Development Project (HAD) has organized a computerized information program over the past several years intended to provide timely internal management and monitoring information both at the institutional and field levels. This system has furnished baseline and followup data for initial reports of USAID/G's developing Strategic Objective monitoring system. The HAD Project will be terminating at the end of FY93 and this management information program is expected to be incorporated into the overall sector-level USPADA system.

## 2.4 Project Rationale

As indicated above, Guatemala still has a rural-based economy with much of its population dependent on the natural resource base for livelihood. The increasing degradation of that base is threatening this livelihood, especially of the rural poor, with lost incomes, unemployment, and growing poverty. Given social, economic, and environmental realities, there are various approaches that should be pursued in effectively treating NRM issues.

Diversification of agricultural lands into high-value, labor intensive irrigated crops for non-traditional export can help to slow the exodus to urban areas, already suffering from excessive and undirected expansion. It also can help to reduce migration to the lowland tropics of the north, especially in the Petén. Small-scale irrigation schemes (*mini-riegos*) have been installed in a number of highland areas with encouraging results when combined with diversification into non-traditional high-value export crops. Resulting increased farm incomes and employment and the attendant multiplier effects show great potential in helping to alleviate rural poverty and in providing livelihoods for increasing rural populations. For irrigation and diversification to continue to expand, however, increased attention must be accorded to overall natural resource management. Without improved management, soil, water, and forest losses will seriously affect sustainability of productivity and employment gains over the longer run.

Considerable experience has been gained in recent years for improving NRM at the watershed level through local group initiatives. Tested practices include reforestation, on-farm soil and water conservation, and sustainable agro-forestry. These provide an encouraging technological baseline for future management improvement, as well as for productivity, income and employment growth. Equally encouraging are experiences with integrated pest management practices at the small-farm level, as well as innovative options for stimulating producer initiatives in technology transfer activities. Targeted support for these proven initiatives, as will be provided by the CNRM Project, can provide the needed technical base for more effectively utilizing resources and reversing trends in environmental degradation.

In the recent past, international attention has focused on preservation of natural forests and protected areas, with relatively less emphasis on sustainable utilization of productive agricultural and forestry areas. Earlier, the focus was almost exclusively on production, to the detriment of biodiversity and with insufficient regard for the sustainability of proposed management systems. It now is being recognized (for example through USAID's Mayarema Project) that a viable natural resourcemanagement strategy for Guatemala must encompass a balanced focus on environmental protection integrated with sustainable

productive use that rapidly increases both rural employment and incomes.

There also is a growing recognition that the existing policy, institutional, and legal framework is inappropriate and limits potential for promoting NRM improvements. Changes in public awareness and attitudes suggest that timing is opportune to change direction and to initiate policies that facilitate and mobilize local initiatives to manage natural resources on a sustainable basis. While the Mission is not at this time prepared to define the implementation arrangements required to achieve its NRM policy objectives, the importance of addressing these issues is clear. Based on negotiations between the Mission and new GOG leadership in the areas of natural resources management and environmental protection, these implementations arrangements are expected to be defined in a Project Paper Supplement in FY 1994. At that time, the Mission will establish a clear linkage between the Projects' three components.

To date, proposed NRM policy changes generally have been developed without clear estimates of long-term economic consequences and often without consideration of cross-impacts among sectors. The approach to policy improvement generally has sought to achieve resource management and conservation compliance through restrictions, controls and penalties administered by GOG institutions. Little consideration has been given to market-linked policy options that facilitate and encourage appropriate management behavior through operation of market forces and economic self-interest. These are areas where an innovative policy focus has the potential to provide real paybacks in sustainable resource use and long-term preservation that technical interventions alone will not achieve.

Successful NRM policy improvement requires consensus-building and popular participation. Mobilization and organization of community initiatives, combined with appropriate divisions of roles and responsibilities among public and private sectors at national and local institutional levels, can achieve both participation and common cause. In Guatemala, these are areas that have not received sufficient attention in the implementation of NRM programs. Consequently, programs often have not received popular support, or have been ill-managed by overlapping institutions. Recognizing these as key policy constraints to sustainable management of natural resources, it is expected that CNRM will highlight these as the initial policy agenda items to be analyzed and implemented early on in the project.

## **2.5 Government of Guatemala NRM Improvement Strategy, Plans and Activities**

In 1986 the GOG formally started devoting attention to environmental protection and improved management of natural

resources. In that year the National Environmental Commission (CONAMA) and the National Council for Protected Areas (CONAP) were established. This initiative formed the basis for creating more public awareness of the state of the environment and efforts to protect it. Follow-on efforts of MAGA to develop a long-range policy agenda and strategy for sustainable production and resource management have further contributed to a growing GOG interest in addressing natural resource policy needs.

GOG planning documents and position papers presented in international environmental fora, focus on three major policy themes:

- ♦ Effective and sustainable NRM must be "balanced," in terms of both increased income and employment generation and resource conservation.
- ♦ Greater reliance must be placed on decentralization and privatization of NRM.
- ♦ Successfully addressing chronic natural resource degradation problems requires increased attention to improved management of watersheds in production agriculture and forestry areas, as well as in protected areas.

The GOG has expressed specific concerns regarding natural resource degradation in the highlands, which compromises long-term sustainability of small farmer agriculture and national food security. There also is concern about current policies related to fuelwood production and marketing. Additionally, it is now generally recognized that policy improvement initiatives must encompass interactions between out-migration from over-populated areas of the country, especially the highlands, and unmanaged colonization of the northern tropical lowlands.

By law the Ministry of Agriculture has a public mandate to manage the country's natural resources. MAGA functions include design, coordination and implementation of agricultural and natural resources policies (specifically soil, water, forests, fisheries, oceans, lakes, rivers, natural habitat and wildlife), and promotion of use, conservation, rehabilitation and protection of natural resources, with special emphasis on preserving natural habitat and wildlife. Recently, MAGA has focused increasing attention on agricultural and NRM policy improvement issues. Its official NRM policy strategy and agenda document, prepared by PARAGRO, defines the problem of stagnant natural resources-based production and growth in terms of inefficient resource use and degradation of the productive resource base. The global policy objective is stated as "integrated and efficient development of the sector, based on rational utilization of renewable natural resources." The document also identifies as MAGA's highest priority the establishment of an improved policy framework to facilitate "development of production

systems compatible with and complementary to maintenance, recuperation, and preservation of renewable natural resources."

The GOG also joined forces with the donor community (including significant support from USAID) in 1991 to develop over a two-year period of analysis and dialogue, the Forestry Action Plan for Guatemala (PAFG). This effort, albeit with emphasis on the forestry sector, represents an advance in planning for the management of forestry resources (See Technical Analysis for further detail).

Establishment of CONAMA and CONAP has resulted in a higher political profile for environmental regulation and protection issues. Nevertheless, as mentioned earlier, there are continuing chronic weaknesses among GOG institutions in terms of analysis-based policy capability, as well as in field application of policies and implementation of NRM programs. PARAGRO is the only permanent policy analysis group in the Government dealing with natural resource issues.

## **2.6 USAID Involvement in Natural Resources Sector Development Activities**

For many years USAID/Guatemala has supported NRM activities as a part of its agriculture sector development strategy and program. Since 1981, with initiation of the Small Farmer Diversification Project (SFDP), USAID strategy has focused on improvement of the livelihoods of highland small farmers through diversification into non-traditional export crops. The project supported small-scale irrigation development and testing of on-farm soil and water conservation practices. The Highlands Agricultural Development Project (HAD), initiated in 1983, continued emphasis on agricultural diversification through small-scale irrigation, and included active promotion of on-farm soil and water management and other sound agronomic practices.

In 1990, a HAD Project grant to CARE/Guatemala was approved to develop and demonstrate pilot integrated watershed management models. Many of these were linked directly to small-scale irrigation schemes developed previously. Also, in 1990, USAID/Guatemala initiated the Maya Biosphere Project (Mayarema) in response to Congressional mandates for reducing global tropical deforestation and loss of biological diversity. Mayarema seeks to achieve environmental management improvements within the 1.8 million hectare Maya Biosphere Reserve in the northeastern Peten, by strengthening appropriate public and private NRM institutions and promoting community participation in sustainable forestry management activities.

In early 1991, USAID/Guatemala embarked on an analytical and planning exercise to examine the full range of problems and possible interventions that might be undertaken to assist in

achieving the NRM Strategic Objective. A Concept Paper for Sustainable Natural Resources Management in Guatemala resulted from this effort and identified key underlying causes to environmental degradation and the unsustainable use of resources in Guatemala. Experience from all of these activities has contributed considerably to the evolution of the Mission's program from a narrow production agriculture focus to a more comprehensive natural resource management approach, which has been detailed in the Mission's published and widely-distributed Natural Resource Management Strategy.

With the advent of the AID program-focused strategic planning system, Improved Management of the Natural Resources Base has been selected as one of five strategic objectives (SO) of the USAID/Guatemala Action Plan. The Community Natural Resource Management (CNRM) Project is the first new initiative under this SO. It will contribute to all of the program outcomes as detailed in the SO Framework in Annex 2. The project's watershed management component will directly support the increased use of natural resource management practices in project areas. The policy component will be the primary contributor to a more effective policy environment and will indirectly promote a more effective public institution managing the (Maya Biosphere) Reserve.

## 2.7 Other Donor NRM-Related Activities.

Traditionally, donor activities supporting natural resource management have been treated as elements of agricultural production and integrated rural development projects. More recently, other donors have redirected attention more towards environmental concerns and issues of sustainable resource management. This new orientation has resulted in several new area development and environmental protection-type projects.

One such activity covering the Lake Atitlan drainage basin and financed by the European Community (EEC), has been operating for 4 years. This project supports investments in infrastructure, such as drainage, sewerage, potable water and reforestation, as well as on-farm conservation activities and local institutional development activities. Another EEC-financed protection/development project supports similar activities in 15 municipalities in the Department of Huehuetenango. This project is about to initiate a second phase. The International Fund for Agricultural Development (IFAD) and the Dutch are financing an environmental protection and forestry development project in Sierra Cuchumatanes. The German Government is financing forestry protection and deforestation monitoring in the Peten and is closely coordinating its efforts with USAID/G's Mayarema Project. The Inter-American Development Bank (IDB) is supporting forestry development in the all-important Chixsoy Valley and in several municipalities of Zacapa/Chiquimula.

A recent "Phase I" BID Mission to Guatemala identified two project ideas to explore; a "Green Belt" Guatemala City environmental protection proposal to cover a 1,000 square kilometer area around the Capital, and a sector program, encompassing water, fisheries, forests, protected areas and wildlife, with support to policy improvement and institutional strengthening. BID also recently signed a US\$2.0 million non-reimbursable funding agreement for the institutional strengthening of CONAMA and establishment of a national environmental protection program.

A recent World Bank team explored possibilities for future activities. It recommended a first stage US\$800,000 review and study of environmental and natural resources problems and alternative solutions, to be used in defining investment alternatives.

USAID/G has coordinated closely with both Bank teams and assisted them in their fact-finding missions. USAID will continue its collaborative role with donors, especially under the policy component of CNRM, to ensure that key NRM policies are consistently supported by donors in a coordinated manner.

### **3.0 PROJECT PROBLEM STATEMENT, GOAL AND PURPOSES**

#### **3.1 Problem Statement**

People who live in poverty will do what is necessary to survive in the short run, even if the result is destruction of their natural resource base. This is now occurring in Guatemala at an increasing rate, as described in the project setting and in more detail in the Technical Analysis annex.

While an array of serious environmental and natural resource management problems exist, they all converge into an overall problem statement for Guatemala:

**The present environmental deterioration and unsustainable use of the natural resources base is seriously jeopardizing long-term prospects for social and economic development.**

In the past, this perceived problem has been addressed in a variety of ways. Initially, reforestation was emphasized. Later, increasing attention was accorded to improving on-farm soil and water management, and, more recently, integrated pest management as an alternative to uncontrolled pesticide use has been an additional area of focus. These interventions have been implemented within projects primarily oriented toward increased agricultural and forestry production and productivity. They have had varying degrees of success within their limited purposes.

What has been missing too often in these interventions has been a more comprehensive development model of sustainable production and resource conservation, amenable to widespread replication. Such a comprehensive approach should deal not only with technological solutions to the problem, but also with the underlying structural causes of the NRM problem, as identified by the 1991 Concept Paper:

- ♦ Inadequate NRM policy framework that defines the economic and social environment that encourages misuse of natural resources
- ♦ Inappropriate NRM institutional policy framework that has created a confusing mix of institutions and overlapping roles that have impeded improvements in the management of natural resources
- ♦ Limited local community initiatives and participation in the decision-making and management of natural resources
- ♦ Limited cultivable land base and inequitable distribution
- ♦ Lack of NRM awareness and effective educational programs
- ♦ Rapid rural population growth that increases pressures on resource use

The Community Natural Resource Management Project (CNRM) has been designed to promote a balanced production/conservation development approach, while addressing the above structural causes of resource mismanagement. This more comprehensive approach to NRM improvement, combined with proven technical NRM practices, is expected to establish conditions and sustainable progress in addressing the longer-term problem statement.

### 3.2 Project Goal and Purposes

The Goal to which the CNRM Project will contribute in Guatemala is to improve long-term social and economic well-being of the rural poor through improved management and sustainable use of natural resources.

CNRM is an interim project of relatively short duration when considering the long-run nature of progress towards Goal achievement. Thus, CNRM Project Purposes are of an interim nature, intended to establish the policy and organizational framework, along with technological and operating knowhow, to permit future longer-term projects to efficiently and effectively contribute to this Goal. These Project Purposes are:

- ♦ To achieve sound policy improvements that promote sustainable management of natural resources (to be developed in subsequent PP supplement); and,
- ♦ To develop and replicate sustainable, community-based natural resources management models in upland watersheds.

## **4.0 PROJECT DESCRIPTION**

### **4.1 Overall Project Strategy**

Worldwide experience and evidence from field projects in Guatemala demonstrate that rational management of natural resources is one of the long-term keys to sustainable social and economic development in Guatemala. Successful NRM depends upon a number of important factors -- an appropriate and facilitating policy environment and institutional structures, an aware population, adequately trained human resources, and, most of all, the initiatives and active participation of the people who use the resources.

The Community Natural Resource Management (CNRM) Project has been designed with these factors in mind. CNRM will comprise three components: Policy Improvement (PIC), Integrated Watershed Management MICUENCA (IWM), and Monitoring and Evaluation (M&E). While only the MICUENCA (IWM) component has been developed at this time, it is expected that during the LOP, CNRM will:

- ♦ improve the policy framework and related institutional effectiveness which will enable and facilitate improved resource management;
- ♦ develop and replicate effective technologies and organizational models for educating, training, and mobilizing local communities to plan and carry out sustainable watershed management;
- ♦ establish and apply methods for tracking natural resource management and environmental impacts and for refining and improving NRM technical and policy interventions.

Although each of the three components will be implemented as separate initiatives, they will be closely integrated to build on complementarities and to ensure a coordinated approach to achievement of project purposes. This will greatly increase the potential for replicability of the NRM models being supported by the project-- a necessary element of sustainability.

### **4.2 Integrated Watershed Management (MICUENCA) Component**

#### **4.2.1 Introduction**

This section describes the Integrated Watershed Management Component (MICUENCA) for the Community Natural Resources Management Project. MICUENCA (detailed proposal from CARE in ANNEX 1) will enhance activities begun under the HAD Phase II Watershed Management Component (COMPDA), which the Government of Guatemala

and CARE Guatemala have jointly implemented since 1990, and which is due to end in September 1993. CARE has assisted the Forestry Directorate (DIGEBOS), and to a lesser extent the Agricultural Extension Directorate (DIGESA), in implementing COMPDA in 20 small or micro-watersheds distributed throughout Guatemala's oriente and altiplano regions in an effort to improve the management of the natural resource base, to improve small farm productivity, and to protect water supplies for small scale irrigation activities downstream.

In developing this component, a special effort has been made to build on the successes and experiences of the COMPDA and to address shortfalls. This four-year effort has been designed to help the typical farmer, residing in selected upper watershed areas, to successfully challenge some of the critical problems faced such as dwindling resource base; low and declining agricultural productivity; increasing cost of inputs; limited access to appropriate technical assistance; poor institutional support; and little or no participation in shaping agricultural and forestry policy.

#### **4.2.2 Objectives of MICUENCA**

The objective of MICUENCA is to provide appropriate technical assistance to small farmers, in selected upper watersheds, in order to stabilize and gradually improve management and productivity of local soil, water and forest resources. This should lead to improved livelihoods, favorably impact on the overall condition of the watershed, and trigger a maximum of downstream benefits. Ultimately, by 1997, this will improve the socio-economic well-being of up to 6,500 small farm families in as many as 30 watersheds, by increasing agricultural and forestry productivity in a sustainable fashion.

A second objective is to develop practical and effective community-based watershed planning and improvement models that can be replicated elsewhere in the country. Replicability will ensure that benefits accruing to the immediate project beneficiaries under this short-term project can be magnified beyond to a larger population and watershed areas.

#### **4.2.3 Description of MICUENCA**

The Component's sub-components are: 1) Community Strengthening, Training and Extension; 2) Watershed Planning and Environmental Monitoring; 3) Environmental Education; 4) Sustainable Agriculture, 5) Social Forestry; and 6) Rural Economic Programming. These sub-components have been designed to give implementors the capacity and flexibility to respond to needs of a diverse target population in an appropriate holistic manner.

The starting point for MICUENCA will be the sub-components dealing with: 1) community organization, 2) training and extension, and 3) environmental education. Guatemala's communities, particularly in indigenous areas, are coming out of a difficult and violent period in which many traditional organizations were debilitated. The community strengthening sub-component will help address some of the organizational weaknesses by providing training in organizational development, leadership skills and conflict resolution; and grants for institutional strengthening. Given the rapid environmental decline in most of the selected watersheds and associated communities, MICUENCA will work with local NGOs to develop and implement appropriate environmental education strategies, both formal and non-formal, to raise levels of awareness, and to create a favorable atmosphere for follow-on activities of 1) watershed planning, 2) sustainable agriculture, and 3) social forestry.

MICUENCA will promote the process of managing watersheds as units of production and developing institutional capacity to monitor results. To facilitate this effort, DIGEBOS' Watershed Planning Section will be strengthened through the provision of equipment and training. DIGEBOS, DIGESA, Peace Corps, selected NGOs, and communities will collaborate in developing and implementing watershed management plans. For maximum effect, component activities will identify areas of "critical impact" and concentrate efforts there.

Under the sustainable agriculture and social forestry sub-components, extensionists and community promoters will work closely with communities, small farmers, local NGOs, and the GOG to identify and prioritize needs and facilitate wide-scale adoption of soil conservation, agroforestry, sustainable agriculture, agronomic practices, small scale irrigation, reforestation and forest management technologies. The objective will be to increase -- in a socially, ecologically and economically sustainable manner -- the production of wood products, basic grains, non-traditional export crops (e.g. fruit, vegetables), and livestock fodder, on which Guatemala's rural population depends for its livelihood and survival. Water supply, both in terms of quantity and quality, will be improved.

None of the technologies or activities to be promoted through these sub-components is new, each already has been proven by the COMPDA and other projects, and many successful examples can be found throughout the country. What is new is the opportunity and official approval for mobilization of local initiatives to carry out the activities. The implementation of participant developed farm and forest management plans will provide numerous demonstration areas in a large variety of settings.

Under the Rural Economic Programming sub-component, CARE will provide administrative and technical support to the on-going

Private Sector Extension (FEAT) activity initiated under HAD II to promote small scale forest-based economic activities. FEAT is an innovative concept which provides private sector technical assistance in agricultural production and marketing to farmers who are willing to pay the cost. Since FEAT is still relatively new, it will receive grant funding support on a declining basis, until farmers adopt the private extension idea on a more widespread and financially-sustainable basis. Technical assistance, monitoring, and management oversight also will be furnished to extensionists to continue building capacity. Training will emphasize pesticide safety, integrated pest management, sustainable agricultural, agronomic practices, marketing, and forest management.

Participants will be trained in development and implementation of the Farm, Forest and Watershed Management plans. This will be complemented and strengthened by presenting participants with opportunities to participate in small economic activities which are directly supportive of the recommended technologies and add value to production, particularly that derived from forests. This program will be particularly important to female participants, who have traditionally participated in these activities but have not been provided extension support.

The MICUENCA component will work primarily in the 20 micro-watersheds which are presently serviced by COMPDA in the eastern, central and western regions of Guatemala, and up to 10 additional watersheds. Criteria for the selection of expansion watersheds will be refined later but will include percent of forest cover, use of water resources, presence of small scale irrigation systems, distance from a COMPDA watershed, presence of an agroforestry group and visibility. Priority will be given to watersheds in eastern Guatemala which are major sources of migrants to the Peten region of Guatemala. This focus will directly benefit two other Mission initiatives, the Mayarema and Centro Maya Projects, which are impacted by the continuing influx of poor highland migrants. MICUENCA will cluster Component communities, providing maximum coverage to watersheds and extending benefits to non-Project residents. Four prominent regional watersheds will be selected for demonstration purposes: Rio Selegua, Huehuetenango; Rio Nahuala, Solola; Rio San Jeronimo, Baja Verapaz; and Rio Salitre-Paz, Jutiapa.

While MICUENCA does not directly address one of the key factors of rapid environmental degradation -- rural population growth -- efforts, such as are being employed informally in the Mayarema Project, will be actively promoted. In every community in which MICUENCA is operational, project extension agents will contact local APROFAM offices to invite outreach workers to visit the project's communities and present information on family planning. Strong efforts will go towards establishing close relationships with APROFAM so that the message of family planning will be scudded loudly within the context of environmental

degradation and over-use of the natural resource base. At the AID project officer level, the Office of Rural Development will coordinate closely with the Office of Population, Health, and Education, especially within the Strategic Objective and Sector Implementation Committees, to facilitate and promote family planning initiatives for the beneficiaries of this project.

#### 4.2.4 Outputs

MICUENCA's participants will be primarily poor farmers who survive by subsistence farming on upland marginal sites and who work seasonally as laborers on large farms. MICUENCA will directly benefit as many as 6,500 families or 39,000 individuals, located in up to 30 watersheds, belonging to some 150 communities, in 7 of Guatemala's 22 Departments. By working in these watersheds it is expected that migration to the cities and relatively intact natural areas, particularly El Peten where some of Central America's last significant tropical forests still exist, will be curtailed. Other outputs include:

- ♦ 39,500 Hectares under improved natural resource management
- ♦ 50 DIGEBOS and DIGESA personnel trained in integrated watershed planning
- ♦ Training provided to up to 60 community organizations and watershed management committees

#### 4.2.5 Inputs

In order to successfully implement this Component and have the desired long term impact on Guatemala's ever worsening problems of natural resource degradation and poverty, AID will provide CARE with US\$3.9 million in donor funds. In addition to this amount, CARE will contribute a minimum of 25% in cash and in-kind resources.

#### 4.2.6 Operational Arrangements

AID will sign a Cooperative Agreement with CARE to carry out the Integrated Watershed Management component of the CNRM Project. CARE in turn will sign Memoranda of Understanding with DIGEBOS, DIGESA and USPADA, which will be the principal implementing agencies. Continuing Peace Corps participation will be formally requested by DIGEBOS. CARE will provide grants to local NGOs to strengthen them so that they assist communities in their Integrated Watershed Management efforts.

CARE, with the support of DIGEBOS and DIGESA, will be responsible for implementing the community strengthening, training and extension sub-component. DIGEBOS, with Peace Corps and CARE's support, will be responsible for implementing the watershed planning and social forestry sub-components. DIGESA, with CARE's

support, will be responsible for implementing the sustainable agriculture sub-component. CARE will work independently with NGOs, communities and the FEAT team to implement the environmental education and rural economic programming sub-components. CARE will act as MICUENCA's catalyst and the coordinator of counterpart efforts.

Development of local institutional capacity is critical if decentralized management of natural resources is to become a reality. Local municipalities, NGOs, and community organizations all have the potential to support and advance MICUENCA's development strategies. What is often lacking is basic technical training or simply opportunities to participate in worthwhile activities. MICUENCA offers that opportunity for local organizational support and participation, and every effort will be made to identify and involve local organizations in the Project's activities. Involvement will create the learning experience so necessary for future replication of project ideas. Identification of local organizations will take place in the course of initial implementation. The focus will be on finding and utilizing the best mix of counterpart support that will develop local institutional and technical capacity, and ensure accomplishment of the project's overall development objectives.

CARE will be responsible for managing all funds provided to it by donors and ensuring that these are used to achieve the goals and objectives set forth in this document.

Monitoring and evaluation is a critical part of the CNRM Project and MICUENCA will play an important role in supporting the informational needs of the system. Component implementors will be responsible for monitoring field activities and progress and reporting results to CARE. Using this information CARE will submit a consolidated quarterly report to USAID/ORD and to the MAGA's Sectoral Unit for Agricultural Planning and Development, which will be implementing the CNRM Project's monitoring and evaluation system. Key land use and beneficiary data will form the basis for measuring progress and impact in achievement of the Mission's Improved Natural Resource Management Strategic Objective. At the same time, monitoring results coming back to CARE will be especially valuable in making refinements and mid-course improvements in its local-level resource management strategies.

Policy reforms and improvements form a third important part of the CNRM Project. The focus of this component derives directly from the policy needs of local watershed communities. Conversely, results from policy improvements translate directly into the effective implementation of MICUENCA's technical interventions. Thus, the complementary roles of the policy and watershed management components demand mutual coordination on planning, implementation, and monitoring. CARE will be responsible for working with the Project's policy group to ensure that local policy

issues are surfaced for analysis and resolution, and that any policy results are effectively used by MICUENCA.

#### **4.3 Policy Improvement Component (PIC)/Preliminary Framework**

As described earlier, the key causes of resource misuse are basically policy-related. An appropriate natural resource policy and institutional framework are essential to creating the conditions that provide incentives and sanctions to promote sustainable management of renewable natural resources. CNRM will direct its support towards policy reform and link these initiatives directly to its field activities and those of the Mayarema and RENARM Projects, the other supporting element of the Mission's strategic objective.

These projects will serve as 1) field laboratories where local communities --the primary users of natural resources-- will surface policy constraints that impede their ability or willingness to manage resources sustainably, and 2) potential mechanism analysis, policy dialogue, and integration of efforts on a regional and national scale. Specifically, design of this component will evaluate the potential applications of policy analysis already completed under the RENARM Project.

This comprehensive approach to resolving NRM policy issues has not been implemented in any consistent or formal manner in the past and will require extensive negotiations with several GOG Ministries/Agencies and regional institutions.

The common objectives, shared by USAID and the GOG, and to be build upon for future design work are:

- ♦ Improved policy and institutional framework to achieve sustainable utilization of natural resources and increased rural well-being
- ♦ Better application of NRM policies and implementation of programs, through more clearly defined roles and relationships of public and private institutions, at both national and local levels.
- ♦ Improved understanding and consensus by citizens, stakeholders, and decision-makers about policy change needs, options, trade-offs, and long-run benefits -- leading to a more dynamic and effective policy approval and application process.

- Policy improvements to establish and apply incentives for local community management of natural resources, by promoting community participation in regional GOG development councils, and promoting municipal use of decentralized public funds for NRM activities.
- Policy analysis and formulation activities to improve legislation and institutional structures that promote more effective NRM, by modifying the Protected Areas and Forestry Laws to define clearer institutional mandates and responsibilities in managing natural resources.

**Table 1: Improved Natural Resource Management Strategy Objective Policy Agenda**

#### **4.4 Monitoring and Evaluation (M&E) Component/Preliminary Framework**

M&E activities will be included as a project component because of the importance of the Mission monitoring its overall Strategic Objective in Natural Resources Management (ANNEX 2). CNRM's information system, linked to the existing Mayarema Project and other NRM activities, will provide a comprehensive picture of progress and impact of the Mission's program over time. The ability to access this information is critical for the Mission to effectively use its limited resources to produce maximum benefit and impact.

One of the key roles the M&E system will play will be to inform on the overall development process that will take place. Measurements of treated area, although important, will not be enough to gauge the achievement of the project purpose. The project needs as well to be sure that the technological interventions it is supporting as part of sustainable natural resources management are leading to direct, tangible and short-term benefits for the community participants, for example. This will be a pre-requisite for their maintaining continuing interest and participation, and will likely lead to other community members joining the effort, i.e, the multiplier effect. Process will also be important for the policy component. Analysis and additional studies must lead to a greater understanding of the policy process and of the capabilities for both decision-making and implementation of policy issues.

The project must ensure sound linkages and feedback mechanisms between the field and policy review and analysis. The potential policy agenda for natural resources management in Guatemala is very large. Feedback to and from the field, emanating from community-

based reviews of needs, will provide the rationale for choosing key policy themes and thereby ensure relevance to the project purpose.

It is expected that on future negotiations with the GOG relating to this and the Policy Improvement Components will result in a Project and Strategic Objective M&E system that will contribute to operational dimensions of project implementation, facilitating annual planning and providing justification for course changes if any are necessary. It will allow project, government, and USAID personnel to track effectiveness of interventions and provide the data base for evaluating efficiency issues. To allow the start-up of this effort pending future design work, approximately \$100,000 will be authorized at this time to buy-in to the RENARM Project. Through this mechanism, CARE and other NGO (under MAYAREMA) data collection plans will be reviewed and revised to ensure compatibility with the Mission's Strategic Objectives performance indicators.

## **5.0 PROJECT BUDGET AND FINANCIAL PLAN**

### **5.1 Summary Budget**

The Community Natural Resources Management (CNRM) Project will be implemented over a four-year period at an initial estimated total cost of U.S.\$7.8 million, as follows:

-	USAID Grant	\$3,900,000
-	CARE Matching funds	<u>\$1,610,300</u>
	Sub-total MICUENCA CARE	\$5,510,300
-	RENARM Buy-In	\$ 100,000
-	Project Administration	<u>\$ 200,000</u>
	Sub-total AID	\$ 300,000
	<u>TOTAL</u>	<u>\$ 5,810,300</u>

### **5.2 Detailed Budget and Financial Plan for the Integrated Watershed Management**

CARE will receive a grant for approximately \$3.9 million under a Cooperative Agreement for the activities included under the Integrated Watershed Management component--including FEAT and the estimated MICUENCA share of Monitoring and Evaluation Component

field activities. The amount is expected to cover the following budget lines and amounts:

<u>ITEM</u>	<u>AMOUNT</u> ( <u>\$000</u> )
Personnel	\$1,256.7
Consultancies	\$ 408.0
Training	\$ 287.3
Operational Costs	\$ 894.3
Travel and Per Diem	\$ 105.7
Commodities	\$ 265.5
FEAT	\$ 400.0
CARE Indirect cost recovery (7.6%)	<u>\$ 274.8</u>
<b>TOTAL AID GRANT TO MICUENCA COMPONENT</b>	<b><u>\$3,891.8</u></b>

In addition, CARE is committed to generate a match to the USAID monies, both in-kind and in cash, equivalent to 38 percent of the value of the Integrated Watershed Management component. This provides additional resources equal to \$1,610,300 over the LOP. FEAT counterpart contributions are included in this calculation. The FEAT participants are expected to pay 40 percent of the costs of private extension assistance beginning in the second year. FEAT payments are expected to be completely phased out by the fourth year of private extension assistance to a participant group. The Cooperative Agreement will provide details of CARE's counterpart to be provided to the project. In addition, as part of an Agreement with CARE, it is expected that the GOG will contribute in the form of in-kind personnel services for DIGEBOS and DIGESA personnel involved in the project and operational expenses related to their participation. The Peace Corps will provide up to 20 volunteers for the LOP (80 person/years) at \$25,000/person/year, equivalent to \$2,000,000. Community residents will also make a significant in-kind contribution to the implementation of the project in terms of their equity and labor for local level program management and implementation.

## 5.2 AID Grant Funds Obligation Plan

AID grant funds will be obligated over a three year period, beginning in FY93 as shown in the following table.

**GRANT FUNDS OBLIGATION PLAN (in US\$000's)**

Component	FY93	FY94	FY95	TOTAL
Policy/M&E	0	TBD	TBD	TBD
RENARM Buy-In	100	0	0	100
Direct FSN Contract	75	75	50	200.0
CARE HB 13	1,873	1,000	1,027	3,900
<b>Grand Totals</b>	<b>2,048</b>	<b>1,075</b>	<b>1,077.0</b>	<b>4,200.0*</b>

\* Pending PP Supplement

**5.3 Audits and Financial Reviews**

CARE will be audited annually by their external auditors as prescribed in the Single Audit Act and OMB Circular A-133. No program funds have been contemplated for these routine audits, since these will be financed from CARE resources. Based on the design and negotiation of the PIC & M&E component, any funds not included in the CARE cooperative agreement or A.I.D. direct contracts will be subject to standard terms and conditions of the Recipient Contract Audit program, in accordance with the "Guidelines for the Financial Audits Contracted by Foreign Recipients" issued by the USAID Inspector General and the Government Accounting Office (GAO) "Government Auditing Standards" (1988 revision). Since only activities to be implemented through CARE and A.I.D. direct contracts will be authorized at this time, no funds are currently allocated for audits.

During the implementation of the project, USAID will provide most foreign exchange costs, including long and short term technical assistance and training required to design and operationalize an effective system of technical services and training. Emphasis has been placed in the design to craft the means for establishing a multiplier effect for the technical assistance--through on-the-job and in the field training and training of trainers. Materials will be produced to improve the skills of watershed residents, and PVO counterparts, and to leave sustainable programs to continue human and institutional resource development.

CARE has already successfully sustained programs in integrated watershed management. During this interim project, it is expected that its institutions and their staff will be strengthened to take on strategic planning, improve management and implementation, and establish viable programs for human skills development. By the end

of the four year project period, communities are expected to have acquired and institutionalized a sufficient measure of technical and managerial expertise to be able to initiate a more ambitious program of community natural resource management in the future.

Detailed financial and budget tables are provided in Annex 7.

## **6.0 IMPLEMENTATION ARRANGEMENTS**

### **6.1 Project Implementation Arrangements.**

A Cooperative Agreement will be approved and signed directly between USAID/Guatemala and CARE to provide administrative, financial and technical management services, and both off-shore and local procurement services, for all grant-funded inputs for the Integrated Watershed Management. The required sole source procurement waiver for the Cooperative Agreement contract action has been approved. CARE in turn will enter into Memoranda-of-Understanding (MOU's) and/or sub-contracts, as appropriate, with MAGA and/or other host country public and private organizations, to plan, organize and carry out MICUENCA implementation activities.

### **6.2 USAID/Guatemala Implementation Management Arrangements**

A USDH Project Manager, located in the USAID Office of Natural Resources Management (ONARM), will be assigned responsibilities for USAID/G technical, financial and administrative management and oversight of the CNRM Project. Initially, he/she will be assisted by a FSN Assistant Project Manager, as well as by the ONARM/JCC policy specialist presently detailed to USAID/G under an IPA Agreement. Additionally, the project manager will be backstopped by other USAID/G support and technical offices (including the offices of Controller, Contracts, PDSO, ODDT and T&IO), as appropriate. Long-term staffing requirements will be analyzed and justified in the PP Supplement.

The ONARM Sectoral Implementation Committee, comprising representatives of relevant USAID technical and support offices will meet periodically with project management to review project plans, progress and problems, and will provide advice and recommendations for resolving implementation problems and/or for making program adjustments or course corrections.

The Project Manager will assume primary USAID/G responsibility for technical, administrative and financial management and oversight of the contractor, and for other aspects of the policy improvement component and monitoring and evaluation components, including liaison with host country management counterparts. The Assistant Project Manager, under the supervision of the Project

Manager, will be assigned primary USAID/G responsibility for technical and administrative management and oversight of the CARE Cooperative Agreement and other aspects of the MICUENCA Component, including liaison with host country management and technical counterparts.

The ONARM/JCC Policy Specialist funded for one year with PD&S, will be assigned to serve as the USAID/G principal technical advisor during development and expected start-up of the policy improvement component. Possible longer-term responsibilities will be analyzed in the PP Supplement.

**Summary of Methods of Implementation and Financing.**

<b>Project Elements/Inputs</b>	<b>Method of Implementation</b>	<b>Method of Financing</b>	<b>Approximate Amount (\$000)</b>	<b>Obligation Award</b>
1. Policy Improvement,	TBD	TBD	TBD	TBD
2. Integrated Watershed Management,	Cooperative Agreement with CARE	Federal Reserve letter of Credit	\$3,891.8	Aug. 27, 93
3. Monitoring & Evaluation	Buy-in RENARM/TBD	AID direct/TBD		Aug. 27, 93 TBD
4. Audit/Evaluation	Competitive contract	TBD	TBD	TBD
5. Policy PSC and FSN assistant/other admin.	AID internal procedures/TBD	AID direct pay/TBD		Aug. 27, 93 Aug. 31, 95
6. IPA/JCC	IPA	AID direct Reimbursement	TBD	Aug. 15, 94
7. Training	TBD	TBD	TBD	TBD
<b>TOTAL</b>				

### **6.3 Integrated Watershed Management Staffing**

The CARE proposal plans to use the following mix of persons to conduct the portion of the project under the Cooperative Agreement:

- ◆ Share of CARE Sector Coordinator: 30% of full-time
- ◆ One Full-time Expatriate Project Manager.
- ◆ Local Hire Administrative Personnel
  - Sector Coordinator Assistant: 30% of full-time;
  - Two Full-time Project Coordinators;
  - One Full-time Administrative Coordinator;
  - One Central Office Administrative Assistant: 30% of full-time;
  - One full-time computer assistant;
  - Two Regional Office Administrative Assistants: 35% of full-time;
  - Three Bi-lingual Secretaries in Central Office;
  - Two regional office secretaries: 35% of full-time;
  - Six regional office support personnel: 35% of full-time.

The CARE Cooperative Agreement proposal specifies 30 percent of the time of the sector coordinator as expatriate technical assistance. Other local hire technical assistance personnel are specified as follows:

- ◆ Three regional coordinators: 50% of full-time;
- ◆ Six full-time sub-component coordinators;
- ◆ One full-time training and extension assistant;
- ◆ Seven full-time technical assistants;

### **6.4 Training Plan**

It is expected that all components will use a blend of different types of training--short and medium term, in-country and off-shore, US, CACM and locally led--in order to bridge the gaps identified by the training skills needs assessment conducted during the project design. The endeavors undertaken by CARE and others in the Integrated Watershed Management activities tend to be local and field oriented. The Policy, Monitoring and Evaluation components have the potential for a wider array of types of training activities, blending field, Guatemalan and off-shore courses. Policy dialogue seminars and workshops also form part of this program.

The Technical and Institutional Analyses provide detailed information on the availability in Guatemala of trained manpower

requirements and professional capabilities in-country to carry out the various technical and analytical tasks required for implementing these components. The inventory of ENR professionals (professional skills survey) carried out for the Technical Analysis shows an impressive list of professionals in several disciplines with some training and/or experience in ENR related subjects and activities.

#### 6.4.1 Integrated Watershed Management

Integrated watershed management requires both trained cadres of technicians/field staff and specialists in planning and analytical techniques, including Geographic Information Systems applications. This program will take into account the lack of skills in these areas.

Under this component, six person/months of grant-funded third country training are planned. In addition, grant-funded in-country workshops are planned during the project as follows:

##### Integrated Watershed Management Activity

- 12 workshops for technical assistants
- 8 workshops for coordinators
- 8 orientation workshops
- 5 evaluation workshops

##### FEAT Activity

- 13 workshops for technical assistants
- 4 workshops for coordinators
- 2 orientation workshops
- 5 evaluation workshops

Third country Masters' level training in integrated watershed management is planned for six individuals (twelve person/years valued at \$30,000 per degree).

The CARE proposal provides a more detailed description of and budget for the MICUENCA in-country training program. The respective roles and inputs into training by CARE, DIGEBOS, DIGESA, PVO's and Peace Corps volunteers, as well as counterpart-funded training, will be defined through Memoranda-of-Understanding and/or cooperation agreements between CARE and each participating organization.

#### 6.4.2 Long-term Training

Master's level training is a central element for achieving the long term objectives of upgrading the quality of NRM improvement initiatives in Guatemala. A permanent installed capacity to generate an effective NRM improvement program with analytical skills applied to environmental and natural resources management and policy issues is essential to the success of this

Project. In the anticipated FY 1994 PP Supplement, options for long-term training will be analyzed and up to 16 participants could be trained under the amended Project at a Masters degree level in the following areas:

<u>Specialization</u>	<u>Number</u>	<u>Possible Institutions</u>
Integr. Watershed Mgmt.	6	CATIE
Nat. Res. Management	4	INCAE
Environ. Education	2	University of Idaho
Sociology	1	Cornell, Wisconsin
Nat. Res. Econ./Policy	2	Iowa State, Duke, Yale
Nat. Res. Law/Policy	<u>1</u>	U of Florida
TOTAL	16	

\* Institutions with potentially suitable programs. No commitment made or implied by their reference in this Project Paper."

### 6.5 Implementation Schedule

The planned implementation schedule is as follows:

#### COMMUNITY NATURAL RESOURCE MANAGEMENT PROJECT

August 1993	-	Project Authorized by USAID/Guatemala
August 1993	-	HB 13 Agreement w/CARE signed
November 1993	-	Sign MOU's w/CARE/DIGEBOS/DIGESA/PEACE CORPS/USPADA
December 1993	-	Project Paper Supplement for PC/M&E Component approved
January 1994	-	
September 1994	-	Internal Audit
March 1995	-	CARE Sub-Grant Agreements
September 1995	-	Internal Audit
June 1996	-	Project Impact Evaluation
August 1996	-	Begin Design of Follow-on Project
September 1996	-	Internal Audit

August 1997 - PACD CNRM  
September 1997 - Internal Audit  
September 1997 - Begin Follow-on Project

## 7.0 SUMMARY OF PROJECT ANALYSES

### 7.1 Institutional Analysis

This section summarizes the more detailed Institutional Analysis reported in Annex 4.

INTEGRATED WATERSHED MANAGEMENT (MICUENCA) COMPONENT As described elsewhere, CARE submitted to USAID a proposal for a Cooperative Agreement to continue, expand and integrate its on-going agro-forestry, resource conservation and watershed management activities in Guatemala. The program proposed has been accepted by the Mission and is being incorporated into the CNRM Project as the MICUENCA Component. The proposal includes a detailed review of prior CARE experience in community-based watershed management, a review of the institutional arrangements it has tested and those that will be used for MICUENCA based on that experience, as described in more detail in the above referenced annex.

These prior experiences offer the following lessons for MICUENCA organizational arrangements:

1. Authority for exercising overall coordination and for administration of project resources must be delegated to a management oversight organization that possesses appropriate technical and administrative capabilities, and especially appropriate socio-economic sensitivities;
2. Local community organizations must actively participate in decision-making and implementation during all phases of the project;
3. The single most important inter-organizational element for success is the existence of a relationship of trust and respect between the oversight organization and local community leadership and members.

CARE has had 18 years of experience in Guatemala in managing similar types of successful projects that have been supported with Had project and other AID funds. They already have qualified staff in place and on-going institutional relationships with DIGEBOS, PEACE CORPS, local NGO's and local community NRM organizations. To these field level working relationships will

be added extension personnel of DIGESA, and incorporation of the current organizational structure of the private sector agricultural technology extension fund which has been tested successfully under the HAD project.

The Financial/Economic Analysis concludes that benefits justify costs in on-going projects managed by CARE. This suggests that existing institutional arrangements have been cost-effective. Nevertheless, CARE proposes to review all institutional arrangements now in place to identify ways to make operations even more cost-efficient.

Under MICUENCA, on-going CARE-managed operations in many of the 20 watersheds are expected to continue unimpeded. Those that do not continue to receive support under IWM will be phased out gradually on the basis of a thorough evaluation. CARE will expand its community organization activities to cover up to 30 watersheds by the end of the project.

## 7.2 Technical Analysis

The Technical Analysis reported in Annex 5 describes an extensive array of problems and constraints to improved management and sustainable utilization of renewable natural (biological) resources. In addition, the analysis concludes that although there is a considerable store of knowledge and information about technological solutions to decelerate and revert natural resource misuse and degradation, the application of this technology is severely constrained by instrumental, organizational and process limitations. Two such constraining limitations amenable to alleviation through appropriate external assistance are: 1) lack of an adequate policy framework for encouraging sustainable management and use of natural resources by stakeholders, and, 2) insufficiently defined and tested processes for mobilizing and organizing local initiatives to manage natural resources in an integrated manner at community and watershed levels. The detailed analysis found that implementation of CNRM Project components and activities, and the resulting expected outputs, are technically feasible.

The analysis indicates that the two constraints specified should be accorded highest priority for USAID assistance and should be addressed together for several reasons. First of all, AID experience in Guatemala and elsewhere has demonstrated that without effective mobilization of local initiatives in natural resources management, investments to improve capacity of national institutions to carry out natural resources management improvement programs are largely wasted. Secondly, investments and compliance mechanisms to protect and manage resources will not succeed in the absence of a policy framework that encourages stakeholders to sustainably utilize resources out of self-

interest. Third, positive interactions from successful interventions that simultaneously alleviate both of these constraints will have a multiplier effect that cannot be achieved with only one or the other intervention. Finally, success in alleviating these two constraints will have a positive effect on a number of additional socio-economic variables (e.g., family incomes, long run economic viability of families, improved information and a broader knowledge base, social cohesion within and between communities) linked to other serious constraints, thereby generating considerable spin-off benefits.

From a technical design perspective, the MICUENCA component is the most refined of project interventions in terms of appropriate natural resource management technologies to be applied at the farm level and on publicly-owned upper slopes and rainfall catchment areas. Additionally, there already exists a base of experience relevant to the process dimensions (i.e., the approach and necessary steps for effectively mobilizing and organizing communities to plan, decide and activate improved natural resource management practices both on-farm and off-farm in an integrated and mutually supportive manner. This existing knowhow is the result of a number of assistance activities during the past several years. Especially notable in this regard are the USAID-supported and CARE-managed activities in agro-forestry and watershed management that have been carried out since 1991 under the HAD Project.

The CARE-managed integrated watershed management component of HAD, with DIGEBOS as the primary host-country counterpart institution, has made important progress in learning how to mobilize local initiatives for improving natural resources management. However, there is a need to consolidate and further improve the adaptation and application of technologies and local-level operationalization processes before a technically sound and locally-based integrated watershed management "system" can be considered ready for full-scale replication. This interim CNRM project will permit that consolidation and refinement process to proceed uninterrupted. The detailed technical analysis, and the companion CARE proposal, provide a detailed review of the elements of that system which should receive special focus.

Another important technical reason why MICUENCA should continue on a pilot basis for an interim period is related to the close interaction between the effectiveness of interventions to stimulate locally-based improvements in natural resources management and the objectives of the policy improvement component. The four year interim project period will provide opportunities to effect at least some of the more urgent changes required to improve key elements of the policy framework within which stakeholders make natural resource management and use decisions. Thus, the timing for making available a reliable locally-based MICUENCA system will coincide with having achieved

some basic improvements in the natural resources management policy framework. The synergistic effects of these two factors is expected to make follow-on activities more effective both in terms of replicability and efficiency.

Technical feasibility of the policy improvement component is based on somewhat limited natural resources specific technical and operational experience in Guatemala and other developing countries. Although there is considerable AID experience in macro-economic and agricultural policy analysis and formulation, experience in natural resources policy improvement in a developing country context is rather limited. Nevertheless, the ROCAP/RENARM Project has initiated some ground-breaking work in developing a practical process for carrying out analysis-based natural resources management policy improvement. Some of the steps in that process have been applied on a preliminary basis in Guatemala and other central american countries with the assistance of RENARM.

Additionally, experiences in Latin America in AID-supported agricultural policy improvement work (analyzed in a recent CDIE evaluation) are instructive. Furthermore, Guatemala has been involved in an analytically-based agricultural policy improvement initiative for the past two years. This experience provided especially helpful guidance in framing the proposed operating methodology and implementation arrangements for the natural resources management improvement component.

The detailed technical analysis reviewed the above-referenced sources of technical and methodological information. This was complemented with a detailed analysis of the natural resources-related legal structure in Guatemala. The results of these technical and legal reviews became the basis for designing the policy improvement process to be used in this component. Although implementation involves testing and refining this process and its detailed activities, it also is intended to achieve specific prioritized policy changes determined to be necessary to facilitate locally-based improvements in natural resources management. Thus, while achieving these specific policy change outputs, process methodologies and analytical and dialogue approaches will be refined and made more effective and efficient.

An inventory of natural resources expertise was carried out during the technical analysis. From this, it was learned that there are considerable numbers of experienced natural resources professionals in several relevant academic disciplines but that these are primarily located in the private sector and are quite dispersed among a number of institutions or operate as independent consultants. These human resource conditions, combined with other considerations such as effective internalization of the process and funding limitations, resulted

in a process design that can be implemented primarily by host country professionals with only modest external technical assistance. Additionally, for this and other technical, institutional and cost-effectiveness considerations, this component will be implemented with heavy involvement by and initiatives from the private sector.

Finally, the technical appropriateness of this project, as an interim project, relies significantly on the inclusion of monitoring and evaluation as an undertaking of equal status with the other two components. Adequate baselines and continuing analyzed information about impacts in the field are essential if the interim purpose of the project is to be achieved: to develop processes, methodologies and systems that can be replicated efficiently in subsequent fully operational projects. Additionally, monitoring and evaluation activities will serve as the vehicle to link the other two components. Likewise, these activities will serve to focus national and local community and watershed activities on a common purpose and joint results: improved management and sustainable utilization of Guatemala's diverse and potentially much more productive biological resource base.

### **7.3 Financial and Economic Analysis**

As specified in Handbook 3, the purpose of project financial analysis is to compare present value of benefits from the project with present value of costs incurred by the project and its actors/beneficiaries. On the other hand, the purpose of project economic analysis is to estimate the present value or "net worth" of a project to the country in terms of making the best use of scarce resources. Financial and economic analyses generally apply the same cost-benefit methodologies to determine net present values (NPV's) and internal rates of return (IRR's). The difference is that financial analysis uses nominal values and discounted cash flows to determine project and beneficiary level profitability, whereas economic analysis uses "real" resource costs or "opportunity costs" to determine net benefits of the project to the country as a whole, i.e., its social profitability.

For certain types of projects, Handbook 3 guidance suggests that least-cost methods be applied to determine both financial and economic appropriateness. CNRM qualifies on three counts for the non-standard least-cost approach. This obviates the usual Handbook distinction between financial and economic analysis.

CNRM qualifies for a non-standard approach because:

- 1) It is an interim project which will develop, test and refine elements of an improved natural resources management system for subsequent replication on an expanded basis. Thus, an

unspecified but significant share of total project costs are chargeable to R&D investments that benefit society as a whole. It is inappropriate to scrutinize such investments under the same set of cost-benefit criteria as those used for commercial or infra-structure capital investments.

2) It is focussed on benefits aggregated to the watershed level, as opposed to the individual farm or farmer level. Furthermore, these benefits derive from the interactive and combined impacts of improved NRM activities on enough land in the watershed to positively affect overall watershed natural resource conditions, together with changed behaviour of stakeholders resulting from an improved policy framework. Thus, as in the case of most environmental improvement projects, costs and benefits often are not easily linked either in time or spatially. This often limits the ability to realistically link and value costs and benefits. Results based on approximations and assumptions tend to be highly speculative and may be misleading.

3) The components of CNRM that will be developed in the PP Supplement are expected to stimulate analytically-based policy change, and to measuring impacts of such policy changes combined with changes in the way NRM is carried out at the local level. Such impacts are first manifested through intermediate changes in local organizational and economic functions, roles and relationships, while measureable changes in natural resource physical conditions at the watershed level may not become apparent until after the end of the project. The intermediate changes are more qualitative than quantitative. Also much of the benefit will come from follow-on projects that will rely on the now-proven methods and knowhow. Under these conditions, meaningful cost-benefit analysis is not possible.

For projects with one or more of the characteristics described above, Handbook guidance suggests application of least-cost criteria as the preferred method for determining financial and economic appropriateness of the selected implementation alternative. Additionally, because inputs and direct outputs of the policy improvement and the integrated watershed management components are separate and distinct, each is analyzed separately. Also, monitoring and evaluation costs are allocated between these two components.

In addition to the least-cost analysis, financial data from previous CARE on-farm promotional activities were used to analyze cash flows, costs and benefits for individual farmers who adopted recommended NRM practises. These analyses show quite high NPV's and IRR's. From this, it was concluded that benefits aggregated to the watershed level reasonably may be expected to significantly exceed costs sufficiently to justify the testing activities proposed under CNRM.

Results from the analysis of least-cost implementation alternatives and of farm-level data on costs and benefits are summarized below. The detailed report of these analyses is attached as Annex 6.

Both in absolute terms and when compared with traditional systems, NPV's and cost/benefit (C/B) ratios are quite favorable (using 20 year cash flow projections and a 10% discount rate). NPV's for agro-forestry systems ranged from Q13,576/hectare to Q17,564, with C/B ratios from 2.10 to 2.92, while those for traditional systems were Q4,862 to Q10,086 for NPV's and 1.58 to 2.48 for C/B. Differences between the "with" and "without" systems range from Q5,424 to Q8,911 for NPV's and from 0.27 to 1.58 for C/B ratios.

In the analyses summarized above, there was no reduction estimated in cash flow returns to the traditional system resulting from soil and fertility losses over time (which in turn results in reduced yields or added costs for increased fertilizer needs). These soil and fertility losses are avoided under the agro-forestry system. Traditional systems often need two or more years of fallow every five years, or fertilizer increases of 10-20% annually, to maintain yields over time. It is estimated that these added costs (or yield reductions) would reduce NPV's and C/B ratios for traditional systems by as much as one-third. Thus, comparative net benefits of the "with" system would be even more favorable than those shown.

The above analytical results suggest that financial returns to farmers from MICUENCA interventions are quite favorable. To estimate economic benefits, a proportionate share of component implementation costs must be allocated to each hectare of land converted from the traditional to the agro-forestry production system. The component is projected to directly influence change from traditional to improved NRM compatible systems on a total of 39,500 hectares of farmland, and indirectly through demonstration effects among non-participating farmers, on another 10,500 hectares. Project inputs to this component are estimated at approximately \$7.5 million (including \$600,000 allocated from the M&E component).

Furthermore, the component will provide several off-farm benefits. For example, reforestation of rainfall catchments will result in increased fuelwood supplies and better water management for improved downstream rainfed yields and expanded irrigation opportunities. Likewise, soil erosion will be significantly reduced, both upstream and downstream, thereby promoting infiltration and reducing siltation and natural fertility loss. Many other tangible (but difficult to quantify) and intangible benefits also will result (e.g., availability of tested and refined local organizational and operational models which will permit more rapid and lower cost replications in the future).

It was assumed that off-farm benefits will offset 50% of component costs. Thus, \$3.45 million of component costs must be allocated as investment costs to be charged against hectares benefitted. This project level investment cost per hectare then is \$69, an annual cost of \$6.90 (Q35.00) at 10% interest. This is not a significant added cost when compared to the amount of additional net positive cash flows resulting from the shift to agro-forestry systems as compare to traditional systems.

The current data base for doing financial or economic analyses of NRM improvement activities is very limited in Guatemala. It is even less feasible to analyze economic impacts of policy changes (or the costs of not changing). In Guatemala, as in many countries, the policy framework and poor compliance enforcement result in gross undervaluation of natural resources. Accurate valuation of resources is a prerequisite to formulation of policy instruments that reduce market failures and encourage economic decisions by stakeholders compatible with effective NRM. The M&E component of this project will make a valuable contribution by improving measurement of costs and benefits of NRM improvement interventions.

#### **7.4 Social Analysis**

This section summarizes the detailed Social Soundness Analysis reported in Annex 8.

Focus on Local Stakeholders. CNRM is a bottom up, people-based Project. The central premise is that individual men and women residents of watersheds are the primary stakeholders in sustainable management and utilization of renewable natural resources. As such, they also are the primary decision-makers and actors in natural resources management and in this project. Primary stakeholder organizations expected to aggregate natural resource management improvement decisions, actions and monitoring within watersheds are: 1) individual household units; 2) local community organizations established by decision of primary stakeholders; and 3) watershed-level organizations that serve as a vehicle for joint decisions and programs, if and when local community NRM organizations decide to join together in solving NRM problems.

The household unit is indigenous and already serves as the vehicle by which individual family members interact to decide on and carry out on-farm NRM actions, as well as to determine their position vis a vis more aggregated levels of organization. Local community organizations may be indigenous and charged by stakeholders (through their household spokesperson) with NRM responsibilities, or may be created by stakeholders for this purpose. These community-level organizations will decide on, manage and monitor project-sponsored (and other) programs that assist or impact across households and residents of the community

and/or property within the community. A watershed organization, if and when formed by decision of a group of communities, will decide on, manage and monitor programs that assist and/or impact across NRM community organizations, their households and property within the watershed.

Support Role of Other Organizations. Top-down international, GOG, and host country national, regional and local private sector organizations will play a secondary and complementary, albeit quite important, role in the project. These include the lead organizations responsible for management of funds and provision of technical assistance and other products and services to be made available under the project, as well as a number of other support organizations that in varying degrees will assist in accomplishing the purposes of the project. It is important that personnel at all levels of these organizations understand and accept their secondary and supplemental role in the project, and that this be reflected in their attitudes, approach to and relationship with local community residents, households and organizations.

Importance of the Monitoring and Evaluation Component. Given the central premise and operating model of this project, it is a sine qua non that successful implementation depends on a thorough knowledge and understanding of local household conformation and decision-making processes, as well as those of the communities. Attitudes towards natural resources and production or conservation technologies in their use, concepts of sustainability, and linkages between national policies and problems of natural resource management at the farm, community and watershed levels all are factors that must be understood and taken into account in project planning and implementation. Knowledge about different roles of men and women and their decision-making interactions, interactions for decision-making among the head of household (man or woman) and other family members, interactions across households that influence decision-making, differences or similarities in decision-making based on ethnicity, and differences in community decision-making depending on ethnic mix, all are important variables which should influence the way the project interacts with a given community.

The detailed social soundness analysis found that there is only limited information available to help understand the characteristics of the social variables referred to above. There is even less analysis of this information to provide insights into how interactions among variables affects management and utilization of natural resources, or how and what inputs from outside the community can be expected to encourage desirable NRM responses. This was a major factor in the decision to design CNRM as an interim project and to accord M&E the status of component. Without a detailed local-level socio-economic baseline and continuing information, as well as information on

local decision-making at each level of aggregation, the project cannot develop workable models for refinement and/or replication, either of the NRM policy improvement process or of community-based integrated watershed management.

Linking Mechanisms. There are serious gaps between national and local level institutions and individuals. Linking mechanisms and/or umbrella institutions must be sought out or be established to fill this gap. Likewise, it is important to identify community leadership and existing local organizations that now are involved in, or have the appropriate characteristics to become involved in NRM improvement initiatives. Often, rather than single out one local organization for participation (e.g., a municipality) which may not be representative of the community, it often is more productive to work with local leaders from several community organizations.

Gender and Ethnicity Considerations. There are a number of misconceptions concerning relative roles of men and women in rural Guatemala. Urban residents tend to stereotype rural women as passive, non-participatory, and with only minor roles in most household economic decisions. However, the existing data and information base, although quite thin, indicates that both women and men exercise important household and community roles especially in production and natural resource use decisions. Thus, since both men and women have responsibilities in activities and decisions that affect natural resources, both women and men should be participants in related training and technical assistance activities.

In many agricultural and natural resources projects, the most disaggregated unit of analysis is the household and the male is assumed to be the head-of-household. In Guatemala, the person who represents the household in public is often the male, except where no adult male is present. Consequently, the roles of other household members frequently are ignored to the detriment of the project. Gender analysis will be an integral part of the monitoring and evaluation component of this project in order to recognize and accommodate the diversity in division of roles and decision-making among men and women in beneficiary households.

Data generated for baseline and continuing analysis purposes should also be disaggregated by ethnicity. Even though all ethnic groups are users and abusers of the natural resource base, the approach to and the manner in which different ethnic groups may be encouraged to participate may vary. Also, ethnicity should be determined by "self-identification", rather than on the basis of some objective measure such as language.

Project implementation staff, from the national level to the local level, should be trained to understand gender and ethnicity considerations. Data collection and analysis, training and

technical assistance programs should reflect these considerations. Additionally, a goal should be to reflect the gender ratio of the beneficiary population in the staffing pattern and training programs of the project.

Past Experience and Future Analysis to Guide the Project. A number of lessons have been learned about social considerations from past CARE activities in integrated watershed management. These have been incorporated into the design of the project and should enhance its social soundness. However, there is an urgent need to better document a more reliable baseline together with on-going results, and to assure that the latter can be measured effectively against the baseline. Likewise, RENARM project experience shows the importance of an appropriate baseline and local-level perceptions of NRM problems linked to specific policies. Without these, it is not possible to prioritize a policy analysis and action agenda that is responsive to local needs, or to measure local-level impacts when a policy change has been achieved.

The M&E component will assist to assure social soundness of CNRM. It will provide the information base to enhance social responsiveness of the other components. Project management must incorporate on a continuing basis lessons learned from the M&E analysis of impacts on social and socio-economic variables discussed above. Gender, ethnic, local leadership and organizational factors will receive special attention.

The analysis summarized above found CNRM to be socially sound.

## **7.5 Environmental Analysis**

More than 80% of Guatemala's GDP is ultimately generated from the natural resource (NR) base. This coupled with the severe rate of environmental degradation is prompting both public and private sector entities to take more active roles in managing the country's NR. It's visible that the GOG overall strategy in addressing the question of natural resource management is considering the environment as a basis for developing the rural area.

In the other hand the USAID/Guatemala Mission completed an Initial Environmental Examination for the proposed project "Community Natural Resource Management, (No. 520-0404)" six million dollar 4-year program designed to continue the watershed management component of the HAD II Project (No. 520-0274). The new Project Description includes three components: Integrated Watershed Management; a special fund for Private Technical Assistance (FEAT) and Natural Resource Management Policy.

For the four million dollar Watershed Management Component, USAID/Guatemala recommended that no environmental review needed to be taken since in general, the component will carry out many of the same activities implemented under the HAD II Project, which had already completed an Environmental Impacts Assessment containing a lengthy set of mitigation measures for foreseen negative impacts. USAID/Guatemala related that Components 2 and 3 (FEAT and Policy) are to provide technical assistance that will promote sound natural resource management and that no field activities nor purchase of commodities were envisaged under these latter components. AID/ Guatemala therefore requested a categorical exclusion according to Section 216.2 (c) (2) (i) of 22 CFR. Based on those arguments, the Mission recommended on 12/21/92 that the new project be given a negative determination requiring no further environmental review.

On January 27, 1993, the LAC/DR/E Washington issued an Environmental Threshold Decision (LAC-IEE-93-08) acknowledging the potential value of the HAD II Project EA, and stated that prior to approval for the use of this EA for watershed management activities under the new project, the document should be evaluated to assess its strengths and weaknesses and discuss how recommended mitigations could be applied to the Community Natural Resource Management Project.

Components 2 and 3 were categorically excluded. Finally, LAC/ER/D mandated that the project cannot involve the procurement or use of pesticides nor support for procurement of equipment or for activities that could lead to deforestation without first receiving the LAC Bureau Environmental Officer's approval of the appropriate Environmental Assessments.

There were identified 4 areas where negative environmental effects may be related to Project activities. The areas are: 1) Pesticide contamination. 2) Soil and water quality changes arising from intensive cultivation and use of high doses of chemicals, 3) Soil and water conservation, and 4) Homogeneous plantations and secondary forest management. In addition, it was recommended that the EA shall include:

- Identification of the potential problems related to pesticide and fertilizer use, and other potential impacts resulting from Project activities;
- Evaluation of the environmental, economic and social costs and benefits of the current practices related to these activities;
- Recommendations of specific measures to mitigate the potential negative environmental impacts under the Project;

- Evaluation of institutional capabilities, laws and regulations, and constraints for effective implementation of recommended measures.

The Regional Environmental Advisor was requested by the USAID/Guatemala ORD to perform these duties and he suggested 18 mitigation measures for Project:

- 1) Continue implementation of certain mitigation measures under HAD II EIA. (Table 2).
- 2) The CNRM Program must interface with existing AID and other Family Planning and Child Health programs as a component of the environmental education programs of CARE to disseminate child health, and child spacing information.
- 3) Continue with strong interaction of pesticide/IPM component of RENARM Project, but include traditional agriculture aspects of IPM as well, such as crop rotation, and fallowing.
- 4) Provide retail agrichemical outlets in and near project watersheds with Technical Assistance in pesticide management for local communities.
- 5) FEATS cannot recommend pesticides that are not USEPA - approved.
- 6) Perform periodic measuring of environmental pesticide loads in the dry season (Feb - April) using bioindicators such as boat-tailed grackles or turkey vultures or mother's milk plus water and soils, since HAD II indicated soil contamination during the rainy season. This monitoring activity should be kept simple, relatively inexpensive and applicable to pragmatic solutions. The Office of the Regional Environmental Officer could lend technical assistance in the design of such a monitoring system. Local Guatemalan pesticide residue laboratories currently have the capacity to assess soil, water and tissue samples. A budgetary line item in the Project should be established for completion of this monitoring. Estimated costs should not exceed \$3000-\$5000 every other year during the life of the project (Total maximum of \$10,000).
- 7) Continue with roadside stabilization plantings with willow (*Salix*), Aliso (*Alnus*), ~~Erythrina~~, etc. Use native species where possible.
- 8) Continue with sufficient Technical Assistance on irrigation activities to prevent excessive runoff and soil saturation.
- 9) Continue with courses on maintenance on irrigation systems, springs, and other components of existing irrigation.
- 10) In lands under mini irrigation for 5 years or more, comparative tests should be made for nutrient content and salinity.
- 11) Terraces need to be maintained for long term. Community Policy for terrace maintenance responsibility and training need to be accomplished.
- 12) Same with living barriers. Grass species should be appropriate species that have multiple uses (such as vetiver grass).
- 13) Same with living fences and dividers. Should include as many species as possible. Link to Madeleña Project.

- 14) Fruit work to build upon AID-DIGESA fruit improvement programs. Existing fruit varieties within community nurseries should be gradually replaced with improved varieties. If not possible, apples should be phased out of program and not be included in the agroforestry program due to their special grafting and disease control requirements.
- 15) Some forest stands should not be managed on a sustained yield basis of timber products. They have greater value as protected watersheds (sustained yield of water) than timber. These watersheds should be identified and protected.
- 16) During forest management, practicing clear cutting and block cutting are to be avoided. Purchase of chainsaws and other extraction and processing equipment for timber management must be accompanied by a specific timber management plan based on sustained yield per watershed before purchases are permitted for the project.
- 17) Forest Management and Farm Management. Before exotic species are introduced into the watershed for planting or for nursery establishment and improvement, the plant material must be inspected by authorized professionals for plant health. Diseased or infested stock should be destroyed before introduction of said materials into Project watersheds. Exotic fruit tree stock is to be included in this category.
- 18) During program monitoring and evaluation, compliance with mitigations should be determined and adjustments made if necessary as determined by Mission Environmental Officer or Regional Environmental Advisor.

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CNRMPP.64  
8/18/93

**COMMUNITY NATURAL RESOURCE MANAGEMENT**

**PROJECT PAPER  
(520-0404)**

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**Office of Rural Development  
July 2, 1993**

**COMMUNITY NATURAL RESOURCE MANAGEMENT**

**PROJECT PAPER  
(520-0404)**

**ANNEX I**

**LOG FRAME**

**Office of Rural Development  
July 2, 1993**

Annex 1  
PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK \*

Project Title & Number:

Life of Project:  
From FY 93 to FY 97  
Total U.S. Funding \_\_\_\_\_  
Date Prepared: \_\_\_\_\_

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goal: To improve the long-term social and economic well-being of the rural poor through improved management and sustainable use of natural resources</p> <p>Sustainable Management of the Natural Resource Base</p>	<p>Increased sustainable incomes from natural resource-based production</p> <p>Decline in deterioration rates of natural resources (soil erosion, deforestation, pesticide contamination...)</p>	<p>National statistics/surveys</p> <p>Baseline and followup surveys of project's M/E System</p>	<p>Sustained political will to promote legislative and institutional support for natural resource management programs</p>
<p>Project purpose</p> <p>To achieve sound policy improvements that promote sustainable management and use of natural resources</p> <p>To develop and replicate sustainable, community-based natural resources management models in upland watersheds</p>	<p>Improved NRM policy implementation and/or enforcement by public institutions</p> <p>New or revised policy legislation</p> <p>Increased use of sustainable NRM practices among target groups</p> <p>Increased land area under improved natural resource management</p>	<p>Project M/E System baseline, followup and impact analyses</p> <p>New donor initiatives replicating project ideas</p>	<p>Sustained political and social will to decentralize decision-making authority to community levels</p> <p>Sustained political will to enforce NRM legislation</p> <p>Public Sector NRM institutions will receive sufficient financial and technical support to increase effectiveness</p> <p>Through sufficient training and education local communities will accept and adopt improved NRM practices</p>
<p>OUTPUTS</p> <p>Watershed Management: Improved incomes for small farm families upland watersheds</p>	<p>6,500 farm families in 30 watershed with increased in incomes</p>	<p>Project M/E System reports and evaluations</p>	<p>GOG agencies and local organizations can be trained sufficiently to provide proper and sustained technical service to the communities</p>

\* Note that policy and M/E related indicators are illustrative and may be adjusted and part of the development of FY 1994 PP Supplement. The will serve as preliminary framework for that effort.

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Increased upland land area under improved management	39,500 hectares under improved management		
Improved technical capacity of public-sector NRM institutions	50 DIGEBOS and DIGESA technical extension agents trained in improved NRM practices		
Improved local technical capacity to plan and implement improved NRM practices	6,500 small farmers and up to 60 community organizations trained in improved NRM practices and community organization	Project M/E System reports	AID and GOG fully fund commitments
Policy:			
More effective legal and institutional framework for policy change	4 major legislative actions influenced that change NRM policies		
Design and implementation of policy analysis agenda	8 policy analyses conducted and results disseminated 2 field level NRM surveys of NRM practices and perceptions		
Active policy dialogue and educational awareness programs	25 policy dissemination and dialogue events held 40 policy specialists trained		
Trained cadre of policy formulation specialists and decision-makers			
Monitoring & Evaluation:			
An operational M&E system that is monitoring achievement of the Strategic Objective and measuring/reporting on the impacts of the NRM program	15 M&E technicians trained 1 completed M&E system operating w/i project progress in office 11 information dissemination events held		
Local capacity developed and effectively operating M&E system effectively	Midterm and final project evaluations completed and results utilized to improve project implementation and impact		

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**NARRATIVE SUMMARY****OBJECTIVELY VERIFIABLE INDICATORS****MEANS OF VERIFICATIONS****IMPORTANT ASSUMPTIONS**

----- USPADA and project specialists trained and operating M&E system effectively

**Inputs:****Watershed Management:**

USAID Technical Assistance	Tech Asst	\$ 408,008
Training	Training	\$ 287,300
Commodities	Commodities	\$ 264,950
Spec. Fund. for Private	FEAT	\$ 400,000
Tech. Ass.		
Operational Support	Operations	\$2,531,503
CARE/FEAT Tech. Support/Oper.	Tech/Oper	\$1,610,300

USAID Personnel	Personnel	\$ 200,000
Monitoring & Evaluation	M&E	\$ 100,000

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*July 2, 1993*

***COMMUNITY NATURAL RESOURCE MANAGEMENT***

***PROJECT PAPER  
(520-0404)***

***ANNEX II***

***INSTITUTIONAL ANALYSIS***

***Office of Rural Development***

## ANNEX 2: INSTITUTIONAL ANALYSIS.

### I. DESCRIPTION OF ANALYSIS METHODS AND RESULTS.

Each component of the CNRM Project will have distinct administrative and institutional arrangements for implementation. Thus, administrative and institutional aspects for each will be analyzed separately. Additionally, institutional arrangements need to assure appropriate inter-action, complementarity and feedback among the three components of the project. This analysis addresses both aspects.

#### A. POLICY IMPROVEMENT COMPONENT (PIC).

1. Setting. The policy improvement process in Guatemala can be characterized as being ad hoc, special-interest driven, discontinuous, and with little analytical input. The process of improving policies that impact on sustainable management, utilization and protection of renewable natural resources (NRM policies) is no exception. In fact, since NRM policy areas invariably cut across traditional public sector (and often private sector) institutional lines, NRM policy tends to be viewed by a number of institutions as their province. However, no institution(s) appear to be willing or able to assume primary responsibility for achieving technically and analytically sound policy changes. In fact, most institutions in Guatemala with a possible or perceived role in improving NRM policies do not even recognize the complex and demanding process required to assure that policy changes are appropriate and effective.

More specifically, the institutional setting for implementing a policy improvement process is characterized by highly dispersed public and private sector institutional interests in NRM policy improvement, combined with limited numbers and highly dispersed professional talent with specialized knowledge and experience relevant to NRM policy improvement. No one organization appears to have a "minimum mass" of institutional capacity or qualified talent sufficient to successfully assume leadership for in-house implementation of PIC. Nevertheless, dispersed among the various organizations, and among the ranks of individual consultants, a modest level of well-qualified and experienced professional talent exists in a number of specialized areas needed for PIC implementation. Additionally, some organizations have a minimum mass of qualified professionals, or the capacity to assemble them, sufficient to permit successful execution of discrete actions and/or activities required in implementing PIC.

The setting for PIC implementation also is characterized by relative newness of analytically-based NRM policy improvement initiatives and of organizations that might become involved:

-A systematic approach to indicative (as opposed to directive)

policy change efforts in Guatemala began with macro-economic policies in 1985, stimulated and supported by advice and encouragement from IMF and World Bank; modest systematic sector level policy analysis (especially in agriculture, livestock and forestry) began in 1991 with the change of government, also with World Bank encouragement and support; efforts to take an analytical approach to NRM policy improvement began in 1991 on an ad hoc basis, primarily through formation of working groups supported by external donors. For example, different working groups have put forward proposals for a new forestry law, irrigation law, and plant health law. Lack of an institutional mechanism to exercise quality control and to coordinate/cross-communicate has resulted in widely disparate quality within and among proposed bills, some of which have gone to congressional committees, and in inconsistencies and cross-purposes among proposed dispositions from one proposal to the other.

-Also, in general, NRM-related organizations, whether public or private, are relatively new. Most are less than five years old, are still seeking financial viability, and have not yet consolidated their purposes or "niche". Since NRM policy improvement per se is not usually the primary focus for these organizations, none as yet has made much progress in consolidating more than minimal capacities in policy work.

The Technical Analysis Annex provides a detailed description of the technical complexities of an orderly and analytically sound policy change process as applied to NRM policies. These technical complexities also mirror the organizational challenges presented by PIC.

2. Critical Nature of Organizational and Implementation Arrangements for Policy Improvement. Selection of implementing organizations, and their respective roles, is the single most important design challenge for successful implementation of PIC. A number of often competing and seemingly incompatible needs are involved.

As in most AID assistance projects, the organizations involved and their capacity to bring to bear appropriate professional talent will determine the extent to which interventions are made in a technically and analytically sound manner. Additionally, in policy improvement interventions, a host of other rather unique institutional talents are required, of a variety and in combinations seldom necessary for AID projects: 1) ability to access and interpret local NRM problems will determine relevance of policy changes sought; 2) the public and political image, and linkages to policy "legitimizers" and decision-makers, (and those which are maintained or can be formed in the future) will determine the fate of their policy change proposals in the legal approval process; 3) ability to dialogue with and educate the general

public, opinion-leaders and interest-groups in a manner that achieves understanding and willingness to compromise will determine acceptance of changes. The latter in turn determines whether or not policy changes that have become law will make a difference in practice, i.e., whether or not they will change behavior in practice or become a "dead letter."

The versatility required in such a politically sensitive setting as the NRM policy change process places a much greater than normal burden on implementing organizations for PIC. In this respect, an oft-used solution in AID projects for resolving managerial, technical and administrative weaknesses of host country institutions is to contract external technical assistance to fill the gaps. Such a solution must be approached with extreme caution in the case of policy change, since sensitivities to "foreign interference in internal affairs" are quite real. Neither will the option of focussing resources (financial, training and TA) to build needed capacity in one or a few institutions achieve the desired results when the subject matter (such as NRM policy changes) cuts across so many sectoral and economic, as well as public and private, often vested and conflicting, interests, and directly affects geographic areas as diverse as the Central Highlands and the Northern Petén.

Nevertheless, there are feasible organizational options available for successful implementation of NRM policy changes in the context of current conditions in Guatemala.

3. Organizational Alternatives for PIC. An important axiom for selecting implementing mechanisms in any project design process is: "Do not establish, or expand the role of, an organization before its time". In other words, AID resources may be used to create a new organizational structure, or to establish a new role within an existing structure. However, if the result does not fit a compatible niche within the existing institutional context, the creation likely will not gain needed host country support, either from the GOG or the private sector. Furthermore, it is not likely to survive beyond the period of AID funding.

A companion axiom is: "Where institutional roles are unclear or unstable, do not put all your resources in one institutional basket". In other words, in an unsettled institutional situation, prefer flexible arrangements over rigid ones. Thus, for PIC, which is to be implemented in an institutional and organizational milieu that is as yet quite unsettled, one should seek flexible organizational arrangements that can be adjusted as institutional evolution progresses.

To establish an objective basis for applying the above axioms and other operational needs criteria to reach realistic conclusions about arrangements for implementing PIC, a capability analysis was carried out of public and private organizations of national scope

whose functions and/or demonstrated interests relate to improving policies impacting on sustainable management and utilization of natural resources. Additionally, these capabilities were linked to institutional roles and activities that will be required for PIC implementation. This analytical undertaking was carried out by two well-qualified and experienced Guatemalan NRM institutional specialists, with guidance from the ORD/JCC policy advisor.

4. Analysis Methodology.

a. Preparation of a List of Relevant Organizations: Knowledgeable persons known to USAID staff were contacted to assist in compiling a list of 21 natural resource-related public and private sector organizations with probable interest and/or capability in NRM policy improvement activities. This list was sub-divided into a primary group with relatively broad-based interests and capability in the subject, and a secondary group whose interests appeared to be more narrow and/or collateral to the subject. Ten organizations comprised the primary group, and 11 the secondary group. In both groups, there was representation by dependencies of Ministries, semi-autonomous public organizations and private research organizations. The primary group also included SEGEPLAN and two limited-purpose organizations that had been formed through agreements between the GOG and external donors (one through multi-lateral donors and the other through a bi-lateral donor). These latter organizations are not legal entities and therefore cannot directly administer funds. In addition, one private university (and an associated research institute) was added to the in-depth review.

b. Interviews and Self-Evaluation Surveys of Organizations: Personal interviews of representatives of the primary organizations were conducted by two Guatemalan specialists. These were guided by a checklist of questions related to organizational characteristics, legal status, experience in the subject matter, staffing, finances, and attitudes and views about natural resources and related policies. Responses were recorded in writing by the interviewer. Additionally, the interviewed representative of each organization was asked to complete a "self-evaluation" matrix-type questionnaire (either with the interviewer immediately after the interview, or later, as convenient). This questionnaire requested information about the organization's past experience, present and potential capacity to carry out specified functions within distinct activities expected to be required in PIC implementation. Respondents were asked to indicate the capacity of their organization in each of the 210 combinations of ten functions within seven activities, each in terms of past, present and potential, using a scale of 0 to 3, where 0 represented no capacity and 3, high capacity. Respondents were encouraged to provide supplemental comments or observations. The questionnaire was designed to require 20-30

minutes to complete.

Organizations on the secondary list were not interviewed. However, they were invited to complete the self-evaluation questionnaire. Eight questionnaires were completed and returned by these organizations.

c. Survey of Guatemalan Experts: Based on information gathered in the interviews and on personal knowledge, the two interviewers prepared a list of 30 Guatemalan experts in natural resources-related policies considered to be the most knowledgeable and experienced among their peers. An "expert opinion" survey was conducted for this group. This survey used a matrix-type questionnaire with the seven expected activities included in the self-evaluation questionnaire matrixed with the ten primary organizations. Experts were invited to rate each of the organizations, for which he considered himself to have sufficient knowledge, in terms of perceived capacity to implement each of the indicated activities. Ten experts completed and returned the questionnaire.

d. Drawing Conclusions and Summarizing Results: At this point in the analytical process, the two experts who carried out the interviews became institutional analysts. Based on their expert knowledge of the Guatemalan NRM institutional setting, together with information from interviews and questionnaires, these analysts prepared reports reviewing results of the interviews and surveys, and their conclusions about relative and absolute capacities and potentials of each of the organizations to participate in PIC implementation. Additionally, together with the policy advisor, they participated in a consensus-building exercise for reaching agreement about choices from among the ten primary organizations (and other organizations, if appropriate) to perform different roles for implementing the various responsibilities and actions required at the overall PIC program level and at the various activity levels (using the same activities as those used in the questionnaires). Responsibilities and actions considered, by program and activity levels, are as follows:

**(I). PIC PROGRAM ADMINISTRATION AND MANAGEMENT LEVEL**

**(A). General Management and Oversight**

- Planning, programming & budgeting (PPB)
  - =Program level (LOP & Annual)
  - =Activity level (LOP & Annual)
- Manage execution of PPB
  - =Develop detailed activity plans
  - =Develop terms-of-reference (TOR's)
  - =Select sub-contractors
  - =Supervise/monitor contract execution

(B). Administration of PIC Funds

- USAID Funds
- Counterpart Funds

(C). Provision of Logistic Support

- Offices, equipment, support personnel
- Management of Training Program

**(II). PIC ACTIVITY IMPLEMENTATION LEVEL**

(A). Identify Problems

- Technical management/coordination
- Select/apply methodology
- Collect information
- Interpret results and prioritize

(B). Identify/Prioritize Policies

- Technical management/coordination
- Select/apply methodology
- Carry out inventory
- Synthesize inventory
- Relate inventory to problems
- Prioritize policy analysis agenda

(C). Analyze and Select from Among Options

- Technical management/coordination
- Technical/institutional analysis
- Socio-economic analysis
- Legal/jurisprudence analysis

(D). Formulate and Draft Documentation

- Technical management/coordination
- Conceptualize framework and elements
- drafting
  - draft legal dispositions
  - analytical annotations

(E). Dissemination and Dialogue

- Technical management/coordination
- Preparation of materials
- Organize/execute events

(F). Facilitate Legal Approval

- Technical promotion
- Political promotion

(G). Facilitate Initial Application

- Plan structural adjustments
- Manage/execute training

For each responsibility and action listed, the possible role of the organization was first identified by selecting from among the following choices: (A) Leadership/Oversight Role, (B) Auxiliary/Supporting Role, (C) Minor/inferior Role, and (D) No Role. For those organizations identified for a possible leadership/oversight or auxiliary/supporting role within a responsibility or action, consensus also was sought on other qualitative measures of the appropriateness of selecting that organization to perform the assigned role:

(A) Capacity level to perform the assigned role: Superior, average or low.

(B) Mode by which the organization could be expected to perform the role specified: Primarily using "in-house" capacity, by contracting for the majority of the personnel and/or execution of responsibilities, or by a combination of both modes.

(C). Level of resources (whether from grant funds or counterpart) required to permit satisfactory performance in the indicated role and/or to have the capacity to satisfactorily carry out the duties or actions indicated: Limited, "normal/average" for external assistance projects, or "high" for external assistance projects.

##### 5. Results of the Analysis.

The institutional analyst's reports and the consensus building exercise served to synthesize and focus the information collected from the interviews and surveys. The results are summarized below (organizations with similar results are grouped together).

DIGEBOS and DIGESA: For these two organizations, the consensus is that they will perform only minor roles at the overall program level and for most activities. They could be helpful as a conduit for information from watersheds, and through participation in working groups related to technical aspects of PIC programs and activities. For the Problem Identification Activity, the role of both organizations becomes more important as a source of more detailed information about policy-related NRM and utilization problems manifested at the watershed level, and for purposes of monitoring and evaluating impacts of policy changes in watersheds. Thus, for this activity, they likely would perform a supporting role and may receive and administer counterpart funds to defray associated costs. As a footnote, this important information supply role of DIGEBOS and DIGESA for PIC probably should be one of the outputs built into the IWM component as its contribution to interaction among CNRM components.

CONAMA: The role that CONAMA should perform in PIC implementation is difficult to assess. On the one hand, the law creating CONAMA assigns it important responsibilities related to NRM policy improvement. On the other hand, CONAMA is an organization with little technical and/or analytical capability. Additionally, it operates at a very high political level where it is difficult, if not impossible, to bring forward technically and analytically sound policy change proposals without immediately casting them into a politically charged context that often may compromise success in the legal approval process.

In this respect, evaluations of AID-supported policy improvement

projects in Latin America are instructive. Orderly and analysis-based policy improvement initiatives are most likely to be successful when major activities associated with that process are sponsored by an organization not closely identified with one political persuasion or politically prominent person (and especially not with the party in power towards the end of their administration). If one political persuasion or politically prominent person becomes an advocate during the dissemination/dialogue phase of the change process (especially if this is combined with support from several other groups, thereby diluting the "ownership" of the proposal), prospects of an initiative being branded as politically motivated (or of suffering from political backlash) are considerably diminished. At the same time, it must be recognized that political support is an essential part of the policy change approval process. Ideally, that political support can be achieved on a broad popular base through proper dissemination and dialogue.

The institutional analysts concluded on the basis of the information gathered, that CONAMA should be associated with PIC in an auxiliary or supporting role, both at the program and activity levels. Nevertheless, it must be accepted that if that role requires more than token technical or analytical input, CONAMA capacity to respond is, and is likely to continue to be for some time, rather low. Thus, a two pronged strategy is recommended for optimizing potential benefits from CONAMA participation in an auxiliary and supporting role.

At the program level, CONAMA leadership should participate in the review and consensus-building process through membership in a high-level Consultative Group and in a program management working groups. To the extent that CONAMA has technical talent available, they should participate in specific task forces for specific actions and priority setting in the following activities: policy identification/prioritization, dissemination and dialogue, and facilitating both legal approval and initial application. They should receive transfers of counterpart funds for direct administration to defray costs of performing these supporting roles.

Additionally, in order to increase over time the level and quality of CONAMA supporting contributions to NRM policy improvement, project counterpart funds and grant funds, as appropriate, should be made available to provide short-term TA and training, both in-country and off-shore. Basic office furniture and equipment could also be provided on a selective basis if and as available from prior AID-funded projects or USAID surpluses. Finally, if progress in assuming statutory duties and responsibilities warrants, a key technical management level staff member could be sent to the US for long term training at the Masters level in one of the social sciences, with specialization in applications to NRM policy impact analysis. This training will assist CONAMA to assume a more

effective role in monitoring NRM policy impacts, as discussed in a later section. It also should be kept in mind that a recently approved \$2.0 million non-reimbursable grant from BID for CONAMA institution-building will eventually upgrade CONAMA's technical and managerial capacities.

CONAP and UAP: These are discussed together, not because of any organizational similarity or commonality of purpose, but rather because neither appears to have more than a minor role to perform in PIC implementation, with one possible exception. UAP is a special purpose organization (not a legal entity, i.e., not a "juridical person"), formed under an external assistance agreement with the Ministry of Agriculture. UAP has only one possible role in PIC: Because of its functions as the administrative and programming unit for many of the activities of host country organizations under HADS, UAP presently controls considerable office furniture and equipment procured with grant funds and occupies facilities constructed with HADS funds. All of this will cease to be used for its original purpose when HADS terminates at the end of this fiscal year. With Ministry of Agriculture approval, this logistic support capability could be made available, as individual items, to fill the logistic support needs of PIC. Counterpart funds could be made available to pay associated operating costs. Since none of the personnel of UAP have any experience with technical or analytical aspects of NRM policy improvement, UAP has no capacity to execute any technical or analytical activities contemplated for PIC.

CONAP exercises regulatory, administrative, management and control functions related to national parks, reserves and protected areas in The Petén. Thus, they have a peripheral interest in NRM policy as it may help or hinder their functions. However, it became clear in the interview that they have no capability and only peripheral interest in NRM policy improvement activities. Furthermore, it apparently is not an area in which they wish to become directly involved.

Nevertheless, PIC should maintain liaison with CONAP. They can serve as a source of information about policy-relevant problems and issues of importance at the local level in The Petén. In addition, where protected areas will be affected by proposed policy improvements, CONAP may be able to contribute input into activities of dissemination and dialogue, in facilitating legal approval and initial application, and in feedback of impacts of policy changes.

SEGEPLAN: SEGEPLAN was included in the ten organizations for in-depth analysis because of its central role in developing medium and long-run public investment plans and growth targets, coordination of external assistance, monitoring and evaluation of trends in private sector investments and incomes, and tracking overall national economic performance. They were the primary architects of the GOG economic and social policy program for 1991-96, and they

have provided some input into recent initiatives in NRM policy, such as the proposed forestry and water laws, since these have impacts at the macro-economic level. Information obtained in the interview and self-evaluation clearly identify SEGEPLAN as an organization with some interest in proposed NRM policy improvement interventions, particularly when such interventions involve external financing, or when proposed changes may impact on public investment requirements, private sector investment patterns, affect economic growth trends, etc.

SEGEPLAN can be a source of statistical and analytical information at the macro-economic level. They also could contribute to some types of economic analysis required under PIC. In operational terms, it would appear that SEGEPLAN could make useful contributions from a macro-economic perspective as a member of the Consultative Group, and perhaps by participating in working groups or task forces that may be established from time to time to advise on methodologies for particular analytical issues. Additionally, their contribution could be significant by contributing a macro-economic perspective in the NRM policy dialogue process, and in facilitating legal approval and initial application of policy changes, especially if the latter involves significant institutional adjustments and/or has significant public investment implications.

ASIES, CIEN, FUNDARY and Universidad Rafael Landivar (and the associated Instituto de Investigacion Economico y Social) -- URL\IIES: These are four private sector organizations reviewed in depth. ASIES and CIEN both have been functioning for approximately five years, and in that time, have become respected research consulting organizations. They both have made valuable analytical contributions to policy dialogue, primarily at the macro-economic level and oriented toward the business community. Nevertheless they both have expertise in some agricultural and NRM policy areas as well. Although their permanent professional staffs are modest, they can access a considerably larger number of experienced professionals on a consulting basis when the need arises. Both also have considerable experience in dissemination and dialogue activities, including preparation of informational materials, organizing and managing seminars, workshops, technical meetings and similar information transfer/discussion events.

Both ASIES and CIEN have been USAID contractors, and therefore have experience in working under AID regulations and administering AID funds. ASIES currently is the contractor for a USAID activity providing analytical and informational support to the Guatemalan congress (managed by the USAID/ODDT).

FUNDARY is a young and small organization, having initiated its activities in 1991, and with a current professional staff of six. Of the four organizations, this is the only one focussed exclusively on natural resources. It has an expressed interest in

the full range of NRM, except fisheries (i.e., forests, water, soils, flora and fauna, and bio-diversity). Currently, FUNDARY appears to be more involved in field implementation of projects than in analytical activities related to NRM policy improvement. Furthermore, its activities are concentrated primarily in protected areas.

FUNDARY expressed strong interest in focussing greater efforts on NRM policy improvement activities. Staff professionals are experienced in planning, technical and administrative management of NRM-related activities, but not necessarily policy improvement activities. They also have installed capacity and experience in administration of external donor funds. They have administered AID funds under the MAYAREMA project.

The Universidad Rafael Landivar (URL) was selected for in-depth review because it is a private university that recently has demonstrated strong initiatives in giving greater prominence to the natural resources management aspects of its teaching and research programs within the Faculty of Agronomy and Natural Resources. Additionally, the university's companion "Institute for Economic and Social Research - IIES" has demonstrated effectiveness as a vehicle for linking professors and students to research opportunities. Also, URL has some experience in implementing USAID-funded programs in the past.

URL\IIES potentially could play an important institutional role in NRM policy improvement if a decision were to be made by the GOG and/or USAID to base the analytical, formulation and dialogue\dissemination steps of the policy improvement process in an apolitical private sector organizational setting.

The analysts agree that all four of these private sector organizations fulfill many of the characteristics needed to perform an important and perhaps major role in most of the activities associated with PIC implementation, both at overall program and at separate activity levels. Their technical and managerial experience and capabilities in these types of undertakings suggest that they could make important contributions to nearly all of the PIC activity areas, except for ASIES and CIEN in the problem identification activity. They also have experience and installed capacity to qualify them to administer PIC funds.

The analysts discussed extensively the feasibility of one or more of these organizations assuming the leadership role for overall program management and oversight. They concluded that the technical and managerial competence exists to consider this as an option. However, several caveats were raised that resulted in a consensus decision to recommend that they be considered for auxiliary and supporting roles, both at the overall program and activity levels, until and unless the GOG and/or USAID makes a policy decision to the contrary. The caveats are as follows:

a. Even though the private sector can and often does make important and critical contributions to the policy change process, policy change must ultimately depend on public sector approval. For this analysis, it was assumed that the CNRM project will be signed by a high-level representative of the GOG, thereby committing it to provide counterpart and, through the official representative, to "be vigilant" in assuring achievement of project objectives. Thus, even though many of the activities and operational elements of PIC likely will be sub-contracted to the private sector directly by a U.S. institutional contractor, general program management and oversight must be exercised through an organizational mechanism acceptable to the official representative. Thus, this role must be exercised by a person (regardless of who pays the salary) who enjoys the confidence of and serves at the pleasure of that official representative. Such an organizational and personal relationship is difficult (although not impossible) to achieve with a private sector organization, especially if it operates essentially as a consulting firm (regardless of its legal configuration).

b. ASIES and CIEN both tend to be identified with a particular political persuasion, not necessarily that of the current administration. Even if it is, when the administration changes in 1995 (or when a Minister changes), it may not be. The general program management organizational mechanism should be sufficiently broad-based and institutionally flexible to assure continuity through political changes. In this respect, URL\IIES may be the most neutral of the four organizations.

c. All of these organizations compete with each other and with other similar brethren for business. Much of the work of PIC will be through sub-contracting. Could one of these organizations be impartial in deciding whether or not to execute a particular activity in-house or by sub-contract? Could one of them be expected to be impartial in awarding sub-contracts? It appears that URL\IIES would be the most acceptable of the four organizations in this aspect as well.

d. All of these organizations are small with practical limits to their capacity to absorb expansion and additional responsibilities. By selecting one of them to assume this complex and politically sensitive general management and oversight responsibility, are we in danger of encouraging that organization to over-extend itself and expose it to risks that it may not be able to manage? Here too, because of its rather broad university base, URL\IIES may be the least subject to this limitation.

PARAGRO: Like UAP, PARAGRO is a limited-purpose and limited-life organization created to operationalize an external assistance agreement (World Bank/RUTA and UNDP both provide grant funds) with

the Ministry of Agriculture. Thus, it is not a separate legal entity or "juridical person". There the similarity with UAP ends.

PARAGRO (previously known as "PAP") was originally formed and staffed for the precise and exclusive purpose of developing the analytical basis for formulating the agricultural and renewable natural resource (ANR) policy agenda for MAGA. Under the terms of the Phase-II agreement which runs through 1994, PARAGRO has assumed additional responsibilities in ANR policy analysis, formulation and implementation that will be highly complementary to those activities to be implemented under PIC.

The Minister of Agriculture is the titular head of PARAGRO. PARAGRO is managed by a Director designated by the Minister with the approval of the external cooperators. The organizational and operational model for PARAGRO is instructive for responding to PIC requirements. Since PARAGRO is not a legal entity, it cannot directly administer funds, either counterpart or external assistance grant funds from RUTA and UNDP. UNDP serves the role of funds administrator (including counterpart funds). However, PARAGRO performs all planning, programming and budgeting functions, including administrative and technical management of program and budget execution. Thus, UNDP serves essentially as the controller and disbursing agent.

All staff, whether professional, technical or logistic support, are contract personnel selected by the Director with the approval of the Minister. Scopes of work and personal services or studies contract terms are prepared by PARAGRO, while contracts are administratively approved, signed and payments made thereunder by UNDP.

Because of the nature of policy improvement responsibilities of PARAGRO, their expanded activities under the current agreement are almost co-extensive with those described above for PIC. For carrying out its responsibilities, PARAGRO operates with a very small professional core staff (currently two Guatemalan professionals and the ORD/JCC policy advisor; this is being expanded to four professionals as increased responsibilities are assumed under the Phase-II agreement). This small core staff is feasible because PARAGRO contracts out most of the analytical and other specialized activities, such as analytical studies, and dissemination and dialogue activities. PARAGRO core staff carry out coordination, management, supervisory and oversight functions. This includes preparation of terms of reference (TOR's) for contracts with firms or individuals (UNDP does the formal contracting), technical as well as administrative supervision of these contracts, and coordination among contractors. PARAGRO also provides liaison with the Minister and with other public officials and private representatives. PARAGRO also is responsible for interpreting the results of analytical work in terms of specific recommendations for policy changes to be pursued. The PARAGRO

operating model is very cost-effective (as analyzed in more detail in the economic analysis) because there is no need to maintain and support a large full-time staff of specialists. Specialists are contracted on an as needed basis. Thus, there is no "down-time".

The institutional analysts agree that PARAGRO is the organization whose purpose, capabilities, prior experience, current activities and mode of operation most nearly respond to technical and organizational requirements of PIC. On the other hand, it is recognized that PARAGRO has, until recently, focussed relatively more effort on agricultural policies than on NRM policies per se. Furthermore, PARAGRO currently is somewhat constrained by its own success, i.e., having consistently been responsive in a high-quality manner to its agreement responsibilities, as well as to the Minister's policy concerns. Because it has gained a reputation of technical competence and objectivity, it is being asked to assume a number of new responsibilities that require more and more staff time. As core staff is expanded, this problem will be alleviated, but three further actions must accompany this: 1) more difficult choices must be made as to what responsibilities will be accepted, 2) stricter prioritization of activities through time must be made, and, 3) sub-contracts must be formulated within a broader framework of contractor responsibilities for longer periods of time and with more technical management responsibilities assumed by the contractor.

The analysts concluded that PARAGRO is the organizational structure most able to respond to the leadership roles required for PIC implementation both at the general program management and oversight levels (with the notable exception of funds administration), as well as at activity levels. This is not to recommend however that PARAGRO be asked to assume these roles for PIC with existing staff limitations. Rather, it is to recommend that the PARAGRO model be adopted and adapted for PIC implementation, and that technical assistance professionals be contracted to carry out added staff functions until more permanent institutional arrangements and staffing are possible. As specified in the annual work plan of PARAGRO, options for permanent institutionalization of the ANR policy improvement function will be presented for a decision by the Minister before the end of 1993. The selected option will be implemented in 1994.

There would be a number of additional advantages in integrating PIC with the existing PARAGRO organization: 1) it would permit PIC to enjoy the same close but politically independent linkage to the Minister; 2) it would permit NRM policy work to be coordinated with agricultural policy work, a linkage that is not only convenient but technically imperative because they are inextricably linked in terms of their impacts in the field; and, 3) it would assist to assure complementarity and coordination of donor support to NRM policy work.

It should be noted that PIC integration with PARAGRO is important for reasons of long-term viability as well. Under the PARAGRO agreement, an important output during CY1993 is to formulate for the Minister's approval and for future donor support an organizational mechanism for permanently institutionalizing ANR policy improvement work. According to the terms of the donor support agreement, implementation of the permanent institutional mechanism will take place prior to termination of WB-RUTA/UNDP support, scheduled for the end of 1994. When this institutional change takes place, PARAGRO and PIC can be incorporated into the new structure.

The analysts visualize an arrangement whereby PIC organizational needs will be established within the organizational structure of PARAGRO as a separate program, but with parallel and integrated technical management, coordinated by the PARAGRO Director. The PIC management program will have its own technical program manager and its own small technical management core staff. These functions will be carried out by host country technical assistance personnel, at least during the first three years of the project. Towards the end of the project period, it is expected that permanent institutional arrangements for NRM policy improvement will be in place, and that host country professionals trained under the project will assume core technical management roles on a permanent basis.

An AID-selected external contractor will provide grant funds administration, and general administrative management services (including procurement and sub-contracting of administrative services) for the PARAGRO/PIC program, along with procurement and administrative management of off-shore inputs, such as short term TA and training.

## B. INTEGRATED WATERSHED MANAGEMENT (IWM) COMPONENT.

The IWM component is intended to serve a broad-based technical and institutional testing and demonstration objective, as well as to achieve important and cost-effective improvements in management of natural resources in approximately 30 watersheds expected to receive support. Because of the pilot nature of the component, several combinations of A&I roles and relationships will be tested involving both local and national organizations.

1. Planned Implementation Arrangements. As described elsewhere, CARE submitted to USAID an unsolicited proposal to continue, expand and adjust its on-going agro-forestry, resource conservation and watershed management activities in Guatemala (See Annex 1). This proposal, which is being incorporated into the CNRM Project as the IWM Component, includes a more detailed review of prior CARE A&I experience in community-based watershed management, and a review of the range of organizational arrangements proposed for testing.

2. Prior Experience. Considerable experience already has been

gained in achieving effective institutional cooperation and workable administrative relationships for watershed level management of natural resources. Of special significance is the experience gained in the two CARE-managed on-going activities in Guatemala. One is an agro-forestry and resource conservation project (ARCP) that has been operating since 1974 and which receives USAID financial support. The other is the small watershed management component (COMPDA) of the HADS Project. COMPDA has been operating since 1990, and currently is working in 20 small watersheds.

For the two referenced activities, CARE exercises overall management and coordination responsibilities, administers project resources, and provides needed specialized technical and training assistance not available from other participating organizations. A number of national and local organizations (including national and local branches of external assistance organizations and PVO's) collaborate in implementing activities at the watershed level. DIGEBOS (a dependency of the Ministry of Agriculture), through its national, regional and local offices, is the primary GOG participant, while several PVO's and the Peace Corps provide technical and administrative personnel at the community level. In addition, at the local level, municipalities and community groups organized by the activity participate in decision-making and implementation at every step of the process.

These prior experiences offer several valuable lessons for successful interventions to improve natural resource management (NRM) at the watershed level. Three of these lessons are especially relevant to successful organizational roles and relationships:

First, a management oversight organization that possesses sufficient technical and administrative capabilities, and especially appropriate socio-economic sensitivities, must be delegated adequate authority, and accept responsibility, for exercising overall coordination and for administration of project resources.

Second, municipalities and local community organizations must actively participate in decision-making and implementation during all phases of the project, beginning prior to site selection, during the diagnostic phase, and on through planning, implementation, monitoring/evaluation, and feedback.

Third, the single most important inter-organizational element for success is the existence of a relationship of trust and respect between the oversight organization and local community leadership and members. Other organizations and relationships may ebb and flow or otherwise change, but if this relationship never is established or is seriously damaged, success is not likely. Thus, the single most important capacity of the

oversight organization is to know how to seek and gain and hold the confidence and trust of the communities with and through whom the project operates.

3. Incorporating Additional Organizational Innovations. IWM will incorporate at least one innovative institutional arrangement that was tested on a pilot basis during the HADS Project, independently of CARE activities. Under HADS, a special fund (FEAT) was organized to stimulate establishment of private technical assistance (TA) services to small farmers, with beneficiary farmers voluntarily paying an increasing share of costs as increased profits demonstrated to them the economic value of the TA service.

The FEAT experience to date has been positive and justifies continuation and expansion. Thus, the IWM component will incorporate this innovative institutional arrangement on a pilot basis to provide technical assistance services to market-oriented small farmers. FEAT will be introduced into watersheds where NRM activities are progressing soundly, and farmer productivity potential for increased commercial sales is sufficient to expect farmers to eventually assume an increasing share of the costs of providing the service.

4. Selection of CARE as Management Oversight Organization. CARE has had 18 years of experience in Guatemala in managing similar types of successful projects that have been supported with AID funds. Their responsibilities have included management oversight, coordination with and guidance to other involved organizations, and administration of AID funds. They also have had extensive experience in managing similar projects in several other Latin American countries with similar cultural, natural resource and production conditions.

CARE already has substantial qualified staff in place and on-going institutional relationships that will continue into the IWM component. They have activities under way in 20 watersheds, many of which are expected to be incorporated into the IWM component, subject to evaluations to be carried out in the second half of FY93. Another important aspect of CARE qualifications is their demonstrated ability to gain the trust and confidence of local communities, and to organize and stimulate them to actively participate in NRM improvement decision-making and actions.

Consideration was given to the possibility of "graduating" one of the Guatemalan institutions presently cooperating in implementation of on-going activities. The "graduating" institution might either replace CARE altogether, or assume one or more of the current CARE functions, such as management oversight, coordination, and/or administration of financial resources. Unfortunately, this was found not to be a viable alternative. DIGEBOS, the only national level organization with the scope of mission to be considered as a candidate, suffers from weaknesses common to most GOG line

institutions, inadequate budgetary resources, bureaucratic imbalance, low salaries and low esprit de corps. Consequently, DIGEBOS is managerially, technically and administratively quite weak. Furthermore, it does not appear likely that DIGEBOS will receive from the GOG the kinds and levels of support necessary, either politically or financially, to attain the required competence levels in the future. In fact, a proposed new forestry law would eliminate DIGEBOS and absorb its functions into a multi-sectoral organization.

Lessons learned from past experience should be incorporated into IWM. Of special importance is to integrate forestry management and agro-forestry initiatives at the watershed level with on-farm soil and water conservation and management practices for intensive agriculture. Although CARE has been promoting both types of NRM improvement activities, it tends to be in separate activities at separate sites. The CARE proposal clearly recognizes the need to integrate these activities within the same watersheds. This is one example that illustrates CARE's institutional flexibility in making appropriate adjustments as experience teaches better ways of doing things.

The Financial/Economic Analysis concludes that benefits justify costs in on-going projects managed by CARE. This suggests that existing institutional arrangements have been cost-effective. Nevertheless, CARE proposes to review all institutional arrangements now in place to identify ways to make operations even more cost-efficient.

Other considerations in the decision to continue with CARE as the management oversight and financial administration organization for this component are the costs and risks of changing to another institution. Under IWM, on-going CARE-managed operations in many of the 20 watersheds as expected to continue unimpeded. Those that do not continue to receive support under IWM will be selected out on the basis of a thorough evaluation. Current support will be phased out in an orderly manner, not as the result of institutional disruption. Furthermore, changing the activity management institution invariably involves delays in start-up, extra start-up costs, loss of momentum, risk of incompatibility, etc. Finally, CARE, to a large extent, already has internalized the lessons learned from experience to date. This gives CARE a "head-start", a benefit not available to a new institution.

Past AID experience suggests that where an activity in a new project is based on continuation, expansion and/or improvements to activities initiated under terminating projects, major institutional changes for implementation are advisable only where past institutional performance has been unsatisfactory. Such is not the case with CARE. On the contrary, past evaluations and USAID review of CARE performance in the two activities referenced above indicate that performance has been quite satisfactory.

Furthermore, its proposal indicates that CARE is quite ready to incorporate lessons learned from previous experience into the new IWM component.

### C. MONITORING AND EVALUATION COMPONENT (MEC).

Monitoring and evaluation activities have been elevated to the status of a separate component in this project because of its pilot nature. This is in response to its interim nature, and its major purpose to provide a blueprint for a future long-term project that adopts organizational and operating models found to be successful under this project.

Institutional linkages for this component are straight-forward. A recent GOG decision was made to incorporate agricultural and natural resources sector information and statistical data (I&SD) system functions into USPADA, the MAGA Minister's staff unit for sector planning, programming and budgeting. An important complementary role, beginning in 1993, is to organize and operationalize a capability to collect (directly and through other organizations) and process data required for sector management. This responsibility includes monitoring and performance evaluation information needs.

USPADA has had some on-going sector-wide information and statistical data collection and processing responsibilities in the past, but its capacity to implement has been minimal. It must now expand this capacity to assume responsibilities previously held by the National Statistics Institute (INE) and the Central Bank (BANGUAT). Although USPADA is the responsible institution for organizing and making the system operational, primary sector data collection will be primarily through MAGA line and associated agencies, such as DIGESA, DIGEBOS, DIGSEPE, ICTA, INTA, etc, as well as from private sector product and trade associations. Also USPADA will interchange data with counterpart agencies in other sectors. Additionally, over time, USPADA must develop a capacity to not only assist primary data source agencies to improve the range and quality of data, but also a capacity to carry out periodic surveys for special needs, especially those related to socio-economic performance indicators tracking and analysis.

Thus, although M&E component activities will be organizationally integrated into the USPADA I&SD system, project resources must provide host country technical assistance to plan, program and manage the M&E component program for most of the project until training and budget adjustments permit USPADA to absorb these functions with permanent technical staff and regular budget resources. During the period of the project, USPADA is expected to provide a professional staff member to serve as technical liaison, and within one year should be expected to provide other office logistic support. Additionally, USPADA will facilitate access to primary data sources through line and associated sector agencies

and to counterpart offices from other sectors.

## II. PROJECT ORGANIZATION & IMPLEMENTATION MANAGEMENT ARRANGEMENTS.

Organization and management arrangements for implementing the project respond to practical requirements mandated by current public and private sector institutional conditions in Guatemala. These conditions are amply treated above and in other detailed project analyses and can be summarized as follows: 1) outmoded, conflicting, confusing and disperse public sector responsibilities in NRM, 2) serious organizational and capability weaknesses throughout public sector organizations with major responsibilities in NRM improvement, 3) the evolving environment and attitudes in Guatemala with regard to public vs. private sector roles in national economic and social development, in general, and of relative roles of national institutions vs. local communities in NRM management, in particular, and, 4) the relatively nascent and evolving nature of private sector involvement and capabilities, both at the national and local levels, in NRM improvement initiatives.

These institutional and capacity constraints, and the evolving nature of the Guatemalan institutional structure for organization and implementation of the types of NRM interventions planned for the project, were key factors in selecting from among possible options for project and component organization and implementation management. First of all, separate arrangements were determined to be necessary for the IWM and the PIC components. Of course, there is considerable integration of arrangements for these two components and the M&E component, but, even here, lead responsibilities are different. Key considerations have been to seek mechanisms that assure inter-institutional coordination, and that are flexible over time. This will facilitate access to widely dispersed Guatemalan expertise, and will permit project implementation arrangements to adjust to institutional modernization initiatives that are likely to occur during the life-of-project (LOP). Institutional modernization initiatives that will impact on NRM policy development and improvement are receiving, and will receive in the future, support from the World Bank and UNDP. These are described in more detail in the section on other donor activities. Likewise, HADS (and in the future, the CNRM project) provide technical assistance, studies and training to complement other donor support in modernizing institutional arrangements for dealing with all aspects of NRM improvement.

### A. POLICY IMPROVEMENT COMPONENT (PIC).

ORGANIZATIONAL AND CAPACITY SETTING. As described in detail in the first section of this analysis, Guatemala has only limited and ad hoc experience in organization and management of orderly, analysis-based NRM policy improvement activities.

The above-described analysis examined formal and informal responsibilities and interests in policy improvement activities of more than 20 public and private organizations in Guatemala. On the basis of this analysis, it was concluded that two GOG institutions, MAGA and CONAMA, have major formal responsibilities in NRM policy formulation that strongly suggest their involvement in this component. However, neither separately nor together do these institutions have the capacity to assume complete or even major technical, administrative and/or management responsibilities necessary for PIC implementation. Additionally, a number of other governmental, non-governmental and/or university organizations have varying degrees of formal responsibilities and/or on-going activities in NRM policy improvement. Furthermore, much of the human resource capacities available in Guatemala for PIC implementation likewise are scattered among these various organizations, and several NRM policy-related professionals operate as independent consultants.

In conclusion, there is no "minimum mass" of capacity and expertise in any one or two of the organizations analyzed to assume full management responsibilities, even with complementary inputs from the project. Nevertheless, the legal mandates of MAGA and CONAMA strongly suggest that these two organizations should participate in PIC implementation.

As discussed in more detail in the Technical and other supporting analyses, the Constitution, the Environmental Protection and Improvement (EPI) Law, the Law creating the current Agricultural Public Sector Institutional Structure (SPADA), as well as various other legal dispositions define the respective policy related duties and responsibilities of CONAMA and MAGA in environmental protection and improvement, and in renewable natural resources management, conservation and utilization. These are summarized below:

1) CONAMA has advisory and coordination responsibilities vis a vis all state ministries, with respect to actions related to formulation and application of national policies related to protection and improvement of the environment. CONAMA does not have authority to direct or impose policy formulation and application decisions and actions on ministries. Rather, CONAMA is charged with providing advice to ministries and promoting communication across traditional ministerial sectoral lines. Thus, CONAMA should exercise a supporting role to MAGA in policy formulation and application. Furthermore, the subject matter scope of this role is defined in terms of environmental protection concerns, rather than NRM management concerns related to conservation and sustainable use, per se. Thus, CONAMA's subject matter involves primarily impacts of human activity on the quality of the environment, e.g., water and air pollution effects, and effects of other threats to natural ecological systems, such as encroachment on bio-

diversity, damage to fragile eco-systems, etc.

2) CONAMA currently has quite limited technical capacity to provide advice and promote inter-ministerial coordination in the formulation and application of environmental policies. Nevertheless, because of its statutory responsibilities in this area, CONAMA should participate in PIC implementation to the extent that activities may focus on environmental policies related to protected areas and to air and water pollution.

3) MAGA functions relate directly to NRM, conservation and sustainable productive utilization; MAGA and its dependencies have far-ranging responsibilities, not only for policy analysis, formulation and application, but also for regulation, promotion and direct intervention in research, technical assistance, promotion and management, as these relate to conservation and sustainable productive utilization of most renewable natural resources, viz: land and soil, water, forests, fisheries and wildlife.

4) MAGA line agencies and semi-autonomous institutions of the sector (collectively known as SPADA) focus primarily on regulatory, promotional and direct intervention aspects of the ministry's natural resources-related responsibilities. SPADA organizations have little or no capability in policy analysis and formulation. Neither does the Agricultural Planning and Development Unit (USPADA), which focusses primarily on financial programming and budgeting aspects of the MAGA interface with the Finance Ministry. In recognition of these limited capabilities of the traditional SPADA organizations, nearly three years ago, the Office of the Minister, with technical and financial support from World Bank-RUTA, UNDP and USAID/HADS, initiated a policy review and analysis program (now called PARAGRO). This effort initially focussed largely on agricultural policies related to marketing and trade, and public versus private sector institutional roles and functions. However, the current agenda includes considerable focus on the effects of policies on NRM, conservation and sustainable use. The PARAGRO program also now has incorporated policy dissemination and dialogue activities, as well as greater efforts to facilitate adoption and application of policy improvements. The PARAGRO program was recently approved for an additional 20 months.

Another important consideration has influenced the choice of organizational and management arrangements for PIC. One activity of PARAGRO during the next 20 months (and in which PIC could participate) will analyze alternatives for (and propose a preferred choice to the Minister), a permanent organizational and operating arrangement for institutionalizing agricultural and natural resource policy improvement activities. Organization and management arrangements being proposed for PIC are sufficiently

flexible to permit merging PIC into the new institutional arrangements, if and when these are approved.

PIC PROGRAM MANAGEMENT. Based on findings and conclusions of the analyses, organization and management arrangements for the PIC program build on the model now being used for PARAGRO.

The MAGA Office of the Minister will be responsible for overall management and implementation of PIC, as well as for PARAGRO. To carry out this responsibility, the Minister will designate a Director of a Policy Development Program Unit (PDU) attached to his Office. This Director will be responsible for general management oversight and coordination for both PARAGRO and PIC. This will permit PARAGRO and PIC to maintain program integrity required by their separate funding sources, while at the same time assuring appropriate complementarity and integration of effort in implementation.

A PIC Program Manager, contracted with project grant funds and reporting to the Director of PDU, will be responsible for general program management and oversight of all aspects of PIC implementation. The PIC program manager and a small core staff (PIC program management staff-PIC/PMS), will be responsible for preparing and managing execution of life-of-project (LOP) and annual implementation plans, programs and budgets (PPB) at the overall program level, as well as at sub-program and specific activity levels as detailed in the technical analysis.

In this respect, the PIC program will be divided into two sub-programs, one for policies related to management and sustainable use of NRM focussed at the watershed level (NRM/MSU policies), and the other for policies related to broader environmental policies with primary application to protected areas (E/PA policies).

Annual implementation plans for the NRM/MSU sub-program will be jointly developed by both PARAGRO and PIC, with parallel programming and funding that share common output targets. This is intended to achieve complementarity of Agricultural and NRM policy improvement initiatives flowing from the two programs.

A qualified technical specialist designated by CONAMA (paid from grant funds if necessary to obtain a qualified person) will be detailed to the PIC/PMS as leader of the E/PA sub-program. This specialist will function as a fully integrated member of the PIC/PMS technical team, but will bring to that team the institutional perspective of CONAMA. This will promote complementarity of EPA sub-program activities with both CONAMA and MAGA policy improvement priorities and technical objectives.

IMPLEMENTATION RESPONSIBILITIES AND MECHANISMS. As explained in detail in the first section of this analysis, in order to achieve cost-effective utilization of the currently available disperse and

nascent NRM policy improvement institutional and human resource capacities in Guatemala, PIC activities will be implemented through memoranda-of-understanding (MOU's) and/or sub-contracts with several public and private sector institutions (including universities) that have relevant interests and capabilities. PIC/PMS will be responsible for developing terms-of-reference (TOR's), organizing and managing competitive selection of sub-contractors, supervision and monitoring of contract execution, and approval of products and payments.

-Policy related Advisory and Staff Functions. An essential role of PIC/PMS, and perhaps the most critical role in terms of achievement of project objectives, is to carry out advisory and staff functions for the Minister (and through the detailed E/PA sub-program leader, for the Coordinator of CONAMA) in all matters related to NRM policy improvement. These advisory and staff functions will include at least the following: Agenda-setting, strategy development and application, dialogue and consensus-building, and leadership in MAGA and CONAMA direct and/or indirect involvement in initiatives that facilitate formal approval and initial application of NRM policy change initiatives generated with PIC support. Analytical and technical outputs generated by PIC activities will become important inputs for assuring high quality in the execution of these staff functions.

-Technical Secretariat Services. Another role to be fulfilled by PIC/PMS, and which is considered critical to the overall success of PIC in achieving its objectives, is to provide directly or through sub-contracts technical secretariat services for the inter-institutional coordination mechanisms being established for assuring that PIC planning and implementation incorporates cross-sectoral considerations as described below.

-Management of Sub-contracting and Sub-contract Supervision. As indicated above, providing technical management for sub-contracting of products and services, and supervision of contract execution, are central responsibilities of the PIC/PMS. It is contemplated that some contracts will be broad-scope level-of-effort type agreements in selected activity and/or policy areas, while others will be for clearly defined products. The analysis identified some institutions with capacities to permit them to assume commitments of the former type, while others with more limited and/or specialized capacities, could assume latter-type commitments. The selection process will be competitive, but is expected to involve a pre-qualification process to generate short lists of institutions for different types of TOR's.

-Financial Administration. As described in more detail in the section on Financial Plans, an expatriate general technical assistance contractor will provide financial and administrative services to PIC, including those required for local sub-contracting. Thus, for local contracting and contract management

purposes, PIC/PMS will fulfill the equivalent functions of a USAID technical office (e.g., ORD), while the financial/administrative services contractor will perform the equivalent of USAID controller, executive office, and contract office functions.

-Operating Mode. At the operational level of PIC implementation, activities will be carried out using a team approach (often multi-disciplinary), organized around well-defined activities within specified policy areas or groupings. Although individual team members will be assigned specific tasks to perform, they will function as members of a team even though they may be from different institutions. In this way, PIC/PMS interaction is channeled through the team leader, even though regular meetings will be held with the entire team.

PIC COORDINATION ARRANGEMENTS. An important purpose of PIC is to bring together talent and institutional interests of both the public and private sectors in NRM policy improvement activities. Thus, although the PIC implementation structure is attached to the Office of the Minister, a number of coordination, communication and inter-action mechanisms will be utilized to facilitate input from other relevant public sector leaders, and, at the technical level, among both public and private sector actors. The objective of these arrangements is to achieve a cross-sectoral collaborative and collegial style of implementation. This should result in continuing consensus-building both at the technical and policy decision levels that translates into broad-based public and private sector support for policy change initiatives flowing from PIC activities.

Inter-institutional coordination mechanisms to be established are:

PIC Consultative Council (CC) - This is the highest level of public sector coordination for PIC. The MAGA Minister is the official representative of the GOG for purposes of Project implementation decisions requiring written agreement of the signatories. The purpose of the CC is to provide a formal mechanism that facilitates consultation on PIC plans and strategies by the Minister and the USAID Director, with heads of other organizations with important responsibilities and/or contributions to make in NRM policy improvement. The MAGA Minister, the Coordinator of CONAMA, the General Secretary of SEGEPLAN, and the Director of USAID/Guatemala will be permanent members of the CC. These members may agree to invite heads of other public and/or private organizations as temporary or permanent members, as they consider appropriate.

The MAGA Minister and the USAID Director, as Official Representatives for the Project, will call and co-chair the first CC meeting. The agenda for the first meeting will be to review and discuss the PIC LOP and first annual work plans, to agree on the CC role and functions, its internal organization,

and any specific delegations of responsibilities. It is anticipated that the CC will meet annually to hear and discuss progress and problems, and to comment on proposed annual work plans.

While the purpose of the CC is not to make operational or technical management decisions, it is expected that their discussions of implementation plans, progress and problems will build consensus, serve to facilitate necessary GOG decisions and/or actions needed for satisfactory PIC implementation, and serve to orient PIC management to priority national concerns.

PIC Technical Management Group (PIC/TMG). - This is the permanent quality-control mechanism for PIC. It is expected to function as a permanent technical oversight group, serving as the vehicle to make management decisions. This group will be comprised of PARAGRO and PIC technical managers, and leaders of sub-programs.

OFFICE FACILITIES AND LOGISTIC SUPPORT. Office facilities, office furniture and equipment procured under the HADS project and currently occupied by the HADS external Technical Assistance Contractor and the Project Administrative Unit will no longer be used for that purpose when the HADS Project terminates at the end of FY93. These facilities, furniture and equipment will be made available for use in implementation of the Policy Improvement Component and the Monitoring and Evaluation Component of the project, as agreed between MAGA and USAID in an Implementation Letter prior to disbursement of grant funds for these components.

B. INTEGRATED WATERSHED MANAGEMENT COMPONENT (IWM).

This component will be implemented under the on-going administrative arrangements and management structure now operating for HADS-supported watershed management activities. A new Cooperative Agreement with CARE will be negotiated to provide overall component management, technical leadership and administration of project grant funds. DIGEBOS and DIGESA will continue to be the lead GOG institutions providing technical personnel and logistic support inputs required for field implementation. They also will directly administer counterpart local currencies allocated to them for these purposes.

The existing decentralized organizational structure of CARE, DIGEBOS and DIGESA will be continued for IWM. The core element for implementation of activities at the watershed level will continue to be community beneficiary groups organized and trained with project support. These community groups are assisted by locally active PVO's, participating through agreements with CARE, and by Peace Corps volunteers. The objective of IWM is to develop organizational arrangements and technical and management

capabilities of community groups and participating PVO's that will permit them to gradually assume full day-to-day decision-making and operational responsibility for watershed and forestry management activities, requiring only intermittent technical support from DIGESA and DIGEBOS specialists.

A more detailed description of organization and implementation management arrangements for IWM is included in the CARE proposal in Annex 1. In addition, detailed organizational charts for all activities under IWM are shown in ANNEX 6 of that proposal. As can be seen in chart 6E of that Annex, FEAT will be implemented as a separate but parallel complementary activity with its own implementation staff. However, at the local level, FEAT implementation will be fully integrated into project-supported programs of community beneficiary groups.

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**COMMUNITY NATURAL RESOURCE MANAGEMENT**

**PROJECT PAPER  
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**ANNEX III**

**TECHNICAL ANALYSIS**

**Office of Rural Development  
July 2, 1993**

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## ANNEX 3: TECHNICAL ANALYSIS

### A. Natural Resources Management Problems and Constraints.

1. **Related to Human and Biological Resources.** Guatemala, with a population of approximately 10 million and 850 people per square kilometer is the second most densely populated non-island nation in the Americas. Nearly 60% of the population is culturally indigeneous living largely in rural areas where literacy is less than 40% and conditions of poverty are severe.

In contrast to Latin America as a whole, Guatemala still is a rural-based economy. In the former, two-thirds of the population is urban; in Guatemala, 60% of the population is rural. 70% of national employment and 80% of economic product (GDP) is generated by the biological resource-based production, processing and marketing system. If natural resource-based tourism is included, dependence of the national economy on the natural resource base is even higher.

Because of population growth and distribution patterns in Guatemala, the current high dependence on the natural resource base for livelihood is expected to increase during the foreseeable future. CELADE projects, at least through 1995, a 2.8% total population growth rate in Guatemala (compared to a 2.2% rate for all of Latin America) and, after adjusting for net migrations, a 2.2% growth rate for rural populations (while for Latin America as a whole, that rate is projected at 0.6%). These high rural population growth rates in Guatemala place an ever-growing burden on an already over-saturated biological resource base, thereby intensifying the severity of the man/resource relationship problem at an accelerating rate. Net urban populations of Guatemala also are growing much more rapidly than in Latin America as a whole (3.6% annually as compared to 2.2%). A robust urban economy (which does not characterize Guatemala at the present time) would be sorely challenged to productively absorb these projected increases in urban populations. Thus, there are no reasonable prospects for solving the excess rural population problem by absorption into the urban economy at rates higher than those projected.

The problem of accelerating population pressures on a limited resource base is exacerbated by the characteristics of the biological resources endowment. Natural resource experts classify Guatemala as being extraordinarily rich in biological resources because of biodiversity. However, in terms of availability of agricultural land per capita to satisfy basic human needs, and the distribution of that agricultural land both in geographic and ownership terms, Guatemala is one of the most poorly endowed countries in Latin America.

Only 16% of the land area is tillable (i.e., suitable for clean cultivation), and another 11% is considered suitable for less

intensive agricultural uses such as permanent crops, pasture and agro-forestry. Due to high population growth rates and degradation/abandonment, tillable land per capita has diminished from 0.65 hectare in 1950 to an estimated 0.18 hectare in 1992. Including land suitable for permanent crops and extensive agriculture, the reduction is from 1.0 hectare to 0.3 hectare during the same period.

The limited availability of agricultural land in absolute terms is exacerbated by its geographic distribution. Approximately 15% of all agricultural land, and one-fourth of tillable land (450,000 hectares), is located in the mountainous highlands, where two-thirds of the rural population (40% of total population) live. This translates into an average of less than 1.0 hectare per farm family. To make matters worse, this cropland is dispersed among hundreds of small watersheds generally characterized by severely broken topography. Because of relatively small extensions of cropland in each watershed, agricultural productivity in these areas is quite vulnerable to what happens on surrounding steeper slopes, which serve as rainfall catchments and infiltration zones, while forest cover retains the soil. Mismanagement of these steep slopes through deforestation to meet growing fuelwood and subsistence cropland needs by increasing rural populations causes accelerated rainfall run-off and attendant high soil erosion. This in turn exacerbates soil and water management problems of lower level croplands and compromises their productivity.

The South Coast is Guatemala's most productive agricultural area with over half of the tillable land in the country. This cropland is located primarily in relatively large extensions on reasonably level terrain. However, it is essentially inaccessible to small farm ownership because of highly skewed ownership distribution in large farms over 50 hectares in size, and due to the absence of corrective or offsetting policies. To illustrate, based on 1979 census data (the latest census), the national Gini Coefficient (a measure of land ownership concentration) for Guatemala is the highest (worst) in Latin America at 85.05. It is 91 on the south coast. 50% of this tillable land in large farms is in pasture, rather than in more intensive crops for which it is well suited. This pasture land amounts to one-fourth to one-third of all tillable land in Guatemala. Furthermore, in 1979, 10,000 out of a total of 600,000 farmers owned 65% of all land in farms, while nearly 90% (530,000) owned only 16%. It is quite likely that these distortions have worsened significantly since 1979, as the total number of subsistence farm families increased by another 50,000 to 100,000.

From another perspective, experts estimate that with current prevailing conditions of limited irrigation, traditional cropping patterns and low levels of productivity on small farms, in the highlands and surrounding areas, a farm family needs 1.5 to 3.0 hectares of cropland for basic subsistence. In 1950, 90% of total

small-farm families in Guatemala cultivated an average of 1.75 hectares each, while today, 90% of the estimated 650,000-700,000 farm families cultivate an average of only 0.75 hectares. Because of skewed land distribution, even among small farms, considerably more than half of these farm families make do with considerably less cropland.

Additionally, some 30,000 new rural farm families (20,000 in the highlands) now are being formed each year, of which no more than 40-45% will be absorbed into urban areas. The remaining new families must earn their livelihood on the existing over-saturated cultivated land base, or seek new land to bring into cultivation. Since the agricultural frontier (i.e., uncultivated land appropriate for agricultural purposes) essentially was exhausted many years ago, and small farm sizes have been well below subsistence levels for more than a decade, "excess" rural families for the last 10 years or more have had no alternative but to seek their livelihood by clearing unfarmed lands (usually municipal or state lands) on the steeper slopes of the highlands, or by migrating to fragile tropical lowlands of the northern portions of the country, including The Petén. Since such areas cannot support sustainable crop production, these families adopt the "slash and burn" system. Under this system, lands are cleared of forest and vegetation to plant subsistence crops for 1-3 years, then abandoned, and new areas are cleared and farmed until these in turn must be abandoned. An estimated 50,000-100,000 families currently survive in this manner, and an additional 8,000-10,000 families migrate annually and adopt these practices in order to survive.

It is estimated that in the past decade, this "expelled" family survival strategy has deforested more than 1,000,000 hectares. Without concerted effort to reverse the trend, this process will continue to accelerate. Slash and burn deforestation, combined with destructive and often illegal logging practices in the Petén, has led to deforestation of an estimated 1.5 million hectares during the last decade. The national impact of this trend on the biological resource base is devastating. From 1960 to 1980, national territory covered by primary forests decreased from 77% to 42% of the total area. By 1989, primary forest areas had dropped to 29% of the National territory. If this rate continues, primary forests will virtually disappear from Guatemala by the year 2010. To the enormous natural resource destruction that results on deforested lands must be added widespread degradation of the lower level agricultural lands caused by accelerated water run-off and erosion from these deforested areas. Further, much of the abandoned slash and burn areas do not reforest naturally and remain degraded almost indefinitely.

The combination of accelerating population pressures, relatively low absolute limits to the agricultural resource base, excessive fuelwood requirements, increasing slash and burn agriculture on steep and/or fragile lands, and unrestricted

destructive logging practices, is dramatically and exponentially degrading the natural resource base. Erosion, loss of vegetative cover, increased run-off, decreased infiltration, rapid sedimentation, destruction of natural areas, and loss of biological diversity are increasingly foreclosing some of the most important development options for the future.

More specifically, impacts of resource degradation on the hydrologic regime are undermining potentials for irrigation and hydroelectric energy generation. The otherwise considerable potential for expanded irrigation is an important option for generating greatly increased sustainable output and employment from vegetable and fruit production for export on the limited cropland base. Because of excellent climatic conditions in the Highlands, farmer capacities to produce quality fruits and vegetables, and seasons that permit accessing U.S. and European high-price market windows, these diversified crops generate 2 to 7 times more farm income and 3-4 times more person days of direct employment per unit of land than do traditional basic grains crops. Thus, irrigation combined with diversification has as much economic growth potential as a four-fold increase in cropland area. Likewise, water and energy linked to industrial development must eventually provide off-farm employment opportunities to reroute populations from ecologically fragile and/or over-saturated areas.

**2. Related to the Policy Framework.** The NRM policy framework in Guatemala is discontinuous, out-dated in many aspects and highly normative. In general, legislation and regulations address each natural resource separately in a piece-meal way, without unifying principles that transcend resources. Similarly, separate national-level GOG institutions are assigned regulatory functions for each resource, e.g., forestry, water, soils, etc. There is little coordination among these national level institutions, and relevant policies provide little support for mobilizing local initiatives in NRM.

Until the mid-1980's, NRM policies generally had been formulated as incidental to biological resource-based production objectives, especially in agriculture and forestry. In 1986, encouraged by AID and other international organizations, GOG approved policy initiatives focused on broader environmental concerns and on the establishment of protected areas, especially targeted to the fragile and bio-diverse Petén region. These recent policy initiatives are strongly oriented toward protection and enforcement objectives, with little or no attention to sustainable production objectives. This change to a protection focus resulted in a 1986 Environmental Protection and Improvement (EPI) Law that also created an environmental policy coordinating Commission, CONAMA. In 1990, another law was approved re-organizing protected areas enforcement arrangements through the establishment of a Protected Areas Commission, CONAP. During the past year, based on initiatives of

World Bank/RUTA and UNDP, and with technical support from USAID/G-HAD, MAGA has demonstrated increasing interest in a more integrated approach to NRM policy improvement. As a reflection of this increasing interest, in early 1992 the Minister of MAGA announced an agricultural and natural resources policy improvement strategy and agenda. This strategy and agenda emphasizes the need to develop a set of policies that balance and integrate NRM objectives with those related to increased sustainable agricultural and forestry production and productivity. Planning for organizing to implement this strategy and agenda is still in its early stages.

Currently, initiatives for most policy change in Guatemala generally are ad hoc, special-interest driven, discontinuous, and with erratic analytical input. The process for changing policies that impact on sustainable management, utilization and protection of renewable natural resources (RNR policies) is no exception. In fact, since RNR policy areas invariably cut across traditional public sector (as well as private sector) institutional lines, resource-specific policies tend to be viewed by many institutions as their exclusive province, while cross-cutting policies tend to become the province of none. Thus, no single institution seems to be able to assume primary leadership for guiding a technically and analytically sound overall RNR policy framework within which consistent and complementary resource-specific policy changes can be formulated. Most if not all institutions in Guatemala with a possible or perceived role in improving RNR policies do not recognize the complex and demanding process required to assure that policy changes are appropriate, balanced and effective.

More specifically, the institutional setting for implementing a policy improvement process in Guatemala is characterized by highly dispersed public and private sector institutional interests in RNR policy improvement, combined with limited numbers and highly dispersed professional talent with specialized knowledge and experience relevant to RNR policy improvement. No one organization appears to have a "minimum mass" of institutional capacity or qualified talent sufficient to successfully assume major responsibilities for in-house implementation of an NRM policy improvement program. Nevertheless, dispersed among the various organizations, and among the ranks of individual consultants, there exists a modest level of well-qualified and experienced professional talent in a number of specialized areas needed for initiating a NRM policy change process. Additionally, some organizations have the capacity to assemble a minimum mass of qualified professionals sufficient to permit successful execution of some of the discrete actions and/or activities required in implementing such a process.

The setting for NRM policy change also is characterized by relative newness of analytically-based RNR policy improvement initiatives and of organizations that might become involved:

-RNR-related organizations, whether public or private, are relatively new. Most are less than five years old, are still seeking financial viability, and have not yet consolidated their purposes or "niche". Since RNR policy improvement per se is not usually the primary focus for these organizations, none as yet has made much progress in consolidating more than minimal capacities in this specific area.

-A systematic approach to indicative (as opposed to directive) policy change efforts in Guatemala began with macro-economic policy changes in 1985, stimulated and supported by advice and encouragement of IMF and World Bank; modest systematic sector level policy analysis (especially in agriculture, livestock and forestry) began in 1991 with the change of government, with World Bank/RUTA and UNDP encouragement and support (also with modest AID support); efforts to take an analytical approach to RNR policy improvement also began in 1991 on an ad hoc basis, primarily through formation of working groups supported by external donors. As examples of the latter, different working groups have put forward proposals for a new forestry law, a new irrigation law, and a new plant health law. Lack of an institutional mechanism to exercise quality control and to coordinate/cross-communicate has resulted in widely disparate quality within and among proposed bills (some of which already are in congressional committees), and in inconsistencies and cross-purposes among proposed dispositions from one proposal to the other.

3. **Related to Monitoring and Evaluation.** Provisions for monitoring and evaluation of impacts of AID and other donor assisted projects, as well as activities wholly funded by the GOG, generally have been treated as a necessary administrative requirement rather than as an integral part of the program being supported. Even more serious, the generation and analysis of sector level information and statistical data for monitoring changes in social, economic, physical input/output and resource variables has not been accorded high priority in Guatemala for many years. This is especially apparent in the agricultural and other biological resource-based economic sectors.

In the past, most sector data has been collected, processed and published primarily by the National Statistics Institute (INE) and the Guatemalan Central Bank (BANGUAT). Data sources mainly have been periodic censuses, annual national accounts data, and periodic ad hoc special purpose surveys. Some primary data is generated by several sector organizations on a more or less routine basis. However, as budgets become restricted, primary data generation generally is accorded low priority. As a result, much of the primary data suffers from time-series gaps, or is not comparable because of changes in base data and/or collection methods, and, in many cases is of doubtful reliability.

Recently, a GOG decision was made that sector organizations must develop their own data collection and processing systems, beginning in 1993. USPADA has been assigned the responsibility for designing, organizing and coordinating an information and statistical data (I&SD) system for agriculture and natural resources. With the technical assistance of IICA, USPADA recently developed a proposed sector information and data system. Implementation is to be initiated in 1993. It is proposed that all CNRM Project monitoring and evaluation information and data collection and processing be coordinated within the sector-wide I&SD system.

It also should be noted that the HAD Project invested considerable effort to organize and operationalize a continuing management information system to monitor and evaluate impacts of HAD-supported programs both at the institutional and field levels. A computerized data organization program and collection procedures were developed and tested, and the system made partially operational. Since HAD terminates at the end of FY93, this management information program presumably will be incorporated into the overall sector-level I&SD system and should be reviewed for possible utility in the CNRM Project.

#### **B. Possible Solutions to Natural Resources Management Problems and Constraints.**

Sustainable agriculture and forestry production systems on lands suited to these purposes can enable rural populations to attain a viable and minimally acceptable livelihood. This also can generate raw materials (food, fiber and forest products) for an expanding and diversified industrial and export base thereby generating an important multiplier effect. Diversification of agricultural lands into high-value, labor intensive crops for non-traditional export can help to slow the exodus to urban areas already suffering from the litany of ills associated with excessive and undirected urban expansion-- water and energy shortages, environmental pollution, lack of adequate housing, crime and inadequate transportation. It can also help slow migration to the lowland tropics of the Petén, where spontaneous colonization described above is rapidly destroying eco-systems and bio-diversity in this ecologically fragile area.

Despite the problems described above, and others such as terrorism from protracted political struggles, increasing urban crime, widespread corruption and violations of human rights, there are reasons for optimism. Small-scale irrigation schemes (*mini-riegos*) have been installed in a number of Highlands areas with encouraging results when combined with diversification into non-traditional high-value export crops. Resulting increases in, 1) labor productivity and value-product, 2) considerably increased farm incomes and direct employment per unit of land, and 3) attendant multiplier effects through backward and forward linkages,

show great potential in helping to alleviate rural poverty and retain populations at their source.

As a corollary to the technological progress referred to above, it has become increasingly apparent that greatly increased attention must be accorded to natural resources management (NRM) problems related to the ecological health of watersheds. This includes the need for rapid adoption of more balanced and environmentally compatible means of pest control and fertility enhancement as alternatives to continued intensive agro-chemical use. Without these changes, productivity and employment gains made possible by irrigation and diversification cannot be rapidly replicated, nor can they be sustained over the longer run.

Again, there is reason for optimism. The considerable experience in recent years with improved NRM at the watershed level through local group initiatives in adopting agro-forestry and on-farm soil and water conservation practices provides an encouraging technological baseline for future NRM improvement, combined with rapid productivity, income and employment growth. Equally encouraging are experiences with integrated pest management practices at the small-farm level, as well as innovative options for stimulating producer initiatives in prioritizing and assisting to finance agricultural research and technology transfer activities.

Although these experiences at the farm and watershed levels have not yet extended to more than a small number of total agricultural producers, it has had a sufficient demonstration effect to permeate the consciousness of a considerable portion of both public and private sector agricultural professionals, of the mass media, and, more and more, of the general public. Until recently, professional and national (as well as international) attention had focussed largely on natural forests and protected areas. It is now widely recognized as essential to a viable NRM and environmental protection strategy for Guatemala to focus equal or greater attention on achieving sustainable utilization of the existing agricultural and production forestry resource base in a manner that rapidly increases both rural employment and incomes.

The successes and problems encountered in watershed NRM initiatives also have led to a growing recognition that the existing policy, institutional and legal framework is inappropriate and limits potential for mobilizing more rapid watershed level NRM improvements. Changes in awareness and attitudes both within the public and private sectors, and at the national and local levels, suggests that timing is opportune to initiate positive changes in this framework to facilitate and mobilize initiatives of rural people to manage their natural resources on a sustainable basis.

NRM policies in Guatemala presently are expressed generally through a series of sub-sector laws, now largely out-moded (for example,

Protected Areas Law, Forestry Law, Plant Protection Law, etc). Several initiatives have developed draft law proposals for modernizing these sub-sector legal dispositions (e.g., draft forestry law, draft water law, draft soils law, draft plant sanitation law), some of which have been presented for legislative consideration. Unfortunately, these proposed laws generally have been developed without clear estimates or understanding of long-term economic consequences-- winners and losers-- and often without consideration of cross-impacts of legally imposed policies for one sub-sector on related sub-sectors.

The approach to policy improvement through these proposed laws also continues to be disturbingly normative, generally seeking to achieve NRM and conservation compliance through restrictions, controls and penalties administered by GOG institutions, without parallel market-linked policies to facilitate and encourage appropriate NRM behavior through the operation of market forces and economic self-interest. Furthermore, this normative approach fails to recognize the persistent institutional inability of GOG agencies to assure thorough and objective application of these normative provisions.

As has been demonstrated in a number of worldwide experiences, successful NRM requires sufficient levels of both consensus and popular participation. This can most effectively be fostered, developed and achieved through collective efforts, combined with appropriate divisions of roles and responsibilities between and among public and private sectors, and national and local institutional levels, with decisions and activity choices within watersheds being based on initiatives of and management by community-based organizations.

In Guatemala, recognized need, practical potential, and timeliness for major initiatives in improving NRM policies and watershed-level programs have converged.

### **C. Current Responses to Natural Resources Management Problems and Constraints.**

1. **GOG Activities.** With the return to democratic government in 1986, the GOG increasingly has placed high priority on NRM and sustainable agriculture. During the 1986-91 Presidential Administration, the National Environmental Commission (CONAMA) and the National Council for Protected Areas (CONAP) were established. These institutional policy initiatives, and increased attention to NRM policies and programs by MAGA, have contributed to 1) enhance GOG interest in and commitment to addressing natural resources policy change needs, 2) development of a coherent strategy for agricultural and natural resources sector policy applications, and, 3) increased efforts to expand and accelerate more effective and integrated management programs within watersheds and protected areas.

renewable natural resources."

Additionally, the GOG has been cooperating with multilateral donors in exploring opportunities for developing new initiatives, investments and programs in environmental and natural resources (ENR) policy improvement, related institutional modernization, increased NRM field activities and environmental protection programs. These are detailed in the section on Other Donor Activities. The GOG also joined forces with the donor community (including significant support from USAID) in 1991 to develop over a two-year period of analysis and dialogue, the Forestry Action Plan for Guatemala (PAFG). This effort, albeit with emphasis on the forestry sector, represents a clear and forward-looking statement on the management of natural resources.

Establishment of CONAMA and CONAP has resulted in a higher political profile for environmental regulation and protection issues. However, there are continuing chronic weaknesses among GOG institutions in terms of orderly and analysis-based policy improvement capability, as well as in field application of policies and implementation of NRM programs. In addition, as described in the previous section, there is a continuing sectoralized approach to policy change initiatives with little progress towards a more comprehensive and integrating approach that considers NRM needs and objectives from a cross-sector perspective.

Despite increased attention in recent years to environmental and NRM concerns, there appears to be some uncertainty, and perhaps erosion of both resolve and support within the higher levels of the GOG, for dealing with pressing environmental and NRM challenges and opportunities. In part, this uncertainty results from the existing inconsistent and largely ineffective policy and regulatory framework, and on internal divisions on how to proceed. Concerns are openly expressed about politization of ENR issues, proliferation of government bureaucracy, poorly articulated and sometimes contradictory new proposals for laws and regulations, and disincentives for more dynamic private sector involvement in NRM. These uncertainties have without doubt perpetuated continuing chronic public sector weaknesses manifested by lack of adequately trained staff, poor budgetary support, and uncoordinated inter- and intra-sector approaches and programs.

**2. USAID Involvement in Natural Resources Management Improvement.** For many years USAID/Guatemala has supported NRM activities as an integral part of its agriculture sector development strategy and program. Experience with these NRM activities has contributed considerably to the evolution of the USAID program in Guatemala to place relatively greater priority on NRM interventions. With the advent of the AID program-focussed strategic planning system, "sustainable NRM", and more recently, the more focused "Improved Management of the Natural Resources Base", gained prominence as one of five strategic objectives (SO)

of the USAID/Guatemala Action Plan. In the future, the USAID/Guatemala Action Plan will become even more focussed, with emphasis being given to three strategic objectives: population, NRM and democratic institutions. The Community-based Natural Resources Management (CNRM) Project will assist in the transition to this more focussed orientation.

Beginning in 1981 with the Small Farmer Diversification Project (SFDP), USAID strategy has been to improve the well-being of Highlands small farmers through diversification into non-traditional export crops, primarily vegetables and fruits. This strategy was premised on establishment of small-scale irrigation installations, and included pilot activities to gain experience in encouraging farmers to adopt on-farm soil and water conservation practices. Based on SFDP experience, the five-year Highlands Agricultural Development Project (HAD) (520-0274) was initiated in 1983. HAD continued emphasis on agricultural diversification through small-scale irrigation, but included promotion of on-farm soil and water management and other sound agronomic practices as an integral part of small farmer assistance. This was considered necessary to assure sustainability of productivity gains achieved through diversification. Additionally, HAD initiated a small pilot activity to test and adapt agro-forestry technologies. A second five-year HAD-Phase II Project was initiated in 1988 to continue work on increasing farm productivity and rural incomes through irrigated diversification and on-farm resource management. In addition, due to a growing recognition of the need to assure sustainability of irrigation system water supplies and the critical role of upper watershed stability in achieving this, the HAD II Project added a watershed management component that built on previously promising agro-forestry and upper watershed conservation technologies tested under HAD. HAD II also included an activity focussed on environmentally compatible pest management in order to minimize growing problems in pesticide use.

In 1990, a grant to CARE/Guatemala was approved under HAD II to test, develop and demonstrate pilot integrated watershed management models, with many of these linked directly to small-scale irrigation schemes developed previously. CARE was selected for the purpose because of previous experience in-country with agroforestry practices aimed at small holder farmers.

The 1.8 million hectare Maya Biosphere Reserve in the northeastern Peten, is part of the largest contiguous block of intact primary tropical forest in Central America. As described elsewhere, The Petén is experiencing severe deforestation and destruction from the onslaught of slash and burn agriculture accompanied by widespread inappropriate forest exploitation -- high-grading of valuable hardwood species, unmanaged spread of penetration roads, and lack of forest management. In 1990,

USAID/Guatemala initiated the **Maya Biosphere Project (Mayarema)** in The Petén in response to Congressional mandates for reducing global tropical deforestation and loss of biological diversity. Mayarema seeks to achieve environmental management improvements within the Reserve through strengthening public and private ENR institutions and promoting community participation.

In 1990, the ROCAP/RENARM Project was initiated. This is a Central American regional project that works through several regional level public and private organizations (e.g., CCAD, PACA, Paseo Pantera, CATIE and Zamorana). It primarily assists NGO's in each country to more effectively carry out natural resource management and environmental protection promotional activities in the following areas: 1) Environmental awareness, education and bio-diversity protection, 2) Policy improvement, and, 3) Sustainable agriculture and forestry production practises.

In early 1991, USAID/Guatemala embarked on an analytical and planning exercise to examine the full range of ENR problems and possible interventions that might be undertaken to assist in achieving the NRM Strategic Objective. A **Concept Paper for Sustainable Natural Resources Management in Guatemala** resulted from this effort. Based on this comprehensive overview of ENR needs and opportunities, a PID for the **Community Natural Resources Management Project (CNRM)** was prepared in September, 1992. The PID identified NRM-related policy improvement and application, and mobilization of communities for integrated watershed management as key priority interventions for possible AID assistance.

The CNRM Project was initially conceived as a medium term (seven-year LOP) effort. As the design process moved forward, it became apparent that a number of technological, political, institutional and process or methodological uncertainties made it advisable to first undertake an interim Project. This interim project is aimed at further defining and consolidating the technological, institutional and methodological base for both integrated watershed management and for the policy improvement process. It also is expected to bring about key NRM policy changes. With these in place, a longer-term project for accelerated replication will be appropriate.

The project is fully responsive to the Mission's NRM Strategic Objective: Improved Management of the Natural Resource Base. It will assist in achievement of strategic performance indicators, and directly addresses the Mission's policy agenda specified in the Action Plan. The USAID policy agenda and GOG legislative agenda are described below under the technical analysis for the policy improvement component.

**3. Other Donor Natural Resource Management Improvement Activities and Plans.** Traditionally, donor activities supporting improved management and sustainable utilization of RNR have been treated as

elements of production technology generation and transfer programs or as elements of area-specific integrated rural development projects. Other donors have more recently been focusing relatively greater attention directly on environmental concerns, and on management, conservation, preservation and sustainable use of the renewable natural resource base. This increased focus on the natural resource dimensions of development has resulted in several area development/environmental protection-type projects supported by the EEC, the Dutch, BID and IFAD/OPEC.

An area development/environmental protection project covering the Lake Atitlan drainage basin and financed by the EEC, has been operating for 4 years. This project supports investments in infrastructure such as drainage, sewerage, potable water and reforestation, as well as on-farm conservation activities and local institutional development activities. Another EEC-financed protection/development project, covering 15 municipalities in the Department of Huehuetenango, is about to initiate a second phase, assisting in similar activities. Four other rural area protection\development projects have been signed and are ready to initiate implementation activities. These are located in Sierra Cuchumatanes (one rural development project and a forestry development project), the Chixsoy valley, and several municipalities in Zacapa/Chiquimula.

Recent "Phase I" BID missions to Guatemala identified three project ideas to explore:

-A "Green Belt" Guatemala City environmental protection proposal to cover a 1,000 square kilometer area around the Capital, and

-A broadly conceived "sector program", possibly to encompass water, fisheries, forests, protected areas and wildlife, and to include policies, institutions, planning, investment and finance.

-An environmental protection, archeological preservation, tourism development and sustainable use project for The Petén.

BID also recently signed an agreement for non-reimbursable funding of US\$2.0 Million (plus \$200,000 in counterpart) for institutional strengthening of CONAMA and establishment of an environmental program. The project includes five activities:

1. Strengthening of CONAMA;
2. Preparation of proposals for reform and development of legal regulations related to environmental matters;
3. Environmental education;
4. Identification and prioritization of environmental projects and of actions for controlling undesirable sector impacts;

**5. Mechanisms for territorial organization for environmental matters, and for capturing financial resources for environmental protection purposes.**

A recent World Bank identification mission has recommended an US\$800,000 one year review and study of environmental and natural resources (ENR) problems and alternative solutions, to be used to assist in defining and designing possible investment projects in the ENR area for World Bank financing. Additionally, a preparatory mission currently is proposing an agricultural sector investment and institutional modernization project which will include sustainable natural resources management aspects.

Table I, attached, provides a summary of major elements of ongoing, approved and proposed ENR-related projects of other donors.

**D. Technical Analysis of Project Components**

**1. INTEGRATED WATERSHED MANAGEMENT COMPONENT (IWM).**

**a. Introduction.** From a technical feasibility standpoint, this project is specifically designed to do pilot work leading to a better foundation for larger scale activities. Although many of the techniques need to be field-tested under real life conditions in close collaboration with client farmers, little is so new as to give pause as concerns the overall technical feasibility of the integrated watershed management component.

The issues are in essence ones of approach and strategy-- making the transition from the ongoing agroforestry oriented watershed extension project to a community-based, integrated watershed management project. The institutional willingness and commitment among the principal implementation agencies exists. None of the matters discussed below call into question the technical feasibility of the component. They are, in the main, suggestions and recommendations about the approach or direction of certain activities anticipated under this component.

There are certainly some unknowns involved in the implementation of this component of the CNRM project but the only antidote is field experience. This is one of the reasons why the monitoring and evaluation activities intentionally have been accorded such high profile.

**b. A Vision of Watershed Management.** Stable watersheds can be defined in terms of both their on-site conditions and their off-site impacts. Within the watersheds, the mini-riego sites established to raise agricultural productivity and farmer incomes will need continuing and reliable water supplies. Further upstream, local users need economically and ecologically viable agricultural and natural resources management technologies in order to continue to earn their livelihoods for years to come on the land

they own and occupy. Off-site impacts include declining or irregular water flows for downstream users or the social disintegration among the watershed communities who migrate to new areas or to the cities.

In many of the watersheds currently being treated by CARE/DIGEBOS/Peace Corps, under the HAD Watershed Component, the negative correlation between potential use (land capability) and actual use clearly portends a continuing spiral of erosion, disrupted water supplies, declining productivity, spreading poverty and social tension.

Similarly, population densities in these watersheds range from 8 to 728 people per square kilometer. The higher population densities are found in the better watered, volcanic soils areas of the Altiplano while the lower figures come from the drier areas of the Oriente. Clearly, no single intervention or single selection of interventions can be applied across the board. Increases in population density do not necessarily lead to degradation although there is certainly a limit. Rural people stimulated by production gains and motivated by the marketplace will be more than likely to appropriately manage even marginal lands. Cohesive communities in a cohesive society tend to conserve their natural resources because they are convinced that it is in their best interests to do so.

Tree-planting, either to rehabilitate small areas or in agroforestry configurations in agricultural plots will not be enough. The land currently under agriculture, some highly productive, is being cultivated using inappropriate practices, leading to soil erosion, soil fertility losses, increased run-off, land slumps and landslides, and to the inevitable need to seek new areas for clearing and cultivation, either within the watershed or elsewhere. Although *mini-riego* development was targeted at the most productive, less sloping lands at the base of the watersheds, it is now being pursued spontaneously and widely in many mid-slope areas of the watersheds. The economic and ecological sustainability of these activities seems dubious. Short-term gains will likely lead to long-term degradation. In some watersheds, the spontaneous spread of *mini-riego* in the middle elevations is threatening and curtailing the water supply to the presumably more sustainable *mini-riego* plots downstream, thus adding an element of heightened social tensions to the agro-ecological drama.

Land-clearing for agriculture at middle elevations, whether for traditional or non-traditional crops, using irrigation or not, is accelerating the rate of degradation and creating the pressures which eventually lead to more land-clearing and eventually to the destruction of the watershed function itself. From the market viewpoint, the expansion of NTAEs on middle elevations may be increasing commodity supplies and driving down prices thus jeopardizing the economic viability for all concerned.

It is not clear that these more informal, mid-slope NTAEs plots and *mini-riegos* are receiving technical assistance aimed at making them more sustainable, even where such might be possible. While some evidence of soil conservation practices are evident, much of these seem empirical in nature and inadequate to the challenges of agriculture on steep slopes. The decision to halt the social payments for soil and water conservation has severely limited the acceptance of these practices and curtailed DIGESA's former program impact in this area. It is felt that the issue of social payments should be re-examined.

CARE and DIGEBOS activities and capabilities have been in large measure directed at tree-planting and agroforestry. They currently have neither the skills nor the personnel to widen the range of their assistance to cover the panoply of technological interventions up and down the watersheds to achieve sustainability and environmental stability. DIGESA's role in addressing the need for sustainable agriculture and soil and water conservation will thus be vital to the success of the Community Management of Natural Resources Project.

The choice of technological interventions must be matched to the site conditions (mainly soil condition and slope) and actual land-use patterns-- and very importantly to the socio-economic realities of production, consumption and marketing therein. In many cases, while it is possible to "push the envelope"<sup>1</sup> in terms of raising sustainable productivity on certain sites, the application of these technologies will be conditioned by the costs involved and the benefits to be obtained.

**c. Popular Participation and Community Organization.** Emphasis on the participatory dimensions of the watershed model, one of the immediate objectives of this component, will be pursued through specific project supported activities to organize community residents in pilot watersheds. Reasons behind this community organization approach and what it can achieve are worth reiterating.

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<sup>1</sup> The present land capability assessment methodology being used in Guatemala is patterned after the USDA system. This system is inappropriate for the highlands of Guatemala. It fails to take into account the wide variety of soil and water conservation, sustainable agriculture and agroforestry options which make it possible, again within limits, to utilize lands which in the USDA methodology can only be classified as forestry and/or protection sites. For some time now, there has been a proposal contained in the Tropical Forestry Action Plan for Central America to attempt to adapt the Costa Rican Land-Use Capability Classification System developed by the Tropical Science Center in San Jose for use in other countries of the Region. This may well be a decision to be considered under the Policy Component of this project.

One important consideration is the question of efficiency and impact in technology transfer. Human resources trained and available to guide the watershed management process and to promote and extend it among watershed inhabitants are presently too limited to allow a one-on-one farmer/extension agent approach. Most extension agents have been trained in agriculture and natural resources management and will need much more preparation to work as agents of change within a community-based participatory development strategy.

More important, however, and more relevant to the Guatemalan situation is the need to create or rebuild community and local level institutions that have been directly suppressed or indirectly discouraged by the decades-long internal struggles, conflict and violence. A potential spin-off of community organization for watershed management, if properly implemented will be a renewal of local conviction and capability among rural people as a community to diagnose and resolve problems. The community approach also creates the logic for local empowerment and provides a non-threatening forum in which people can speak out about topics of concern; for example, on issues related to NRM policies.

Natural resources management frequently can only be addressed through group decision-making by an organized community. In many communities, there are community-based natural resources management and utilization issues (eg. water use for irrigation, fire prevention, grazing rights and practices, off-farm consequences of degradation) which need high levels of local consensus in order to be resolved. Then too, the pervasive spread of degradation throughout the watershed even though it occurs on individual plots, will be additive and affect all community residents. The destiny of watershed residents is inexorably linked, both individually and collectively, to the destiny of natural resources on which they depend.

Working together as a community also can serve as a focal point for other community-based cooperative actions, such as community infrastructure (potable water systems, access roads, electrification, health clinics and schools), local marketing initiatives, and for soliciting services from government and/or other development projects.

Equally important is the need for full participation in planning watershed management activities to be carried out. Early and realistic input from participants regarding their attitudes and interests vis-a-vis NRM, and their expectations from the project can be the starting point for community-based needs assessment, a vital input into program planning. This, in turn, will get local people engaged, resulting in a more realistic planning baseline, a better sense of the doable and the timing of activities for both staff and participants, and more realistic choices of technological interventions to be developed and transferred in the watershed.

Once the package of interventions emerges, it will provide the rationale for the division of responsibilities and activities among the specialized agencies (CARE, DIGEBOS, DIGESA, and Peace Corps) involved in the project.

Finally, through community organizations, rural inhabitants will have a vehicle for participating in the policy review process and in providing field-informed inputs (especially qualitative ones) to the policy dialogue and to the monitoring and evaluation system.

d. **Axioms to Watershed Planning.** In many watersheds throughout the country, and including some of those already part of on-going activities, the population density far exceeds the potential carrying capacity of the land. For this reason, both project personnel and participants, as well as national planners and decision-makers, must recognize that long-term natural resources stability will need parallel efforts to develop off-farm employment opportunities through the development of the industrial and service sectors of the national economy. Land tenure and land distribution based solutions to absorb excess populations of more fragile ecosystems also will need attention. Likewise, development of sound land-use strategies for the lowland tropics of the Peten will be necessary in order to continue to receive those colonizing these areas in a more rational relationship with the natural resource base.

Failure to recognize these inexorable constraints only will postpone the final reckoning and lead to greater social disintegration and natural resources degradation. The cost of rehabilitation, and negative impacts on national development-- for both society and natural resources, will be greater in the future without affirmative remedial action now. Herein lies some of the links with the policy component-- watershed management planning can provide qualitative and quantitative inputs about rural sector development options and the need for adjustments.

As has been mentioned elsewhere in this analysis, many technological interventions are at hand to increase sustainability of current agricultural production practices. There is a limit, however, to what can be done. In some cases, landholdings may simply be too small to sustain the family, either in subsistence or income terms. Many rural Guatemalans are presently dependent on their earnings as migrant laborers in the coffee, cane and cotton sectors. Elsewhere, the lands held may be too steep to permit cultivation of any kind.

The expansion of mini-riego now becoming manifest on slope areas can only represent a transitory production gain, destined to self-destruct for both ecological and economic reasons. Nor are soil and water conservation and sustainable agriculture practices universally applicable. They often are more labor intensive,

compelling farmers to increase their costs of production for crops that were only marginally profitable to begin with, particularly with the rather disadvantageous marketing conditions currently reigning in the highlands areas of the country.

There are no easy solutions for these dilemmas. Nevertheless, properly executed watershed management planning can go a long way in helping to deal with them. While planning activities of this project must address the near-term, they must as well not lose sight of the medium to long-term. It would be wise to avoid investing scarce resources (of either the project or the participants) on areas which, because of their inherent limitations, are likely to or should fall outside future production schemes of the watershed. The most effective watershed management programs worldwide have endeavored to match investments to productive potential.

**e. Watershed Action Plans and Time Horizons.** Local Watershed Management Action plans will encompass several years of project supported activities, beginning with simpler, less demanding interventions and moving into more sophisticated ones as participants are able to absorb them. It is likely that in most watersheds, the limited time-frame of the project will not be sufficient to carry out all of the changes and interventions necessary to bring it to a stable environmental condition. Technological imperatives, nevertheless, should not override the choices by the participants because of the worrisome condition of the watershed. Real and lasting impact and project replicability can only be achieved by a high level of community understanding, consensus and capability.

It is highly unlikely that participants will choose interventions at the outset whose implementation entails significant production trade-offs to achieve soil and water conservation objectives. Rural Guatemalans have seen too many projects come and go without living up to their promised achievements and benefits to the community. This has fortified their natural tendency towards risk aversion. The Watershed Planning Diagnostic Model and the information extracted in preparing a Watershed Management Profile must take these considerations into account in selecting treatment options.

For example, while radical bench terraces may be the only long-term solution for sustainable productivity on a certain site, local people may be unwilling or unable to muster the necessary labor to install them. Interestingly, off-farm employment opportunities or improved production and income from small-scale irrigation may provide farmers with more financial resources on which to draw for implementing agriculture on their more marginal upstream lands. Paradoxically, they may have less time to devote to these lands.

Interim measures may be necessary although these clearly need to be both agro-ecological and economically feasible. In many countries, both developed and developing, lands that were targeted for improved, conservation oriented agriculture because of problems similar to those of the highlands of Guatemala, have now been withdrawn from the national production equation voluntarily by their owners. They realized that life in the hills because of the inherent resource limitations was bound to be one of hardship and bare subsistence, and fortunately, there were other options.

f. **Reforestation, Other Options or Protection.** It may be wiser over the long run, for all concerned, if more passive protection practices were employed rather than more costly reforestation of dubious productivity and unlikely returns. Why replant an area with timber trees, if the slope or soil conditions are such that they should not be harvested in the future, and if the watershed function would be just as well served through protection. This is often a difficult concept to grasp for those accustomed to the typically action-oriented reforestation programs of the past.

In many parts of the watersheds, reforestation is being carried out on sites where in the future, harvesting cannot be permitted. The issue is not so much the role of the trees in arresting the erosion but the role of the forest. In most cases, it is the understory (shrubs, grasses and leaf litter) which protect the soil and fosters water absorption and retention. Watershed function can more often than not be achieved by protecting a deforested site from fire and grazing, activities which in any case will be a necessary part of the reforestation effort. Planting a dense monoculture (particularly with some species such as *Eucalyptus* spp.) can actually suppress the understory and increase run-off and erosion. Why invest significant amounts (\$300 to \$750 per hectare) of either government or private money to replant a site which should not be harvested in the future?

On other sites, non-traditional re-vegetation approaches would be more ecologically and economically feasible. Direct seeding, planting by vegetative means (eg. "pseudostacas" of *Gliricidia sepium*) or bare-root seedlings can be used to considerably reduce planting costs. An ideal scenario on sites which need reforestation but are marginal in nature, would be direct seeding of nitrogen-fixing species of fast growth which could be harvested on a coppice basis for both fuelwood and poles, posts and crop supports. Throughout the world, projects are using species such as *Leucaena* spp., *Gliricidia sepium*, *Calliandra* spp. and *Sesbania* spp., species which originate in Central America, for just these purposes! It may also be possible to rationalize the management and utilization of the middle elevation Oak (*Quercus* spp.) coppices which are now being harvested indiscriminately for the same end products.

This fixation with traditional reforestation (nurseries, containerized seedlings, plantation forestry) has overshadowed the development of the full potential of natural forest management. In all of the above cases, brokered understandings among the communities to achieve a local consensus about the need for protecting these secondary but potentially productive forest formations will be the key to success.

g. **The Extension and Technical Assistance Fund (FEAT).** Some of the early thinking about the role of FEAT as part of CNRM's integrated watershed management component suggested the expansion of these activities to include forestry and natural resources management extension services in other areas of the watersheds. For a series of reasons, this analysis recommends continuation of the present focus of FEAT activities, i.e, working with farmers engaged in the production of NTAEs in *mini-riego* situations, typically at the base of watersheds.

The importance of FEAT technical assistance there, including soil and water conservation measures as water becomes more scarce, and particularly managed agrochemical use, will also have important implications for environmental stability. Improved marketing conditions for small-holders also will be a useful objective of these activities so that participants are able to capture full income benefits of increased production.

The issue of agrochemical use deserves special attention here. The present arrangements for FEAT extensionists working with small producers on formal *mini-riego* plots to improve agro-chemical use is a mitigation recommendation associated with the HAD III Project EIA and is also part of the EIA for this project. The technology transfer activities related to avoiding the negative impacts of agrochemical use can be used as models to train extension and promotional staff who will be working with other farmers in the upstream areas. It should also provide the practical context for the training of agro-service store personnel who sell these products to the farmers.

One of the important reasons for this recommendation is also the difficulty of linking payments to extensionists with production/income gains from the slower gestating NRM type activities. An exception might logically be private sector consulting services to forest owners in the preparation of forest management plans. These plans would facilitate obtaining the requisite permits from DIGEBOS for rational but highly remunerative forest utilization. This field, its technology and the regulatory framework, however, needs more development before it can be replicated by the private sector. CARE's efforts in forestry management, both in CNRM and in other projects, may lay the basis for a more substantive consideration of the policy of private sector forestry management consulting services towards the end of this project.

## 2. POLICY IMPROVEMENT COMPONENT.

**a. Background.** A consensus is emerging among policy makers and development practitioners that recognizes the important role of policy development and implementation in natural resources management. Well designed technical interventions such as those proposed in the watershed management component of the Community Natural Resources Management Project (CNRM) require a supportive policy environment to achieve resource sustainability and a maximization of economic benefits over the long term.

At the same time, most developing countries, including Guatemala, lack the institutional, human and financial resources to adequately prepare laws, design regulations, and implement policies in support of natural resource management. These constraints contribute to an *ad hoc* approach to policy making characterized by the lack of a solid institutionalized process which lends itself to participation by resource user groups, and a dearth of high quality analytical inputs into that process.

**b. Sectoral Policy Interests and Natural Resource Sustainability.** Recent efforts by enlightened policy makers in developing countries to pass legislation designed to enhance the public sector's role in environmental and natural resource policy have often met with strong opposition from traditional sectoral interests. Interests such as those representing commercial forestry, large-scale agriculture, and livestock producers have strong backing from public-sector ministries and agencies whose primary focus is on the development and exploitation of renewable resources.

The design of the CNRM policy component takes full account of these institutional realities. It proposes a "Core Implementation Team" for the project, composed of the key public institution charged with policy development and institutional coordination in natural resource management, CONAMA, and the most experienced private-sector institution in environmental education and policy analysis, ASIES. The use of these institutions will insure that the natural resource policy agenda, analysis, and implementation are properly "profiled" and not subsumed as an element of sectoral policy.

This is a similar approach to that being undertaken in other developing countries with similar resource management problems and newly established public sector institutions which have a mandate to develop sustainable resource management policies and to coordinate their implementation across sectors.

**c. Policy Improvement Component Feasibility.** The design of the policy improvement component emphasizes process, participation, and human resource development. In this context, human resource development through participation and training takes on greater

importance than specific techniques or methodologies for policy analysis. Therefore, the component's technical analysis, while important, should be viewed as supportive of the policy improvement process.

The policy component attempts to address the important weaknesses in the policy making process. The implementation approach emphasizes a highly participatory approach which allows for analytical inputs, grassroots participation, and government/private sector dialogue to support a policy agenda and policy analysis. Furthermore, recognizing the inherent constraints to policy development and implementation, the Mission's Strategy in support of improved natural resources management, and ongoing Mission and ROCAP efforts (e.g., MAYAREMA and the RENARM Green Book), the DESFIL consultants believe that the recommended management structure, component objectives, and the sequencing and selection of project activities are realistic, cost-effective, and, above all, capable of being implemented successfully.

The modest gains made in previous work as shown in the RENARM Green Book in identifying components of a policy inventory need to be consolidated and built upon through a more formalized institutional framework which gives Guatemalan institutions a stake in formulating the policy agenda.

The policy component, through its participatory approach, permits and encourages inputs of data and analysis from the local level through community organizations, NGO's, and municipal government. The management structure, including the composition of the Consultative Group and the Technical Management Working Group, will solicit informally and formally recommendations for support of specific analysis, training, and dissemination activities. Participating organizations from the IWM component, MAYAREMA and RENARM will participate fully in all stages of the policy component to insure that community level concerns are part of assessment, analysis, and implementation.

Analysis of community-level institutions outlined in the Social Analysis indicates that local-level institutions in the CARE watersheds are poorly organized and will require increased efforts by CARE to improve the environment for participation. Local-level participation in the policy component by MAYAREMA institutions will likely be at a higher level over the short term. The project's management structure as recommended by DESFIL should minimize the possibility that implementation of the component becomes characterized as "top-down".

d. Policy Improvement Component Implementation. The development and implementation of the policy component will require participation of the Guatemalan public and private sectors, along with expatriate technical assistance. Political developments over the last few years including the establishment of CONAMA and CONAP

and the gradual opening of the political process are cause for cautious optimism. At the same time, the ad hoc nature of the policy-making process coupled with an under-staffed and under-financed public sector and limited public participation are important constraints to the development of well-designed natural resources management policy improvements. Institutions at the national, regional and community levels need to be organized for policy dialogue, policy analysis and policy implementation.

(i) Overview of High-Level National Public Sector Involvement in Natural Resources Management Policy Formulation and Implementation. The Guatemalan Congress and the Office of the President play the highest level decision-making role in natural resource policy development and implementation. To a large extent this process has resulted in a collection of laws (i.e., *Ley Forestal* and *Ley de Protección y Mejoramiento del Medio Ambiente*), *reglamentos*, or specific rules governing the use of resources based on technical input (i.e., prohibitions on tree cutting), and delegations of authority to *municipalidades* or *Other Local Authorities*, which authorize them to manage resources such as water and publicly-held lands.

The formulation and approval of laws takes place on an ad hoc basis and with little either "analytical" or "popular" input into the process. Those interest groups with access and power to influence the process are the most important input into the design of policies.

National-level Ministries and Commissions, and their line organizations and/or field offices, are charged with the responsibility of formulating and implementing policies and legal dispositions, and/or enforcing compliance. Many of these institutions, especially the newer organizations such as CONAMA and CONAP, are generally regarded as weak and lacking the necessary financial and human resources to adequately formulate and implement policy. At the same time, when sectoral ministries formulate policies, these often reflect narrow sectoral interests which may work against the sustainable management of natural resources. For instance, agricultural policies which promote irrigation may result in diminished supplies of water for household and industrial uses.

(ii) Local Public Sector Institutions. Currently, municipalities do not develop natural resources policy, but do influence resource use by being responsible for the provision of water and designating land use on publicly held lands. Municipalities also receive an 8% share of government revenue to implement a variety of projects. In 1987 revenues derived from the 8% transfer accounted for over 55% of total revenues received by municipalities. The extent to which these resources are used in natural resource related activities is not known, but should be considered as an option in the future.

(iii) Responsibilities of Specific Public Sector

Institutions in Natural Resource Management Policy. Public sector institutions which could play a role in the policy component of the Community Natural Resources Management Project include: The MAGA Policy Analysis Group (PARAGRO), the *Comisión Nacional de Medio Ambiente* (CONAMA) and the *Comisión Nacional de Areas Protegidas* (CONAP), and, several MAGA line agencies, including DIGESA, DIGEBOS, DITIPESCA and DIGESEPE. These institutions all have varying roles and responsibilities to formulate, coordinate and/or implement/enforce compliance of policies that support sustainable agriculture, water and forest resource management and conservation of biological diversity. However, there is a compelling need to: (1) Order institutional roles and upgrade institutional capacities to analyze policy constraints and bottlenecks, as well as costs and benefits of existing and alternative policies and programs, (2) improve mechanisms for policy feedback from stakeholders, especially at the community and watershed levels, municipalities, and regional development councils, and (3) provide for information dissemination and dialogue, as well as general natural resource management education to different stakeholders and the general public.

These public sector institutions are analyzed in detail in the Institutional Analysis.

(iv) Non-Governmental Organizations (NGO's). Guatemala has a nascent capability for NGO participation in the policy development process. Environmental NGO's such as *Defensores de la Naturaleza*, CECON, and the *Fundación Mario Dary* are working to establish protected areas and encourage the development of the legal basis for the preservation of biodiversity and the creation of information systems for environmental education. *Fundación Dary* is also working with the *Instituto Guatemalteco de Turismo* to develop more sustainable tourism in Cerro Cahui.

NGO's which undertake research and education activities like the *Asociación de Investigación y Estudios Sociales* (ASIES) have undertaken a wide variety of policy oriented economic and social studies. Since 1988, they have worked on a number of projects in environmental education and participated in the first inventory of laws, policies, and institutions related to the development of natural resources. ASIES is also working on a series of regional environmental profiles.

ASIES is a particularly appropriate institution to examine the issues of NRM policy from the local through the national levels:

- . It has carried out environmental policy workshops in six regions of the country, which brought together stakeholders from public and private and local, municipal, and regional levels. To our knowledge, these are the only actions to date which attempt to integrate policy issues across sector and other interest groups. (The results have been published as

monographs and articles. See, for example, "Políticas ambientales de la región central," *Momento*, Año 7, No. 5, 1992, "Políticas ambientales de la región metropolitana," *Momento*, Año 7, No. 3, 1992, and "Políticas ambientales: región Sur-oriente de Guatemala," *Momento*, Año 6, No. 7, 1991.)

It has carried out an excellent study on Guatemalan social organization, from the local through the national levels, which examines the constraints against and opportunities for the participation of various units of social organization in the national fabric. This analysis can be very helpful in examining policy and its interface with local institutions. (See *Organización social: notas sobre el pasado y lineamientos para el futuro*. Guatemala, nd.)

The *Centro de Investigaciones Economicas Nacionales* (CIEN) is currently undertaking two research projects in the area of environmental and natural resources management. With support from CINDE, Panama, they are participating in an analysis of economic instruments for pollution control. They also have a contract with the Guatemalan congress to provide economic analysis into the development of the new water law. This group has also worked with the Democratic Initiatives program of USAID. CIEN has the experience and enough human resource capacity to play some role in the policy component. They are the only institution which attempts to incorporate economic analysis into natural resource and environmental issues. Some of their younger policy analysts would be good candidates for graduate level training in resource economics.

There are also a number of recently established community based environmental NGO's. Their capacity to participate in the implementation of internationally funded projects is uncertain. However, their knowledge and experience at the grass roots level should make some of them good candidate for participation in the training activities supported under CNRM.

Despite the progress made by the NGO community in improving the information base on environmental issues and in advancing the cause of environmental education, with the exception of ASIES, they have not played a significant role in the policy process, particularly at the community level. There are no Guatemalan NGO's or private consulting firms exclusively oriented towards policy studies on natural resources management.

(v) Summary of Implementation Elements. The capacity of the Guatemalan public sector to undertake policy analysis related to natural resources management is weak. At the same time the prevailing political environment has not given a high profile to environmental issues. Nevertheless, a well designed project should encourage participation by the key public sector entities and

ultimately assist in stimulating policy dialogue and improving policy analysis and implementation.

National level NGO's mentioned above have more capacity to undertake policy analysis, education and training related activities in natural resource management. In fact, the Guatemalan Congress has begun to utilize the expertise of these organizations in the design of its laws and policies(i.e., water law). They should play a key role in policy inventory, policy analysis and policy implementation activities.

For a more detailed analysis of both public and private sector institutions and their potential roles in the policy improvement component, see the Institutional Analysis.

e. The Policy Agenda.

An analytically-based prioritized natural resources management agenda for analysis and action will be an important early output of the policy improvement component. In the meantime, USAID and PARAGRO have developed an initial natural resources management policy agenda which is included in the current USAID Action Plan. This agenda is as follows:

- **Policy improvements to establish and apply incentives for local community management of natural resources, by**
  - promoting community participation in regional GOG development councils, and
  - promoting municipal use of decentralized public funds for NRM activities.
- **Policy analysis and formulation activities to improve legislation and institutional structures that promote more effective NRM, by**
  - modifying the Protected Areas and Forestry Laws to define clearer institutional mandates and responsibilities in managing natural resources.

Early in the project, this agenda will need to be adjusted to become compatible with and complementary to the legislative agenda of the National Congress. Currently proposed Bills or "projects of law" related to policies affecting natural resources management include the following:

- a) Forestry Law
- b) Water Law

- c) Soil Conservation Law
- d) ENR Penal Code and Justices Law
- e) Animal and Vegetable Sanitation
- f) Pesticides Law
- g) Land or Territorial Tax Law
- h) Chicle Law
- i) Parks and Protected Areas
- j) ENR institutional reorganizations
- k) Biodiversity Law
- l) Fisheries Law

As the policy agenda-setting process supported by this component begins to generate results, an analytically-based, more targeted and manageable agenda is expected to become available.

To facilitate management of this relatively complex undertaking in terms of mobilizing human resources, participant working groups will be organized for each analysis activity. Activities at the national and community levels will have overlapping design mandates and, where feasible, team members in common between the two activities. Clearly delineated criteria for selection of analysts will be publicized to foster competition and a transparent selection process. Each analysis will develop baseline indicators in congruity with the monitoring and evaluation component, and a plan and strategy for review and dissemination (workshops, seminars, publications, etc.).

The range of problem and policy issues indicates that analysis will be performed by a large and diverse set of individuals, expatriate and Guatemalan, government and private. A small core, contracted implementation technical team will be responsible for implementing the policy analysis process and outputs. Analysis activities will be contracted to appropriate individuals or entities based on criteria such as technical responsiveness, cost, institutional interest and capacity, past performance, etc. The core management team will have associations in both the public and private sector in order to facilitate broad, balanced participation and affiliation. This will make initial implementation more complicated, but provide a more solid base for productive progress in the long term.

Understanding the causes and effects of environmental damage and the costs and benefits of alternative actions and/or inaction can greatly influence governmental policy, institutional procedures and individuals practices. This component will take the lead to initiate a series of surveys to link environmental conditions with natural resource practices and perceptions of laws, regulations, and institutions charged with policy making and application. Increasing knowledge and awareness through training at the international, national and local levels can help alleviate ignorance that causes environmental damage and impedes finding solutions to sustained natural resource management.

### 3. MONITORING AND EVALUATION COMPONENT (M&E).

This component must provide good baseline data on the current status of local-level institutions in the project areas and their changing role in resource management over time. It should be fully integrated into the policy component. The draft M&E Plan (January 27, 1993) suggests program outcomes such as the institutionalization of CONAP's activities and an increasing amount of GOG Funding for CONAP.

While this is a crucial element for the future biodiversity management of the biosphere, the role of local-level institutions in identifying policy constraints and solutions should also be included in the monitoring plan. The M&E component should also identify opportunities for local NGO's, municipal governments, and other stakeholders to participate in the policy component. Through their participation, a specific policy agenda for the Peten will be defined.

Finally, the Mission has approved a six-month activity with the Bastarachea consulting firm. The terms of reference for the activity are very ambitious and accomplishing all the tasks in that time frame will be difficult. While the report will no doubt shed a great deal of light on natural resources issues, it does not address key issues such as participation (local and national), policy dialogue, and stakeholder analysis.

Efforts should be undertaken to target the output of that report to the short-term objectives of the CNRM Policy Component. The suggestions made in the Social Analysis (Annex iv.) concerning the focus of the work are relevant in this regard. Considerable emphasis should be placed on analysis of local institutions in order to increase the likelihood of their participation.

#### **E. Technical Assistance Requirements.**

##### **1. Administrative/Financial Management and Support Staff.**

Requirements in this category respond to the realities of anticipated USAID staffing limitations, and expanded responsibilities resulting from the merger of ROCAP and USAID/Guatemala. As indicated in the Institutional Analysis, Organization and Implementation Arrangements, USAID inputs include the services of a USDH Project Manager and one full-time FN/PSC Assistant Manager. For this limited USAID staffing level to be effective in project management and implementation, it must be supplemented with contracted personnel to carry out administrative and financial management functions required to procure and effectively utilize grant-funded inputs during project implementation. Thus, for the PIC and M&E components, a US Institutional Contractor will provide administrative, financial and sub-contracting management services for procurement and

utilization of grant-funded inputs during the LOP. Likewise, for the IWM Component, CARE, through the Cooperative Agreement, will provide financial, administrative and sub-contracting services for procurement and utilization of grant-funded inputs.

Requirements for contracted financial, administrative and sub-contracting management personnel and related office logistic support staff are estimated to be as follows:

**a. PIC and M&E Components.**

- (i) One full-time expatriate Project Administrator
- (ii) Local Hire Office Personnel (full time)
  - Administrative Assistant;
  - Financial Assistant;
  - Contracts Assistant;
  - Bilingual Secretary;
  - Four Person/Years Annually of Other Office Logistic Support Staff.

**b. IWM Component.**

- (i) Share of CARE Sector Coordinator: 30% of full-time
- (ii) One Full-time Expatriate Project Manager.
- (iii) Local Hire Administrative Personnel
  - Sector Coordinator Assistant: 30% of full-time;
  - Two Full-time Project Coordinators;
  - One Full-time Administrative Coordinator;
  - One Central Office Administrative Assistant: 30% of full-time;
  - One full-time computer assistant;
  - Two Regional Office Administrative Assistants: 35% of full-time;
  - Three Bi-lingual Secretaries in Central Office;
  - Two regional office secretaries: 35% of full-time;
  - Six regional office support personnel: 35% of full-time.

**2. Professional and Technical Specialists.**

**a. PIC and M&E Components.** The technical and institutional analyses identified conditions that have guided the determination of technical assistance requirements. First of all, there are considerable numbers of host country technical professionals in several appropriate academic disciplines that have experience in activities related to environmental protection, natural resources management and sustainable productive resource use (See the host country natural resources professional skills inventory summary in Attachment I). However, these qualified professionals are dispersed throughout a number of public and private organizations or work as independent consultants.

Also, many of these professionals have been involved in policy change activities and/or in data collection and review for monitoring the status of natural resources. However, for most, this has been an ad hoc and largely empirical involvement. They have not had the opportunity to become schooled in or apply appropriate analytical methods and/or process methodologies related to policy improvement or to M&E. Additionally, the public sector has only just begun to give priority to PIC and M&E-type activities. The institutional structure for implementing these activities is still evolving, and the project will have ample opportunity to influence that process.

Based on the above review of natural resources technical expertise and institutional knowhow, technical assistance needs for these programs can best be satisfied in the following manner: 1) contract the best available host country senior professionals to provide technical leadership, management and coordination for implementing these components, 2) provide these professionals with the continuing advisory support of the USAID/JCC policy specialist, and with well-targeted and timely short-term external specialist assistance in analytical and process methodology applications, and, 3) sub-contract to host country organizations, specific studies and other policy improvement and/or M&E activities with clearly defined terms of reference (TOR's), specifying in detail analytical methods and approaches to be used. On-the-job, in-country and off-shore short-term training will be used to fill in some of the most constraining gaps in the knowledge and capacities of these host country technical assistance professionals, while off-shore long-term training will add better trained professionals to the existing manpower base.

Technical assistance requirements are estimated as follows:

- (i) USAID/JCC NRM Policy Specialist
- (ii) Five person/months annually of expatriate Short-term specialists
- (iii) Local hire NRM technical management professionals (full-time)
  - Policy Improvement Technical Coordinator
  - M&E Technical Coordinator
  - M&E technical Assistant
- (iv) Local hire technical analysts/specialists (full-time)
  - Information and Dialogue
  - Legal Analysis and Legal Drafting
  - Economic Policy Analysis
  - Social and Institutional Analysis, and Local/Community Organizations
- (v) Statistical clerks and computer analysts (four person years annually)

(vi) Four other office support staff.

**b. IWM Component.** The CARE Cooperative Agreement proposal specifies 30% of the time of the sector coordinator as expatriate technical assistance. Since this person likely will spend a majority of his time on administrative matters, the position was included under administrative personnel requirements above. Local hire technical assistance personnel are specified as follows:

- (i) Three regional coordinators: 50% of full-time;
- (ii) Six full-time sub-component coordinators;
- (iii) One full-time training and extension assistant;
- (iv) Seven full-time technical assistants;

## **F. Training Plan.**

### **1. IWM Component.**

Under this component, six person/months of grant-funded third country training are planned. In addition, grant-funded in-country workshops are planned during the project as follows:

- a. Integrated Watershed Management Activity**
  - 12 workshops for technical assistants
  - 8 workshops for coordinators
  - 8 orientation workshops
  - 5 evaluation workshops
  
- b. FEAT Activity**
  - 13 workshops for technical assistants
  - 4 workshops for coordinators
  - 2 orientation workshops
  - 5 evaluation workshops

The CARE proposal provides a more detailed description of and budget for the IWM in-country training program. The respective roles and inputs into training by CARE, DIGEBOS, DIGESA, PVO's and Peace Corps volunteers, as well as counterpart-funded training, will be defined through Memoranda-of-Understanding and/or cooperation agreements between CARE and each participating organization.

### **2. PIC and M&E Components.**

The Technical and Institutional analyses provide detailed information on limitations in Guatemala in terms of institutionalized capabilities in NRM policy and M&E related activities. These also review trained manpower requirements and availability of professional capabilities in-country to carry out the various technical and analytical tasks required for implementing these components. The inventory of ENR professionals (professional skills survey) carried out for the Technical Analysis shows an impressive list of professionals in several disciplines

with some training and/or experience in ENR related subjects and activities. What is clearly lacking are specialized analytical skills, and knowledge and experience in application of process methodologies, for both policy improvement and M&E.

In this respect, the inventory of ENR professionals suggests that specializations required for analysis and process management are either not available or are in very short supply, and are dispersed throughout several organizations, thus making it difficult to mobilize studies teams. The organization and implementation arrangements chosen are intended to facilitate access for team-building of available local expertise regardless of institutional affiliation. Nevertheless, in addition to external technical assistance required to complement local expertise and to provide in-country, on-the-job and short-term training during implementation, both short and long term off-shore training will be necessary to build a capacity that includes both needed skills and organizational grouping, to permit host country personnel to gradually assume the role temporarily filled by external assistance, and to improve quality and quantity of output over time.

Of all specializations and skills needed for the various activities embodied in the ENR policy improvement process, social sciences analytical skills are in shortest supply. Few Guatemalan social scientists (e.g., economists, sociologists, anthropologists) have well-developed applied analysis skills, and the number of these that have specialized in applying these skills to natural resource policy issues is even more limited. Although there is greater availability of specialists in the biological and physical sciences who have professional experience in RNR management, these tend to be oriented more to technology generation and transfer solutions to resource misuse problems (combined with regulation and control), than to economic and institutional policies that encourage and facilitate appropriate changes in economic and social behavior. Thus, to increase their effectiveness in policy improvement work, these professionals require opportunities to learn new perspectives and new methodologies focussed on ENR policy alternatives that stimulate and facilitate changes in public attitudes and user behavior based on individual and community self-interest.

Additionally, the professional skills survey shows that there does not exist a sufficient number of well-trained analysts specialized in ENR policy analysis to form a "minimum mass" of leadership and quality control for PIC. This lack includes technical management leadership of process methodologies required for both the PIC and the M&E components. In the short to medium term, this shortage will be offset in part by the USAID/JCC policy specialist, supplemented with short-term expatriate expertise. Also, sending participating personnel to specialized short-courses in the US and/or third countries can help to reduce this constraint. However, both cost-effectiveness and eventual viability of a

permanent institutionalized capacity to provide analytical input, and to technically manage and supervise a meaningful level of ENR policy improvement activities, require that such a capacity be internalized into the Guatemalan manpower base. This calls for specialized graduate training at the Masters level, in addition to skills enhancing through short-courses.

Information transfer skills (e.g., that required in policy dissemination and dialogue activities) exist in modest amounts in Guatemala, but there is a lack of talent with experience in applying these skills to the transfer of analytical information about ENR policy options and impacts.

The proposed training program to fill these gaps uses a three-pronged approach:

**a. In-country Training.** Short-term external specialists (to the extent possible on an intermittent but continuing basis during the LOP) will be accessed to provide on-the-job and short-term in-country training in well-defined high-priority skills. This will include joint task efforts, seminars, workshops, and short-courses of up to one week.

In keeping with the interim and test/demonstration nature of the CNRM project, in-country training opportunities will be explored for utilizing visiting professors (i.e., "Senior Training Fellows" who are on sabbatical or on a Title XII Fellows program) and/or US ABD (all but dissertation) graduate students (i.e., junior training fellows) to co-teach university-level courses (or modules of courses). Likewise, these senior or junior training fellows can provide on-the-job training by advising and/or participating in policy-related studies of mutual interest, as well as by giving seminars and/or by leading discussion groups. The project will pay a modest stipend or living expense supplement, that may vary according to individual circumstances and the time commitment made to project-related training activities while in-country. If justified, international travel costs also may be paid. In general, a minimum half-time commitment would be expected. It is planned to have up to four senior training fellows supported during periods of three to six months each, for a total of up to 20 person months. Up to six junior training fellows will be supported during three to six months each, for a total of 30 person months. It is estimated that stipend costs for senior fellows will average \$2,000/month, while those for junior fellows will average \$1,200/month. Because of the primarily training objective of this input, it will be budgeted as training rather than technical assistance.

Additionally, as an effective in-country training option, advanced students from Guatemalan universities will be incorporated on a spare-time basis as student assistant interns into policy analysis and M&E activities as statistical clerks, research assistants or

computer analysts. This will permit them to learn about policy improvement and M&E methodologies, as well as how to apply analytical skills to ENR policy and M&E topics. Their work can be linked to fulfillment of undergraduate and/or local masters thesis requirements. The objective is not only to provide an opportunity to gain practical experience and learn new skills, but also to motivate young professionals to choose career specialties related to ENR policy improvement. Up to 12 students, in a range of academic disciplines including law, economics and other social sciences, will be selected to participate as interns in PIC and M&E activities, for six months to one year each, for an estimated total of up to 10 student/years during the project. These students will be paid a modest stipend to offset transportation and meals (estimated at no more than \$200/month). Costs for these interns are subsumed under the office support personnel cost item.

**b. Off-shore Short-course Training and Observational Visits.** A number of the professionals included in the inventory of RNR experts have worked in some aspect of RNR management and/or policy improvement, but they lack knowledge of specific methodologies or analytical constructs for application to RNR policy analysis. A similar situation exists for M&E. The productivity, and the objectivity, of several of these persons could be enhanced immensely with training of the type offered in specialized short-courses available in the U.S. Additionally, some short-courses are available in Central America in specialized areas required for improved capacities for implementing these components. It is estimated that up to four persons per year will be sent to short courses ranging from four to six weeks of duration, for a total of 16 persons and 80 person weeks.

Additionally, for high-level leaders and decision-makers in ENR policy change, opportunities will be sought to arrange observational visits on a very selective basis in cases where the visit can provide critical perspectives in the decision-making process. For example, insights gained from a well-planned observational visit might provide the knowledge base for the president of a key congressional commission reviewing a proposed policy improvement law to more effectively manage the approval process. Not more than one observational visit per year of perhaps two weeks each is planned, for a total of four persons and 8 weeks.

**c. Masters training in NRM Policy Analysis.** Perhaps the most valuable training in terms of creating a permanent installed capacity to continue an effective NRM policy improvement program will be at the masters level in social sciences analytical skills applied to environmental and natural resources management policy issues. This type of training is a central element for achieving the objective of upgrading the quality of policy improvement initiatives in Guatemala.

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**COMMUNITY NATURAL RESOURCE MANAGEMENT**

**PROJECT PAPER  
(520-0404)**

**ANNEX IV**

**FINANCIAL AND ECONOMIC ANALYSIS**

**Office of Rural Development  
July 2, 1993**

## ANNEX 4 - DETAILED FINANCIAL AND ECONOMIC ANALYSIS

### 1. Background and Rationale for Analysis.

CNRM is an interim project intended to develop, test and refine organizational models, operational processes and application of known technologies to Guatemalan conditions. The pilot and experimental nature of project activities is equally true of the Integrated Watershed Management Component (IWM) and of the Natural Resources Policy Improvement Component (PIC). The products of the Project's interim efforts will serve as the basis for expanded institutionalized programs for improved community-based renewable natural resources management (NRM) in the future. For these reasons and to the extent that economic considerations may be helpful in judging suitability of support to NRM improvement activities on a pilot and testing basis, application of least-cost criteria is appropriate. Some understanding of individual and social costs and benefits involved also can be helpful in this respect. To the extent that Guatemala data is available, this analysis applies cost-effectiveness criteria, as well as financial and economic costs and benefits analysis to the types of activities being undertaken on a pilot basis in this interim project.

This analysis includes all proposed components to provide a preliminary illustration of the entire project as currently conceived only the MICUENCA (IWM) component will be authorized at this time. For purposes of economic analysis, the distinct nature of inputs and direct outputs for the IWM and the PIC components require that they be treated separately. Since the primary purpose of the Monitoring and Evaluation Component (M&E) will be to provide reliable information about the acceptability and soundness of activities being implemented under the other two components, this analysis allocates M&E costs to the other two components.

As specified in Handbook 3, the purpose of project financial analysis is to compare present value of benefits from the project with present value of costs incurred by the project and its actors/beneficiaries. On the other hand, the purpose of project economic analysis is to estimate the present value or "net worth" of a project to the country in terms of making the best use of scarce resources. Financial and economic analyses generally apply the same cost-benefit methodologies to determine net present values (NPV's) and internal rates of return (IRR's). The difference is that financial analysis uses nominal values and discounted cash flows to determine project and beneficiary level profitability, whereas economic analysis uses "real" resource costs or "opportunity costs" to determine net benefits of the project to the country as a whole, i.e., its social profitability.

For certain types of projects, Handbook 3 guidance suggests that least-cost methods be applied to determine both financial and

economic appropriateness. CNRM qualifies on three counts for the non-standard least-cost approach. This obviates the usual Handbook distinction between financial and economic analysis.

CNRM qualifies for a non-standard approach because:

1) It is an interim project which will develop, test and refine elements of an improved natural resources management system for subsequent replication on an expanded basis. Thus, an unspecified but significant share of total project costs are chargeable to R&D investments that benefit society as a whole. It is inappropriate to scrutinize such investments under the same set of cost-benefit criteria as those used for commercial or infra-structure capital investments.

2) It is focussed on benefits aggregated to the watershed level, as opposed to the individual farm or farmer level. Furthermore, these benefits derive from the interactive and combined impacts of improved NRM activities on enough land in the watershed to positively affect overall watershed natural resource conditions, together with changed behavior of stakeholders resulting from an improved policy framework. Thus, as in the case of most environmental improvement projects, costs and benefits often are not easily linked either in time or spatially. This limits the ability to realistically link and value costs and benefits. Results based on approximations and assumptions tend to be highly speculative and may be misleading.

3) Two of the most innovative components of CNRM are directed respectively to stimulating analytically-based policy change, and to measuring impacts of such policy changes combined with changes in the way NRM is carried out at the local level. Such impacts are first manifested through intermediate changes in local organizational and economic functions, roles and relationships, while measurable final impacts in the physical condition of natural resources at the watershed level may not become apparent until well after the end of the project. Intermediate impacts are more qualitative than quantitative. Also much of the benefit will come from follow-on projects that will rely on the now-proven methods and knowhow, thereby improving efficiency and effectiveness of these subsequent activities. Under these conditions, conventional cost-benefit analysis is neither enlightening nor appropriate.

This is not to say, however, that one should not measure beneficiary profitability of practises being tested and adopted at the farm level. Such measures are indispensable for determining the likelihood of replication and spread effect and thereby guide the focus of future adaptive research. Thus, in addition to the least-cost analysis, financial data from previous CARE on-farm promotional activities have been used to analyze cash flows, cost-benefit (C/B) ratios and net present values (NPV's) for individual farmers who adopt recommended NRM practices. These analyses show

quite acceptable NPV's and C/B ratios. From this, it was concluded that benefits aggregated to the watershed level reasonably may be expected to significantly exceed costs sufficiently to justify further testing and refinement activities proposed under CNRM, especially those aspects focussed on improving the organizational and motivational aspects of the delivery system for adoption of improved NRM technology at accelerated rates.

## 2. Least-cost Analysis of the Policy Improvement Component (PIC).

Although quantification of costs of direct project interventions proposed under this component can be estimated, it is virtually impossible to determine other inputs and contributions that make up total costs of the policy change process. Likewise, it is extremely difficult, and of questionable practical utility, to attempt to quantify such inputs (for example, cost of legislative time reviewing and holding hearings on a proposed legal policy change).

Likewise, it often is difficult or impossible to determine and quantify "downstream" benefits, and even less feasible to quantify cause-effect relationships of costs to those benefits. Further, benefits may be both direct and indirect and often are widely diffused throughout the economy. In many cases, benefits may reach beyond the borders of the country where the investment is being realized. Additionally, extensive market imperfections where natural resources are concerned result in serious valuation problems. There also are other important measurement distortions that tend to neutralize the reliability of cost estimates for cost-benefit analysis applied to activities that alter or "consume" natural resources. These measurement distortions are caused by the lag generally existing between environmental damage from present actions (i.e., major damages usually show up several years after actions that caused them; thus damage caused is strongly discounted in present value terms).

For the reasons stated in the previous paragraph, a decision was made to apply least-cost criteria rather than cost-benefit analysis to determine preferred implementation arrangements for testing and applying the policy improvement process defined in the technical and institutional analyses.

a. Implementation Alternatives Considered. Three alternatives were identified as possible implementation modes for testing the process intended to improve the current NRM policy framework. The alternative adopted calls for incorporating PIC into an on-going agricultural and natural resources policy improvement undertaking attached to the Office of the Minister of MAGA. This undertaking, known as PARAGRO, is technically managed by two of the most capable host country policy change specialists available. It has access to significant amounts of external short-term technical assistance from multi-lateral donors, and has had

two years of experience in accessing and supervising host country contracts to carry out policy-related analyses and dialogue activities. Additionally, under the HAD Project, USAID/Guatemala has had nearly two years of satisfactory experience in working closely with this policy change activity.

Under the adopted alternative, PIC will be implemented as an autonomous program with a small core of long-term host-country technical staff contracted with project funds to manage the technical and analytical elements of the policy improvement process during the LOP. Additional specific human resource capabilities will be detailed or contracted from public or private host-country or external sources, when and as needed. In this manner, PIC will benefit from association with and the experience base of existing on-going policy change activities, and can share existing facilities and management oversight capacity.

Except for the small core technical management team, no personnel commitments will be made beyond the particular task or undertaking defined at the time and for the period of the contract or detail. Additionally, and consistent with the pilot nature of this project, no resources will be dedicated to improving institution-building per se. Rather, best available host-country professionals will be contracted when and as needed, with external technical assistance being limited strictly to that required to solve well-targeted experiential, methodological and/or analytical problems. Likewise, training will be targeted to gaps in the national manpower base, not gaps in the staffing pattern and staff capabilities of a particular institution. Of course, the resulting trained manpower base and operating system developed and tested will be valuable assets to an institutionalized policy improvement undertaking if and when this step is taken by the GOG.

The primary alternative mode proposed was to lodge implementation responsibilities with one or more of the public sector institutions identified in the institutional analysis as having major legal responsibilities in NRM policy improvement (e.g., USPADA and/or CONAMA). In other words, implementation would depend on selected public sector institutional initiatives. Under this alternative, the installed or in-house capacity of the selected public sector institution(s) would be upgraded sufficiently to carry out activities planned under PIC. In this sense, the component necessarily would have a major institution-building objective. Such an approach would require training of existing personnel, or bringing in qualified personnel to either carry out proposed activities in-house or to supervise implementation of these activities on a contract basis.

A third alternative postulated was to contract overall technical management and implementation of PIC with one or more private sector host country institutions identified as having significant demonstrated capabilities in this type of undertaking. This

alternative was rejected by the institutional analysis as being inappropriate for reasons discussed in that analysis. Thus, this third alternative is not included in the least-cost analysis reported in the following section.

b. Input Requirements for Selected Alternative. The manpower assessment discussed in the Technical Analysis estimated level-of-effort for trained manpower input requirements under the selected alternative for technical management and implementation of PIC. These estimates are as follows:

- Host Country Professionals in NRM.

1. Two Technical Supervisors (full-time LOP)
  2. Five Technical Specialists (full-time LOP)
  3. Two Junior Specialists (full-time LOP)
  4. 180 P/M (10 P/Y) Short-term Studies Specialists for LOP
  5. Two Liaison Persons - CONAMA & MAGA (full-time LOP)
- TOTAL HC PROFESSIONALS                      54 P/Y LOP

- Expatriate Specialists (ES) in NRM.

1. Long-Term Administrative Manager (2.5 P/Y LOP)
1. Long-Term NRM Specialist (3.0 P/Y LOP)
2. 20 P/M Short-Term Specialists (1.7 P/Y LOP)

TOTAL ES PROFESSIONALS                      7.2 P/Y LOP

Additionally, estimates were made of other host country technical and administrative assistants (16 P/Y), support personnel (12 P/Y), and other implementation costs of the component, including both grant and counterpart costs. These costs were estimated at \$4,300,000 for USAID and GOG cash and in-kind inputs.

c. Input Requirements for Public Sector Institutions Alternative. Based on findings in the institutional analysis, two public sector institutions have major direct legal responsibilities for improving NRM policies, and would have been the designated institutions for the "public sector alternative mode" of implementation. These are CONAMA and MAGA/USPADA. These two institutions currently have virtually no in-house trained manpower base for implementing PIC. Nor do they have any experience base with a technical approach to policy improvement analysis, formulation and dialogue upon which to build. Furthermore, as pointed out in the institutional analysis, it is quite cumbersome for public sector institutions to contract technical expertise on an as-needed basis. As a practical matter, they must hire anticipated expertise on a long-term basis. One also must take into account that the public sector pays lower salaries than other sectors of the economy as well as the weak incentive and motivational structures are important negative features to

optimizing manpower productivity. This translates into a reduction of manpower productivity by an estimated fifty percent. To off-set this, it is necessary to increase manpower levels in this alternative, as compared to the selected alternative, to keep output at an equivalent level.

A two person panel of Guatemalan senior professionals was asked to estimate personnel requirements for generating the same outputs under the "public institution" implementation alternative as those budgeted for the selected alternative. These professionals had extensive experience in the GOG public and private sectors, and had specialized for several years in policy improvement activities. Their estimates based on MAGA salary scales, fully burdened personnel costs and operating costs are summarized below. Details are provided in Table E-1.

Host-Country Professional and Administrative Management Personnel (Public Institution Model).

Senior Administrative	18 P/Y LOP
Junior Administrative	18 P/Y LOP
Senior Technical	48 P/Y LOP
Junior Technical	16 P/Y LOP
Liaison	4 P/Y LOP
<b>TOTAL HC</b>	<b>104 P/Y LOP</b>

Technical Assistance Expatriate Professionals (ES)

Administration Management Advisor	2.5 P/Y LOP
Senior Policy Advisor	3.0 P/Y LOP
Institutional Advisor	4.0 P/Y LOP
Information Dissemination Advisor	4.0 P/Y LOP
Short-Term Specialists	3.3 P/Y LOP
<b>TOTAL ES</b>	<b>16.8 P/Y LOP</b>

Unit cost estimates for personnel in the public sector institution implementation alternative were reduced by the panel from those used in the selected alternative. This was done to reflect actual personnel costs in the public sector. However, costs used for other inputs into component implementation were increased over those used in the selected alternative, because of increased personnel levels required for achieving an equivalent level of outputs.

d. Results of Comparative Least-Cost Analysis. Table E-1 at the end of this Analysis provides estimates of manpower and other implementation cost for the two alternative models. The selected model is estimated to cost \$4,300,000, while the public sector model is estimated to cost \$5,724,900, a one-third higher cost. Furthermore, the expert panel concluded that quality of outputs,

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especially in terms of analytical soundness and objectivity, will be significantly higher with the least-cost model.

The implementation alternative selected is the least-cost alternative primarily for three reasons: 1) Human talent is paid for only when needed and for the type needed, 2) Policy change initiatives need not be undertaken just to keep staff occupied, and, 3) The entire national talent pool is accessed to fill technical specialties required. With in-house human capacity, the talents available are not as likely to fit the need.

### 3. Net Present Value (NPV) and Cost-Benefit (C/B) analyses for NRM improvement practises.

During implementation of the CARE activity under the HADS Project, data was collected that can be used to analyze costs and returns accruing at the farm level with systems incorporating improved natural resource management practices that incorporate agro-forestry elements into traditional cropping systems that only include the cultivated crops of the system. Three sets of these costs and returns data on a per hectare basis are shown in Tables E-2A, E-3A and E-4A. Tables E-2B, E-3B AND E-4B show results of analyses of this base data to determine net present value (NPV) and cost-benefit (C/B) ratios for the three improved systems compared with the traditional system, i.e., "with" and "without" the agro-forestry element. Only Table E-3B shows an internal rate of return (IRR) calculation for the "with" agro-forestry system.

Both in absolute terms and when compared with the traditional systems, NPV's and C/B ratios are quite favorable (using 20 year cash flow projections and a 10% discount rate). NPV's for agro-forestry systems ranged from Q13,576/hectare to Q17,564, with C/B ratios from 2.10 to 2.92, while those for traditional systems were Q4,862 to Q10,086 for NPV's and 1.58 to 2.48 for C/B. Differences between the "with" and "without" systems range from Q5,424 to Q8,911 for NPV's and from 0.27 to 1.58 for C/B ratios. The one agro-forestry system for which it was calculated shows an IRR of 56.8.

The analyses show substantial benefits accruing from the adopted NRM improvement practises. Although it is based on limited data, the results are consistent with analyses from other countries with similar highlands characteristics (e.g., Peru and Ecuador).

It is quite likely that the analyses under-state the differences in benefits from the with and without systems. The cost and returns data assumed the same levels of yields and inputs for the without system over time. However, such yield reductions and/or input increases definitely will result from soil and accompanying fertility losses over time. This in turn results in reduced yields or added costs for increased fertilizer to maintain yields. These soil and fertility losses are avoided under the agro-forestry

system.

Additionally, traditional systems often need two or more years of fallow every five years, or in lieu thereof, fertilizer increases of 10-20% annually, to maintain yields over time. It is estimated that these added costs, reduced yields and/or fallow periods without production would reduce NPV's and C/B ratios for traditional systems by as much as one-third. Thus, comparative net benefits of the "with" system would be even more favorable than those shown in the accompanying tables.

#### 4. Observations Related to Economic Benefits.

The analytical results suggest that financial returns to farmers from IWM interventions are quite favorable. To estimate economic benefits, a proportionate share of component implementation costs must be allocated to each hectare of land converted from the traditional to the agro-forestry production system. The component is projected to directly influence change from traditional to improved NRM compatible systems on a total of 39,500 hectares of farmland, and indirectly through demonstration effects among non-participating farmers, on another 10,500 hectares. Project inputs to this component are estimated at approximately \$7.5 million (including \$600,000 allocated from the M&E component).

Furthermore, the component will provide several off-farm benefits. For example, reforestation of rainfall catchments will result in increased fuelwood supplies and better water management for improved downstream rainfed yields and expanded irrigation opportunities. Likewise, soil erosion will be significantly reduced, both upstream and downstream, thereby promoting infiltration and reducing siltation and natural fertility loss. Many other tangible (but difficult to quantify) and intangible benefits also will result (e.g., availability of tested and refined local organizational and operational models which will permit more rapid and lower cost replications in the future).

It was assumed that off-farm benefits are attributable to 50% of component costs. The remaining \$3.45 million of component costs should be allocated as investment costs to be charged against hectares benefitted. Thus, the project level investment cost per hectare is \$69, which at 10% interest is an annual cost of \$6.90 (Q35.00). This is not a significant added cost when compared to the amount of additional net positive cash flows resulting from the shift to agro-forestry systems as compare to traditional systems.

The current data base for doing financial or economic analyses of NRM policy improvement activities is very limited in Guatemala. It is even less feasible to analyze economic impacts of policy changes (or the costs of not changing). In Guatemala, as in many countries, the policy framework and poor compliance enforcement result in gross undervaluation of natural resources. Accurate

valuation of resources is a prerequisite to formulation of policy instruments that reduce market failures and encourage economic decisions by stakeholders compatible with effective NRM. The M&E component of this project will make a valuable contribution by improving measurement of costs and benefits of NRM improvement interventions. For these reasons and those stated at the beginning of this analysis, no attempt was made to do a conventional Handbook 3 financial or economic analysis for the Policy Improvement Component. Utilizing planned data and information outputs and EOPS expected from the M&E component, it is quite likely that by the fourth year of project implementation, some preliminary economic analysis can be made of societal costs and benefits from specific policy changes.

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**CUADRO E-1: COMPARACION DE COSTOS ESTIMADOS PARA IMPLEMENTAR UN PROGRAMA DE MEJORAMIENTO DE POLITICAS DE MANEJO DE RECURSOS NATURALES RENOVABLES BAJO DOS MODELOS INSTITUCIONALES - CUATRO AÑOS EN US\$000'S -**

ITEM DE COSTO	MODELO PARASAG		MODELO INSTITUCION PUBLICA			
	COSTO UNITARIO	PERSONA/AÑOS	COSTO TOTAL	COSTO UNITARIO	PERSONA/AÑOS	COSTO TOTAL
<b>11. PERSONAL</b>						
<b>11A. NACIONAL</b>						
<b>11. ADMINISTRACION</b>						
a) Titulares						
1. Director	30	0	0	18.4	4	73.6
2. Jefe Administracion	30	0	0	18.25	4	73.0
3. Jefe Financiero	20	0	0	18.25	4	73.0
4. Jefe Contratos	20	0	0	18.25	4	73.0
5. Capacitacion	24	2	48	18.25	2	36.5
b) Asistentes						
1. Administracion	20	4	80	12.8	4	51.2
2. Financiero	20	4	80	12.8	4	51.2
3. Contratos	20	4	80	12.8	4	51.2
4. Capacitacion	24	2	48	12.8	2	25.6
c) Apoyo logistico						
1. Secretaria Bilingue	17	4	68	17	8	136.0
2. Otros	12	4	48	12	24	288.0
<b>12. TECNICOS PROFESIONALES</b>						
a) Jefe Tecnico	30	4	120	18.25	4	73.0
b) Especialista en Politica	24	4	96	14.25	4	57.4
c) Analistas Tecnicos						
1. Informacion/Dialogo	29	4	116	12.8	8	102.4
2. Legal	29	4	116	12.8	8	102.4
3. Economia	29	4	116	12.8	8	102.4
4. Social	29	4	116	12.8	8	102.4
5. Institucional				12.8	8	102.4
d) Consultores	24	12	288			
e) Personal de Apoyo Tecnico						

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1. Asistente Estadístico	20	4	80	10,800	10	108,000
2. Asistente Computos	20	4	80	10,800	8	108,000
3. Asistentes Estudiantiles	7	10	70	10,800	0	-
f) Supervisado Institucional						
1. CONAMA	20	4	80	10,800	4	51,200
2. MAGA/ESPADA	20	4	80		0	
<b>B. ASISTENCIA TECNICA EXTERNA</b>						
1. LARGO PLAZO						
a) Asesor Administracion	165	2.5	412	165	2.5	412
b) Asesor Politicas AR	170	2	340	170	2	340
c) Asesor Institucional	150	0	0	150	4	160
d) Asesor Informatica	150	2	0	150	4	160
2. CORTO PLAZO	243.5	2.5	414	243.5	2.5	394
SUB-TOTAL PERSONAL			2,100			
<b>III. OTROS COSTOS</b>						
IA. COSTOS DE OPERACION			400			500
IB. CAPACITACION Y ENTRENAMIENTO			450			600
IC. MATERIALES Y EQUIPOS			250			300
ID. MISCELANEO			100			150
<b>TOTAL</b>			4,200			5,724.9

Fuente: MAGA y Estimados de Un Panel de Expertos.

NOTA AL CUADRO E-1: PRODUCTOS ESPERADOS DE UN PROGRAMA DE CUATRO ANOS DE MEJORAMIENTO DE POLITICAS DE MANEJO DE RECURSOS NATURALES RENOVABLES

1. Un inventario detallado de: Problemas en el Manejo de Recursos Naturales Renovables (MRN) a nivel de cuenca/microcuenca.
2. Un inventario detallado de politicas que inciden en MRN a nivel de cuenca/microcuenca.
3. Elaboracion de una agenda de areas de politicas para análisis y acciones de mejoramiento priorizados en base de impactos potenciales en el MNK a nivel de cuencas/microcuencas.
4. Cinco grupos de estudios analiticos (seleccionados en base de la priorizacion de areas de politicas en la agenda) con las respectivas formulaciones de mejoramiento.
5. 25 eventos de diseminacion y dialogo (5 para cada area de estudios) destinados a lograr entendimiento y consenso para lograr su aprobacion y aplicacion efectiva.

CUADRO E-2A: COSTOS Y INGRESOS DE PRODUCCION POR HECTAREA SIN Y CON EL SISTEMA DE ARBOLES (MELIA AZEDERACH L.) EN CONTORNO-MAIZ-FRIJOL EN CHIQUIMULA.

Descripcion	Años	Unidad	Insumos No.	Costo unidad	Costo total	Productos			Ingreso total.
						Unidad	Cantidad	Precio unidad.	
<b>A. Cultivos.</b>									
1. Maiz.					558.8	Kgs.-Ha.	1340	0.55	737.0
mano de obra		Jrs.	50	6.8	337.5				
insumos									
semilla		Lbs.	16.5	2.5	41.3				
fertilizantes.		sacos	2.5	60.0	150.0				
insecticida		Lbs.	1	30.0	30.0				
					344.7	Kgs.-Ha.	350	2.60	910.0
2. Frijol									
mano de obra		Jrs.	20	6.0	120.0				
insumos.									
fertilizantes.		saco	0	60.0	0.0				
insecticidas.		Lts.	70	3.2	224.7				
fungicidas.			0	0.0	0.0				
hervicidas.									
Semilla		Lbs.	40	4.2	168.0				
<b>B. Arboles.</b>									
siembra					527.8				
mano de obra		Jrs.	15	6.8	101.3				
arbolitos.		U.	833	0.4	291.6				
cerca muerta		Jrs.	20	6.8	135.0				
mantenimiento.					138.0				
mano de obra.		Jrs.	16	6.8	108.0				
insecticidas		Lbs.	1.5	20.0	30.0				
cosecha arboles		Jrs.	40	6.8	270.0				
cosecha leña.		Jrs	20	6.8	136.0				
<b>C. Produccion de arboles.</b>									
						Tarea	12	50.00	600.0
						unidades	354	12.00	4248.0
Leña.						cada 4			
Tendales						años			
Postes									

FUENTE: Investigacion de campo catca02.mkl

CUADRO E-2B: FLUJO DE FONDOS, VALOR NETO ACTUAL Y RELACION BENEFICIO-COSTO CON Y SIN EL SISTEMA DE ARBOLES (MELIA AZEDERACH L.) EN CONTORNO-MAIZ-FRIJOLES EN CHIQUIMULA.

Años	Costos				Beneficio				Flujo de fondos	
	Maiz	Frijol	Arboles	Total	Maiz	Frijol	Arboles	Total	Sistema	Cultivos
1	758.75	344.7	665.8	1769.25	0	0	0	0	-1769.25	-1103.45
2	527.8	344.7	138	1010.5	737	910	0	1647	636.5	774.5
3	527.8	344.7	138	1010.5	737	910	0	1647	636.5	774.5
4	527.8	344.7	108	980.5	737	910	0	1647	666.5	774.5
5	527.8	344.7	544	1416.5	737	910	4248	5895	4478.5	774.5
6	527.8	344.7	544	1416.5	737	910	4248	5895	4478.5	774.5
7	527.8	344.7	274	1146.5	737	910	600	2247	1100.5	774.5
8	527.8	344.7	274	1146.5	737	910	600	2247	1100.5	774.5
9	527.8	344.7	274	1146.5	737	910	600	2247	1100.5	774.5
10	527.8	344.7	544	1416.5	737	910	4248	5895	4478.5	774.5
11	527.8	344.7	544	1416.5	737	910	4248	5895	4478.5	774.5
13	527.8	344.7	274	1146.5	737	910	600	2247	1100.5	774.5
12	527.8	344.7	274	1146.5	737	910	600	2247	1100.5	774.5
14	527.8	344.7	274	1146.5	737	910	600	2247	1100.5	774.5
15	527.8	344.7	544	1416.5	737	910	4248	5895	830.5	774.5
16	527.8	344.7	544	1416.5	737	910	4248	5895	4478.5	774.5
17	527.8	344.7	274	1146.5	737	910	600	2247	4748.5	774.5
18	527.8	344.7	274	1146.5	737	910	600	2247	1100.5	774.5
19	527.8	344.7	274	1146.5	737	910	600	2247	1100.5	774.5
20	527.8	344.7	544	1416.5	737	910	4248	5895	830.5	774.5

FUENTE: Investigación de campo catca02.wkl

	Total sistema	Solo cultivos.	Diferencia
Valor neto actual al 10 %	13575.99	4887.036	8688.954
Valor neto actual al 20 %	5983.927	2207.483	3776.445
Valor neto actual al 30 %	2936.078	1124.098	1812
Valor neto actual al 40 %	1486.777	593.0702	893.7068
Relacion beneficio costo ( 10% )	2.335831	1.639799	0.696033

CUADRO E-3A: COSTOS Y INGRESOS DE PRODUCCION POR HECTAREA SIN Y CON EL SISTEMA DE ARBOLES (EUCALYPTUS ROBUSTA) ASOCIADOS-FRIJOL EN JALAPA.

Descripcion	Años	Insuesos			Productos			Ingreso total.	
		Unidad	No.	Costo unidad	Costo total	Unidad	Cantidad		Precio unidad.
<b>A. Cultivos.</b>									
1. Maíz.								0.0	
mano de obra									
insuesos									
semilla									
fertilizantes.									
insecticida									
2. Frijol					958.2	Kgs.-Ha.	620	2.80	1736.0
mano de obra		Jrs.	85	7.5	637.5				
insuesos.									
fertilizantes.		saco	1.6	60.0	96.0				
insecticidas.		Lbs.	70	3.2	224.7				
fungicidas.			0	0.0	0.0				
herbicidas.									
Semilla		Lbs.	47	4.2	197.4				
<b>B. Arboles.</b>									
siembra					937.5				
mano de obra		Jrs.	20	7.5	150.0				
arbolitos.		U.	2250	0.4	787.5				
					0.0				
mantenimiento.					180.0				
mano de obra.		Jrs.	16	7.5	120.0				
insecticidas		Lbs.	3	20.0	60.0				
cosecha arboles		Jrs.	50	7.5	375.0				
cosecha leña.		Jrs	20	7.5	150.0				
<b>C. Produccion de arboles.</b>									
Leña.						Tarea	12	50.00	600.0
Tendales						unidades	478.125	6.00	2868.8
Postes						cada	4		
						año			

FUENTE: Investigacion de campo, sistema 6008.  
catca02.wkl

CUADRO E-3B: FLUJO DE FONDOS, VALOR NETO ACTUAL, RELACION BENEFICIO-COSTO Y TASA INTERNO DE RETORNO CON Y SIN EL SISTEMA DE ARBOLES (EUCALYPTUS ROBUSTA) ASOCIADOS-FRIJOL EN JALAPA.

Años	Costos			Total	Beneficio			Flujo de fondos Sistema Cultivos	
	Maiz	Frijol	Arboles		Maiz	Frijol	Arboles	Total	
									-2275.7 -1158.2
1		1158.2	1117.5	2275.7		0	0	0	597.8 777.8
2		958.2	180	1138.2		1736	0	1736	597.8 777.8
3		958.2	180	1138.2		1736	0	1736	657.8 777.8
4		958.2	120	1078.2		1736	0	1736	2941.55 777.8
5		958.2	705	1663.2		1736	2868.75	4604.75	2941.55 777.8
6		958.2	705	1663.2		1736	2868.75	4604.75	3316.55 777.8
7		958.2	330	1288.2		1736	2868.75	4604.75	3316.55 777.8
8		958.2	330	1288.2		1736	2868.75	4604.75	447.8 777.8
9		958.2	330	1288.2		1736	0	1736	2941.55 777.8
10		958.2	705	1663.2		1736	2868.75	4604.75	2941.55 777.8
11		958.2	705	1663.2		1736	2868.75	4604.75	3316.55 777.8
13		958.2	330	1288.2		1736	2868.75	4604.75	3316.55 777.8
12		958.2	330	1288.2		1736	0	1736	3316.55 777.8
14		958.2	330	1288.2		1736	2868.75	4604.75	72.8 777.8
15		958.2	705	1663.2		1736	2868.75	4604.75	2941.55 777.8
16		958.2	705	1663.2		1736	2868.75	4604.75	3316.55 777.8
17		958.2	330	1288.2		1736	2868.75	4604.75	3316.55 777.8
18		958.2	330	1288.2		1736	0	1736	3316.55 777.8
19		958.2	330	1288.2		1736	2868.75	4604.75	72.8 777.8
20		958.2	705	1663.2		1736	2868.75	4604.75	

FUENTE: Investigacion de campo catca02.uhl

	Total sistema	Solo cultivos.	Diferencia
Valor neto actual al 10 %	13773.31	4862.365	8910.941
Valor neto actual al 20 %	5491.049	2175.198	3315.851
Valor neto actual al 30 %	2336.89	1090.401	1246.489
Valor neto actual al 40 %	916.6901	559.8626	356.8275
Valor neto actual al 50 %	176.8105	244.843	
Valor neto actual al 60 %	-219.214	82.32014	0.515779
Relacion beneficio costo ( 10% )	2.098802	1.583023	
Tasa interna de retorno	56.84211		

CUADRO E-4A: COSTOS Y INGRESOS DE PRODUCCION POR HECTAREA CON Y SIN EL SISTEMA DE ARBOLES (ALNUS ACUMINATA) EN CONTORNO-MAIZ-FRIJOL EN QUETZALTENANGO.

Descripcion	Años	Unidad	Insuaos		Productos			Ingreso total.	
			No.	Costo unidad	Costo total	Unidad	Cantidad		Precio unidad.
<b>A. Cultivos.</b>									
<b>1. Maiz.</b>									
mano de obra		Jrs.	90	6.8	607.5				
insuaos									
semilla		Lbs.	32	2.5	80.0				
fertilizantes.		sacos	5	65.0	325.0				
insecticida		Lts.	1.5	33.0	49.5				
<b>2. frijol</b>									
mano de obra		Jrs.	30	6.8	204.0				
insuaos.									
fertilizantes.		saco	0	0.0	0.0				
insecticidas.		Lbs.	15	5.0	75.0				
fungicidas.		Kgs.	2.5	40.6	101.5				
hervicidas.									
Semilla		Lbs.	35	5.0	175.0				
<b>B. Arboles.</b>									
siembra					319.5				
mano de obra		Jrs.	18	6.8	121.5				
arbolitos. a/		U.	396	0.5	198.0				
					0.0				
mantenimiento.					111.0				
mano de obra.		Jrs.	12	6.8	81.0				
insecticidas		Lbs.	1.5	20.0	30.0				
cosecha arboles		Jrs.	30	6.8	202.5				
cosecha leña.		Jrs	10	6.8	68.0				
<b>C. Produccion de</b>									
<b>arboles.</b>									
						Tarea	198	10.00	1980.0
						Tarea.	20	10.00	200.0
Leña. b/						T.M	19.8	50.00	990.0
leña c/									
broza. d/									

Notas: a) distancia de 8m entre fila y 3m entre planta. b/ corte al 4o. año obteniendo 1.0 carga por arbol.  
c/ podas anuales a partir del año 2o. d/ Aproximadamente 100 kilogramos por arbol al 3o. año.

FUENTE: Investigacion de campo, sistemas GA01, GA02  
catca05.wk1/Oct. 92

CUADRO E-4B: FLUJO DE FONDOS, VALOR NETO ACTUAL Y RELACION BENEFICIO-COSTO CON Y SIN EL SISTEMAS DE ARBOLES (ALNUS ACUMINATA) EN CONTORNO-MAIZ-FRIJOL EN QUETZALTENANGO.

Años	Costos				Beneficio				Flujo de fondos	
	Maiz	Frijol	Arboles	Total	Maiz	Frijol	Arboles	Total	Sistema	Cultivos
1	1262	380.5	430.5	2073	0	0	0	0	-2073	-1642.5
2+	319.5	380.5	111	811	1052.5	1170	0	2222.5	1411.5	1522.5
3	319.5	380.5	111	811	1052.5	1170	0	2222.5	1411.5	1522.5
4	319.5	380.5	81	781	1052.5	1170	200	2422.5	1641.5	1522.5
5	319.5	380.5	81	781	1052.5	1170	200	2422.5	1341	1522.5
6	319.5	380.5	381.5	1081.5	1052.5	1170	3170	5392.5	4311	1522.5
7	319.5	380.5	381.5	1081.5	1052.5	1170	3170	5392.5	4513.5	1522.5
8	319.5	380.5	179	879	1052.5	1170	3170	5392.5	1543.5	1522.5
9	319.5	380.5	179	879	1052.5	1170	200	2422.5	1543.5	1522.5
10	319.5	380.5	179	879	1052.5	1170	200	2422.5	1341	1522.5
11	319.5	380.5	179	879	1052.5	1170	200	2422.5	4311	1522.5
12	319.5	380.5	381.5	1081.5	1052.5	1170	3170	5392.5	4513.5	1522.5
13	319.5	380.5	381.5	1081.5	1052.5	1170	3170	5392.5	1543.5	1522.5
14	319.5	380.5	179	879	1052.5	1170	200	2422.5	1543.5	1522.5
15	319.5	380.5	179	879	1052.5	1170	200	2422.5	1341	1522.5
16	319.5	380.5	179	879	1052.5	1170	200	2422.5	1341	1522.5
17	319.5	380.5	381.5	1081.5	1052.5	1170	3170	5392.5	4513.5	1522.5
18	319.5	380.5	381.5	1081.5	1052.5	1170	3170	5392.5	4513.5	1522.5
19	319.5	380.5	179	879	1052.5	1170	200	2422.5	4513.5	1522.5
20	319.5	380.5	179	879	1052.5	1170	200	2422.5	1543.5	1522.5
20	319.5	380.5	381.5	1081.5	1052.5	1170	200	2422.5	1341	1522.5

FUENTE: Investigacion de campo catca02.wkl

	Total sistema	Solo cultivos.	Diferencia
Valor neto actual al 10 %	15509.29	10085.98	5423.713
Valor neto actual al 20 %	6948.433	4778.13	2170.303
Valor neto actual al 30 %	3546.061	2614.725	931.336
Valor neto actual al 40 %	1922.593	1541.873	380.7205
Relacion beneficio costo ( 10% )	2.753978	2.479576	0.274401

**COMMUNITY NATURAL RESOURCE MANAGEMENT**

**PROJECT PAPER  
(520-0404)**

**ANNEX V**

**SOCIAL ANALYSIS**

**Office of Rural Development  
July 2, 1993**

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## ANNEX 5: SOCIAL ANALYSIS

### MEN, WOMEN, AND LOCAL INSTITUTIONS IN COMMUNITY NATURAL RESOURCES MANAGEMENT

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## **SUMMARY OF ANALYSIS**

If the constraints reflected by the Recommendations are recognized and acted upon in Project design and implementation, the impact on local beneficiaries -- women and men -- and their community institutions can be a positive one.

Socioeconomic benefits will include increased income opportunities for both women and men; more productive on-farm employment, reducing the need for off-farm wage labor and/or seasonal migration; and improved health, particularly in the area of pesticide use. In addition, the strengthening of community organizations will result in local-level social institutions which will assist the process of democratic development.

## **SUMMARY OF RECOMMENDATIONS**

If sufficient resources are available, the following recommendations would yield significant benefits:

### **SOCIAL SCIENCE INPUTS**

- ★ Carry out a Special Study of *Natural Resource Roles and Responsibilities of Men, Women, and Community Organizations in the Project Area.*
- ★ A Social Scientist familiar with rural Guatemala, including issues of community institutions and gender, should be a part of the Guatemalan team assessing NRM policy during the first six months.
- ★ A Social Scientist, familiar with rural Guatemala, including issues of community institutions and gender, should be a part of the Policy Technical Advisory Committee.
- ★ Include a Social Scientist in the Monitoring & Evaluation Component of the Project.

### **BENEFICIARY PARTICIPATION**

- ★ CNRM should be planned around human needs, as well as environmental needs, so that it is in the best interests of local men and women as well as the natural resource base. These plans should be based on socioeconomic knowledge.

Men and women at the household level must be included as stakeholders in design and implementation processes.

- ★ Community-level institutions must be included as stakeholders in design and implementation processes.

**Project goals must include creating additional or alternative income sources for both women and men.**

## **GENDER**

- ★ **All human resource data, from the local level up, should be disaggregated by gender. When appropriate, it should also be disaggregated by ethnicity.**
- ★ **Gender issues should be integrated into technical training; for example, in workshops on social forestry or sustainable agriculture.**
- ★ **To the extent personnel can be identified and are available; the gender ratio of IWMC staff, from coordinators through promoters, should reflect the gender ratio of the beneficiary population, i.e., 50 percent women.**
- ★ **CARE and DIGEBOS should provide training in gender analysis at the household and community level to its staff, from coordinators through promoters.**

### **1. MEN AND WOMEN IN THE HOUSEHOLD**

- ★ **Women, as well as men, should be included in training and technical assistance in agriculture and forestry. It should not be limited to their "domestic" roles or special micro-enterprise projects.**

### **2. COMMUNITY INSTITUTIONS**

- ★ **The strengthening of local organizations through technical assistance and training should be a primary Project goal.**
- ★ **The Institutional Specialist of PARAGRO's *Consultoría sobre el manejo integral de los recursos naturales renovables* is responsible for an analysis of public and private institutions working with natural resource issues, including local organizations. It is strongly recommended that this study pay particular attention to the following "endogamous" and "exogamous" community institutions: Indigenous Communities (*cofradías*, etc.), Local Development Committees, and Local NGOs.**

### **3. USAID/ODDT SURVEY OF LOCAL PARTICIPATION**

- ★ **The results of this work should be examined by CNRM implementers to help shape both the IWMC and, particularly, the Policy components.**

#### **4. MUNICIPALITIES AND REGIONAL DEVELOPMENT COUNCILS**

- ★ **The PARAGRO Institutional Specialist should examine the viability for community-based institutions to work with Municipalities and Regional GOG Development Councils.**

#### **5. ALUMNI OF GUATEMALAN PEACE SCHOLARSHIPS**

- ★ **CARE and the Policy implementor should contact local alumni of the GPS Community Leadership Program and work with them in the development of community-level institutions.**
- ★ **CNRM should coordinate its work with local GPS alumni from such programs as Natural Resource Management and Integrated Pest Management.**

#### **6. LINKING INSTITUTION: ASOCIACIÓN NACIONAL DE AGROFORESTERIA.**

- ★ **As the IWMC implementor, CARE should become a member of the Association, both to contribute to its maturation and to use it as a networking source for local-level NGOs.**
- ★ **The Policy implementor should also establish links with the Association, investigating ways of using it as a network for information flow up and down the system.**

#### **7. USAID STRATEGIC OBJECTIVES**

- ★ **CNRM presents the opportunity to integrate the strategic objective of Natural Resource Management with the other strategic objectives of Democratic Development and Population, issues which substantially impact upon community participation and environmental degradation. This integration should be carried out wherever possible.**

#### **8. CARE AND DIGEBOS**

- ★ **It is strongly recommended that CARE and DIGEBOS technical and field staff participate in gender training on working with rural women and men in agroforestry and as co-participants in community management.**

**It may be useful for CARE and DIGEBOS to participate in training with an institution that has had a high degree of success in community participation, such as Aldea Global in Honduras.**

- ★ **It is strongly recommended that CARE and DIGEBOS technical and field staff reflect the gender ratio of its clients in the Project, i.e., 50 percent female; to the extent appropriate candidates can be identified and are available.**

## **A. INTRODUCTION TO SOCIAL ANALYSIS**

Attacking the environmental problems of Guatemala means involving people: if people are part of the problem, they are also part of the solution. And people are male and female; Spanish-, K'iche'-, and Mam-speaking; rich and poor; rural and urban. In this Project -- because of its focus on **community natural resource management (CNRM)** and on **natural resource management (NRM) policy from local through municipal and national levels** -- people are particularly important.

This Analysis examines social-cultural issues which influence the opportunities for and constraints against participation of people in the Project, both in the Integrated Watershed Management as well as in the Policy components. It also explores the benefits that will accrue to participant individuals and institutions and the equitable distribution of these benefits.

### **1. PROJECT GOALS AND PURPOSES**

The Analysis' emphasis on local people and institutions is based on the Mission objective of supporting improved natural resource management by "creating and applying incentives for **local community management of natural resources.**"

### **2. SOCIAL INSTITUTIONS EXAMINED**

In order to "create and apply incentives for local community management," it is first necessary to understand:

- **What are the natural resource roles and responsibilities of local men and women?**
- **What are the community-based and other local institutions of which they are a part or which represent them to the larger world?**
- **What are the constraints against and opportunities for the participation of these men and women and their institutions in the development of community-based management systems?**

To begin to address these questions, the Analysis examines four levels of Guatemalan institutions, starting from the ground up. They are:

- a. **Households: Men and Women**

- b. "Endogamous" and "Exogamous" Community Institutions
- c. Local Governmental Institutions: Caseríos, Aldeas, and Municipalities
- d. Linking Institutions: *Asociación Nacional de Agroforesteria*

In Section G, it briefly examines the implementing institutions of IWMC: USAID/Guatemala, CARE, DIGEBOS, and Peace Corps.

In addition, the issues of beneficiary participation, including gender and ethnicity, cross-cut each level.

### 3. METHODOLOGY

To carry out the Scope of Work of the Social Scientist, the following methodologies were used:

- a. Interviews with personnel of USAID/Guatemala, CARE, and Peace Corps, as well as other development specialists, about socio-cultural issues in natural resource management in general and in the project area in particular. Particular attention was given to the agricultural and forestry roles of men and women. (See "List of Persons Contacted.")
- b. Collection and review of materials, published and unpublished, on natural resource activities of households, communities, and the institutions which represent them. (See "References Examined.")
- c. Field trip to watersheds in Department of Chimaltenango.

### B. SOCIAL SCIENCE INPUT

The social science input for CNRM has been very thin: there are more data on tree species and soil types than on the local men and women and their institutions which are the make-or-break variables of the Project.

The primary data bases for CNRM are the evaluations of HADs II and III and the Watershed Management Plans of CARE (*Plan de manejo de microcuenca*). However, several problems exist with this information:

- The informants for both the HADs and the CARE surveys were overwhelmingly male. This means that only 50% of the local population was considered.
- The HADs socioeconomic evaluations are huge data sets -- which include household- and community-level data -- but they are currently in SPSS, a software system which neither the local HADs project nor USAID/Guatemala has the capability of using (E. Nesman, personal communication).

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- The CARE information is very general. In other words, it gives only a surface hint of what is really going on with local people.

If the Mission is to accomplish its objective of supporting improved natural resource management by "creating and applying incentives for local community management of natural resources," it is first necessary to know the local patterns of natural resource management by both men and women and the attitudes and behaviors connected with those activities. In addition, if this is truly to be a community natural resource management project, much more needs to be known about community institutions with which local management projects can be organized.

Consequently, several recommendations are made concerning social science inputs to CNRM components. They are:

#### **RECOMMENDATIONS:**

#### **SPECIAL STUDY**

- ★ **If funds are available, carry out a Special Study of Natural Resource Roles and Responsibilities of Men, Women, and Community Organizations in the Project Area. (See Section F for details.)**

#### **IWMC**

- ★ **If funds are available, include a Social Scientist in the IWMC team managed by CARE. (See Section G for more detail.)**

#### **POLICY**

- ★ **A Social Scientist familiar with rural Guatemala, including issues of community institutions and gender, would be useful part of the Guatemalan team assessing NRM policy during the first six months, if funds are available. (See the Policy Assessment section.)**
- ★ **A Social Scientist, familiar with rural Guatemala, including issues of community institutions and gender, would be a desirable addition to the Policy Technical Advisory Committee, if funds are available. (See the Policy Analysis section.)**

#### **MONITORING & EVALUATION**

- ★ **Including a Social Scientist in the Monitoring & Evaluation Component of the Project would be beneficial if funds are available. (See Section H for more detail.)**

The results will help ensure that:

- . all appropriate local stakeholders are included in the IWMC, Policy, and M&E components;
- . the essential issues of beneficiary participation, including women's, and of community-based management are kept up front in all Project components as an interactive and iterative process, not addressed after the fact in project evaluation; and
- . implementation decisions are based on accurate facts, not on suppositions or stereotypes.

### **C. CROSS-CUTTING ISSUES: BENEFICIARY PARTICIPATION AND GENDER**

Two issues cut across all institutional levels: (1) the participation of the beneficiary institution -- household, community organization, or other local organization -- in project planning and implementation and (2) the participation of women, as well as men, in these institutions.

#### **1. BENEFICIARY PARTICIPATION IN PLANNING AND IMPLEMENTATION**

##### **a. Introduction**

A primary objective of current USAID projects is institutional sustainability. In other words, can a project wean itself from the donor organization and survive? What will be left behind?

This entails project capability in male and female leaders, community support, management and planning, and finances. Experience has shown that these capacities need to be built from the bottom-up, which means including local women and men in problem diagnosis, planning and implementation and technical and administrative training. Information also indicates that unless local residents see a project as in their best interests, participation is not forthcoming. In turn, it is local residents who -- with appropriate assistance -- can best identify their needs.

As a Central American NGO summarizes,

The failure of many development programs has been induced by the lack of adequately trained local leadership. We have often seen that without proper training [and inclusion] of the community and its leaders, programs tend to deteriorate and disintegrate once the agency has left the area.

... it has become exceedingly clear that development is truly a long term commitment where tangible change in people's lives and their living environment comes slowly, and endures only when the process is owned, understood and managed by local people.

(We) believe that development efforts need to be carried out ... where people can develop and participate in programs, making use of their own talent and resources to meet their expressed needs and improve their well being.<sup>1</sup>

It is also crucial to plan projects around human needs as well as environmental needs so that projects are seen by local residents as being in their best interest. Including local women and men and their institutions as equal stakeholders helps guarantee this. Community organizations should also be a development objective, whose needs are a part of implementation, monitoring and evaluation. In addition, Project goals must include the creation of additional or alternative income sources for both men and women.

Many development organizations give lip service to participation but fewer put it into practice. The major implementors of the Integrated Watershed Management Component (IWMC) of this Project -- CARE, DIGEBOS, and Peace Corps -- have different track records vis-á-vis beneficiary participation. These are outlined in Section G.

#### **RECOMMENDATION:**

- ★ **Men and women at the household level must be included as stakeholders in design and implementation processes.**
- ★ **Community-level institutions must be included as stakeholders in design and implementation processes.**
- ★ **CNRM should be planned around human needs, as well as environmental needs, so that it is in the best interests of local men and women as well as the natural resource base. These plans should be based on socioeconomic knowledge.**
- ★ **Project goals must include creating additional or alternative income sources for both women and men.**

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<sup>1</sup> Proyecto Aldea Global. *Reporte Anual, 1990-1991*. Tegucigalpa, Honduras: Project Global Village, 1991, p. 1.

## 2. GENDER DIFFERENCES, GENDER ANALYSIS, AND DATA DISAGGREGATION

### a. Gender Differences

Taking gender differences into account is another aspect of beneficiary participation. It ensures that both women and men in the community benefit from a project and that the natural resource responsibilities and knowledge bases of both sexes are given equal consideration in project design, implementation, and follow-up.

Agriculture and natural resource project planners are generally more familiar with men's lives than women's and, in turn, subconsciously model projects on men's roles. Local women are seldom consulted or invited to participate in project planning, implementation, or follow-up. However, the success of people-oriented projects depends upon the involvement of both women and men.

Urban residents in Guatemala -- female and male -- stereotype rural women as passive, non-participatory, having only minor roles in agriculture, and being victims of a *pais machista*. Although the stereotype is based on data that are no more factual than personal anecdote and supposition, it appears that it is considered as "fact" by many professionals and that entire programs and projects have been built upon the suppositions.

The "facts" appear to be:

- The knowledge base about the natural resource roles and responsibilities of rural women and men in Guatemala is very thin. However, existing data contradict the stereotype described above and indicate that women, as well as men, have important household and community roles in agriculture and forestry. (See Section F on Household Roles.)
- The stereotype of women as victims of a *pais machista* may be somewhat true of the urban professional-class, but the further a household is from this cultural model -- in terms of both geography and social class -- the less it is true.
- What this means for CNRM is that since both women and men have agricultural and forestry responsibilities, both should be included in agricultural and forestry training and technical assistance.

### b. Gender Analysis

In most agriculture and natural resource projects, "the household" is taken as the bottom-line unit of analysis; males are assumed to be heads-of-households and, thus, the principal decision makers and sources of information. In Guatemala, the person who represents the household in the public sector is often male. Consequently, the roles of

other household members are frequently ignored, and the assumption is made that household decisions are made unilaterally by men.

This assumption is detrimental to the project and to those it is meant to serve. In every society, women and men have different roles, have access to different resources and benefits, and have different responsibilities. It is that diversity in division of labor and decision-making that gender analysis addresses.<sup>2</sup>

Gender analysis -- looking at the roles of both men and women and determining where they overlap, where they are separate, and how to plan a project around these differences -- is a tool which gives us a better understanding of socioeconomic and technical factors. Gender is a socioeconomic variable that distinguishes roles, responsibilities, constraints, and opportunities of the people involved in the development effort. It considers both men and women and thus should not be confused as being an equity issue.

In the past, development activities for women have focused on women's reproductive, health care, and nurturing roles. While women will always have these roles, they are concurrent with their roles as agricultural producers and natural resource managers. Project activities must take into account the multiple responsibilities of women, their farming and forestry roles as well as their "domestic" roles.<sup>3</sup>

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<sup>2</sup> In addition, in many rural areas the number of female-headed households has increased, partly as a result of political violence. These households, which are generally poorer than their neighbors, must be taken into account in project planning. (In some areas, *Comites de Viudas* [Widows' Committees] have been organized, which are active social change institutions.)

<sup>3</sup> Women's agricultural and natural resource roles are also ignored because they generally represent unpaid labor. For example, in national census statistics, the data show the majority of rural men as "farmers," while the majority of rural women are "housewives." Yet, on-the-ground data show that women's labor is directed almost as much to agricultural activities as to domestic activities.

A new study by USAID/Bolivia is one of the first rural surveys to collect equal information on occupation and economic activity of male and female household members and to break down activities by primary and secondary activities. This methodology gives a much clearer picture of what actually happens in rural households. For example, in addition to being "housewives," women represent 75% of people engaged in animal husbandry as their primary activity and 60% of people engaged in agriculture as their secondary activity (Caro, et al. 1992). USAID/Ecuador will be carrying out a similar survey in 1993.

*A caveat:* Having a woman as the head of an institution or project does not necessarily mean that gender issues will be automatically included. Consequently, gender must be built into project criteria.<sup>4</sup>

c. **Data Disaggregation: Gender and Ethnicity**

*The carrot:* Good project data -- and their sensible use -- can give useful feedback for rectifying design or implementation errors. In CNRM, women are as important as men as users and abusers of the environment. Consequently, in order to understand the differences in impact and participation between male and female beneficiaries, it is essential to disaggregate all human resource information by gender from the beginning, including project personnel at local, regional, and national levels.

*The stick:* Gender-disaggregated data is a reporting requirement of AID and other major donors.

In addition, ethnic diversity is another essential variable of CNRM. The "Indigenous" are as important as *Ladinos*<sup>5</sup> as users and abusers of the natural resource base; however, their participation in the Project may be different than that of *Ladinos*. Consequently, data should be disaggregated by ethnicity wherever appropriate. "Ethnicity" should be also based on self-identification rather than on an externally-determined measure such as language.

**RECOMMENDATIONS:**

- ★ **All human resource data, from the local level up, should be disaggregated by gender. When appropriate, it should also be disaggregated by ethnicity.**
- ★ **Gender issues should be integrated into technical training; for example, in workshops on social forestry or sustainable agriculture.**

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<sup>4</sup> However, having women as a part of the professional staff, from regional coordinators to local *promotores*, can be a major factor in encouraging the participation of women. (See Section G.)

<sup>5</sup> "Indigenous" is used here to mean men and women who identify as "Indian," a category characterized by forms of community organization, women's dress, and -- to some degree -- language. However, the most important variable is self-identification.

"Ladino" is the term used in Guatemala for rural residents who are not Indian. *Mestizo* is a comparable category in other countries.

- ★ The gender ratio of IWMC staff, from coordinators through promoters, should reflect the gender ratio of the beneficiary population, i.e., 50 percent women, if appropriate candidates can be identified and are available. (See Section G.)
- ★ CARE and DIGEBOS should provide training in gender analysis at the household and community level to its staff, from coordinators through promoters. (See Section G.)

#### **D. BENEFICIARY INSTITUTIONS OF CNRM**

##### **1. HOUSEHOLDS: LOCAL MEN AND WOMEN**

###### **a. Introduction**

There can be no environmental solution in Guatemala that does not give key consideration to the participation of the men and women living in project areas. Because the success of CNRM will be determined in large part by the changed attitudes and activities of local people, it is essential to identify these men and women and to learn about their natural resource roles through interviews, surveys, and case studies in order to have a basis for planning and implementation.

The following gives a brief summary of the natural resource activities of households in the project areas. Because the roles of men have been identified in many documents, an emphasis is given to the division of labor and decision-making between men and women.

In the initial stages of CNRM, this information should be expanded upon in a Special Study so that there is an accurate data base to use in planning project activities and monitoring and evaluation systems.

###### **b. Demographic Profile**

Attachment I shows the variety of communities and ecological zones covered by the ongoing CARE/DIGEBOS watershed component of the HAD Project, from the pine and oak forests of the Central and Western Highlands -- inhabited primarily by Mayan-speaking Indigenous -- to the more arid hill regions of the Eastern regions -- whose residents are Spanish-speaking *Ladinos*.

Regardless of ethnic and ecological diversity, the entire project area is characterized by economic poverty, low educational levels, and environmental degradation. Consequently, the primary beneficiaries of the IWMC are defined as "poor farmers who survive by subsistence farming on marginal sites" (CARE 1993, p.4).

c. Households in the Western Highlands: Division of Labor and Decision-Making

As discussed in Section E, a stereotype exists that rural Guatemalans "have very traditional beliefs regarding the roles of women and men in forestry and agriculture [and that, consequently,] the role of women in agriculture and forestry has traditionally been limited" (CARE 1993, p. 18). Data on Highland households, and particularly on household roles in changing agricultural systems, suggest otherwise. The following highlights some of these findings.

■ In "traditional" households -- those whose economic base is *milpa* and migration -- women have important roles in agricultural production, work which neither the census nor many extensionists acknowledge.

■ The more the household economy is dependent upon a new or changing economic base -- for example, agroforestry or NTAE -- the more flexible and less sexually segregated are household roles and the higher is women's participation in the new activity.

In T'oj Nam, a traditional Northwest Highland village of Mam speakers, women help with the harvesting and gleaning of maize (a pre-Conquest crop), but they do not take part in its planting or cultivation. However, it is common for women to perform substantial heavy labor in planting potatoes (a post-Conquest crop). And both men and women migrate to the coast (a relatively new economic activity), where both work in the fields. (Bossen 1984, 59-60)

Small farms in the Western Highlands which move into NTAE production show an increase in women's agricultural labor from 9% in corn and 25% in traditional vegetables to 31% in snow pea production. (Children's labor accounts for 6% in corn, 14% in traditional vegetables, and 10% in snow peas.) (See Attachment II, von Braun, et al. 1989, 50)

A study of 318 rural households in the Central Highlands indicates that household decision-making about finances follows the "separate purse strings" model of many other Latin American areas. Depending upon the item, women may pay for and buy it, or men may pay for and buy it, or there may be shared decision-making. For example, women pay for and buy 36% of animals; men, 23%; jointly, 18%. On the other hand, men pay for and buy 83% of agricultural equipment; women, 1%; jointly, 5%. (See Attachment III, Katz 1992, 19-20.)

A 1993 Peace Corps workshop on bare-root reforestation techniques -- a non-traditional activity -- attracted more than 70 women in a rural area of Quetzaltenango.

d. Households in the Eastern Regions

If information on the natural resource activities of Highland households is scarce, it is almost non-existent for households in the *Oriente*. However, information from both CARE and the Peace Corps illustrates that women as well as men participate in natural resource and agricultural projects when they are in their economic interest. In addition, a recent study in the *Oriente* shows that although women are less involved in agricultural production than in the Highlands, they are very involved in the marketing of crops and in agricultural wage labor. In fact, in the tobacco plantations, women's wage rate is the same as men's (Bergeron 1993).

**RECOMMENDATIONS:**

- ★ **Women, as well as men, should be included in training and technical assistance in agriculture and forestry. Inputs should not be limited to "domestic" roles or special micro-enterprise projects.**
- ★ **Because so little is known about the natural resource roles and responsibilities of men and women and their links to the community, a Special Study on *Households, Community, and Natural Resource Management* should be carried out by USAID, if funds are available. It should identify and analyze individual, household, and community motivational and decision-making factors, including the domestic economy and the range of economic options that individuals perceive.**

**It should also investigate the relationships between households and community organizations, and the roles of men and women in these linkages.**

2. "ENDOGENOUS" AND "EXOGENOUS" COMMUNITY INSTITUTIONS

Just as little is known about how local households work, little is known about how local organizations work. The political violence of the last decade has destroyed many "endogenous" (internally developed) and "exogenous" (externally developed) community organizations and made many community members very "closed" and leery of taking on the role of community leader, particularly in the Highlands. Nevertheless, community-level

institutions do exist, though weak and in need of nurturing.<sup>6</sup> Regional and other networking institutions, such as federations, are much rarer.

However, most community institutions are sectorized toward a specific task, such as *Comité de Agua* (Water Committee) or *Comité de Escuela*, (School Committee) in the same way that the national government is sectorized. For natural resource issues, this is significant since NRM cuts across a number of sectors.

The following briefly describes "endogamous" and "exogamous" community institutions. ASIES has produced an excellent overview of Guatemalan social organization -- including local-level institutions<sup>7</sup> -- but much more information is needed in order to link successfully the concept of community resource management and community policy input.

Therefore, it is recommended that the Institutional Specialist of PARAGRO's *Consultoría sobre el manejo integral de los recursos naturales renovables* investigate in more detail the opportunities and constraints for the participation of these institutions in the Project. This work should be included in the Special Study.

a. Indigenous Communities, *Cofradías*, and *Comuniles*

Most endogamous institutions are pre-conquest in origin, although beginning in this century, the government moved to replace them with "exogamous" structures such as cooperatives and agricultural unions. Very little is known about the contemporary functions of endogamous institutions such as *cofradías*. However, this information is exceptionally important since, in many instances in the Highlands, it is the community itself -- through institutions such as the *cofradía* -- that manages the communally-owned natural resources. Consequently, these organizations are at the heart of developing community-based management systems.

b. Cooperatives

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<sup>6</sup> Some interviewees commented that although the violence destroyed many traditional community-level organizations, such as *cofradías*, new institutions are emerging which are more sophisticated about community organizing and national issues.

This presents new opportunities for linking community organizations with regional and national activities.

<sup>7</sup> ASIES (Asociación de Investigación y Estudios Sociales). *Organización social: notas sobre el pasado y lineamientos para el futuro*. Guatemala, nd.

Approximately 135,000 farmers of small and medium-sized plots reportedly belong to cooperatives. Regardless, 60 percent of these coops are inactive because of problems of debt, scarcity of credit, corruption, or political violence (GOG, 1992:10).

c. Local Development Committees

Almost every community has at least one kind of development committee, some authorized by the local Municipality, but few receive any formal support for their maintenance. Generally, they are organized around a specific purpose, such as construction of a school, road, or mini-irrigation system. Though one of the most common forms of community organization in the country, despite the lack of external support, very little information exists about their organization and function (GOG, 1992:12).

d. Non-governmental Organizations (NGOs)

NGOs are essential to both the IWMC and Policy components of this Project. Because of the time constraints on the Social Analysis, a detailed study of local-level and national NGOs was not possible. However, an important part of the work of the Institutional Specialist of PARAGRO's *Consultoría sobre el manejo integral de los recursos naturales renovables* is an analysis of public and private institutions, including NGOs, which work in the area of natural resource use and policy. Consequently, it is strongly recommended that this work be carried out as contracted and the results be made an integral part of CNRM design and implementation.

Meanwhile, the following information sources and institutions can serve as a preliminary data base:

▪ FONAPAZ: NGO Analysis, 1992 <sup>8</sup>

In 1992, FONAPAZ (*Fondo Nacional para la Paz*) conducted an analysis of NGOs working in nine departments of the country, as well as those working at a national level. In this, NGOs were evaluated according to administrative, financial, legal, "moral solvency," and impact criteria. The NGOs that passed the initial evaluation were then analyzed using interviews and observations. Finally, the institution was given a numerical ranking. The analysis is not only the most recent one of NGOs in the country, it also gives potential donors and/or collaborators useful information on which to base future work, including the

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<sup>8</sup> Fabián C., Edda. *Selección de organizaciones no gubernamentales - ONGs - Calificadas que puedan ejecutar proyectos conjuntamente con FONAPAZ*. Informe Final Consultoría. Guatemala, Proyecto SAFLAC, FONAPAZ (Fondo Nacional para la Paz)/UNICEF, November 20, 1992. Also includes annex.

geographical and sectoral emphases of the NGO. The analysis is available from FONAPAZ or USAID/ODDT.

- FUNDESA: Directory of PVOs, 1989<sup>9</sup>

FUNDESA, the Guatemalan Development Foundation, published a directory of PVOs working at local and national levels. Although it has no analysis of institutional capacity, it does list PVOs/NGOs by type of service and geographical distribution.

#### RECOMMENDATIONS:

- ★ **The strengthening of local organizations through technical assistance and training should be a primary Project goal.**
- ★ **As stated in the Terms of Reference for the team, the Institutional Specialist of PARAGRO's *Consultoría sobre el manejo integral de los recursos naturales renovables* is responsible for an analysis of public and private institutions working with natural resource issues, including local organizations.**

**It is strongly recommended that this study pay particular attention to the "endogamous" and "exogamous" community institutions reviewed above:**

- **Indigenous Communities (cofradías, etc.)**
- **Local Development Committees**
- **Local NGOs**

- ★ **This work should be one of the bases for the Special Study on Households, Community, and Natural Resource Management described in Section F.**

#### e. Survey on Local Participation

USAID/ODDT is currently conducting a nation-wide opinion poll on attitudes toward democracy and local participation, including interviews in four Mayan languages. It also incorporates questions on natural resources. The data will be available June 30.

#### RECOMMENDATION:

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<sup>9</sup> FUNDESA (Guatemalan Development Foundation). *Directory of Private Voluntary Organizations Serving the Guatemalan Community*. Guatemala, 1989. Funded by USAID/Guatemala.

- ★ **It is strongly recommended that the results of this work be examined by CNRM implementers to help shape both the IWMC and, particularly, the Policy components.**

### 3. LOCAL GOVERNMENTAL INSTITUTIONS: CASERIOS, ALDEAS, AND MUNICIPALITIES

#### a. Municipalities vs. Caseríos and Aldeas

The majority of Project participants live in "unincorporated" rural hamlets (*caseríos*) and villages (*aldeas*), but their formal political link with the national government is through the Municipality (*Municipalidad*).

In examining the objective of "creating and applying incentives for local community management of natural resources," one possible institutional link for information and resource flow between local communities and the national level is the Municipality. However, research indicates that this is currently not the best option.

First, the Municipality is a highly personalistic system in which decisions are very dependent upon the *Alcalde* (Mayor), who answers primarily to urban residents, not to rural ones. Second, although most Municipalities are very aware of their forest resources, few -- if any -- have shown interest in investing any of their limited resources (including a part of the eight percent) in natural resources, or even potable water. Most investment has been in community infrastructure such as streets and buildings. The Peace Corps suggested to several Municipalities that they work together on agroforestry resources. It received no positive responses. (And, as of now, very few viveros [nurseries] given to Municipalities have survived.)

USAID/Guatemala's Office of Democratic Development and Training (ODDT) did a portfolio review of the issue of decentralization vs. municipal development and decided upon emphasizing decentralization, partly because of the economic "bottomless pit" represented by Municipalities. It also found that the Municipal level is not the appropriate one for decentralization of revenue generation because of the lack of infrastructure and the high opportunity for fraud. Consequently, it is following a policy of funding regional rather than capital-city or municipally-generated activities.

#### **RECOMMENDATION:**

- ★ **The Institutional Specialist of PARAGRO's *Consultoría sobre el manejo integral de los recursos naturales renovables* should examine the viability for community-based institutions to work with Municipalities and Regional GOG Development Councils. (At this stage, there may not be a structure and incentives for communities to work with these institutions.)**

b. **Another Option: Guatemalan Peace Scholarship Program / Community/Municipal Leadership Development**

USAID/Guatemala has been training male and female local leaders (from municipalities, aldeas, and caseríos) in community leadership development through the Guatemalan Peace Scholarship Program (GPS). <sup>10</sup>

Rather than spending scarce resources at this time on working through Municipalities, it may be more productive to work with the local leaders who have been trained through GPS. The Municipal residences of GPS alumni are given in Attachment I. <sup>11</sup>

**RECOMMENDATION:**

- ★ **CARE and the Policy implementor should contact local alumni of the GPS Community Leadership Program and work with them in the development of community-level institutions.**

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<sup>10</sup> The GPS Community Leadership Project has trained more than 250 female and male community leaders in eleven technical training programs targeted at building local leadership in rural areas throughout the country. Women and men who have distinguished themselves in service to their communities are selected to attend six weeks of technical training in the U.S. These programs provide participants with applied practical training to learn how both elected and non-elected officials in local communities can work together to resolve local problems.

Local empowerment and the role of the community leader is highlighted. Specific leadership training is provided so that participants can learn different techniques to motivate co-workers and community members. Project planning and implementation skills are reinforced through case studies and group projects. The role of community-based organizations is stressed so that participants can understand the function that these play in community development and the local democratic process.

<sup>11</sup> In addition, over 500 participants have been the recipients of U.S.-based short-term technical training in the fields of Natural Resource Management, Integrated Pest Management, Education Administration, Small Business/Artisan Training, and Advanced Extensionism. Women represent 46 percent of persons trained in all areas during 1992.

- ★ **CNRM should coordinate its work with local GPS alumni from such programs as Natural Resource Management and Integrated Pest Management.**

4. **LINKING INSTITUTIONS:** *Asociación Nacional de Agroforesteria*

Given the gap between national- and local-level activities -- in addition to the sectorization of natural resource issues -- linking and/or umbrella institutions will be very important. This is particularly true in the non-governmental area, where no formal means of communication exist. (Since losing its primary funding, ASINDES has not been active as an NGO linking institution.)

However, a new association of NGOs working in natural resources, the *Asociación Nacional de Agroforesteria*, is being organized. With the goal of acting as a coordinating group, the first meeting of about 16 NGOs was held in November 1992; the second was held in March 1993. The current president is Basilio Estrada, Natural Resource Coordinator of the Peace Corps.

**RECOMMENDATIONS:**

- ★ **As the IWMC implementor, CARE should become a member of the Association, both to contribute to its maturation and to use it as a networking source for local-level NGOs.**
- ★ **The Policy implementor should also establish links with the Association, investigating ways of using it as a network for information flow up and down the system.**

**E. IMPLEMENTING INSTITUTIONS: USAID, CARE, DIGEBOS, AND PEACE CORPS**

1. **USAID/GUATEMALA**

CNRM presents an opportunity for the Mission to integrate the strategic objective of Natural Resource Management with the other strategic objectives of Democratic Development and Population, issues which substantially impact upon community participation and environmental degradation. This integration should be carried out wherever possible. (See, for example, the recommendation on working with GPS alumni.)

2. ORGANIZATIONAL CHART: IWMC IMPLEMENTORS (CARE, DIGEBOS, PEACE CORPS)

**Regional Chiefs**  
**DIGEBOS**  
  
4 men

**Regional Coordinators**  
**CARE**  
  
3 men

|

|

**Sector Technicians**  
**DIGEBOS**  
(in name only; very unstable)  
no firm numbers

**Technical Assistants**  
**CARE**  
  
6 men / 1 woman

**Watershed Technicians**  
**(CARE funds; DIGEBOS employees)**  
  
10 men

**Local Promoters  
DIGEBOS**  
  
22 men

**Volunteers  
PEACE CORPS**  
  
4 men / 2 women

***N = 52 (49 men / 3 women)***

Since the beneficiary population of CNRM is at least 50 percent female, this gender ratio of IWMC staff is not acceptable. In all three implementing institutions (CARE, DIGEBOS, and Peace Corps), the gender ratio of implementing staff -- from regional to local levels -- should reflect the gender ratio of the beneficiary population; that is, 50 percent.

The problem is not that women are reluctant to participate or that they have only "home economics" roles. The problem lies with the implementing institutions.

Data show that when women are included as staff, the percentage of women as participants significantly increases. (See the roads project of USAID/Guatemala, for example.) This does not mean -- contrary to some stereotypes -- that groups have to be sexually segregated by participants and/or technician. Peace Corps experience shows that men can work successfully with women; and CARE technicians report that for some activities, women prefer to work in integrated household groups "just as we do when you're not here." These preferences need to be determined by the beneficiaries themselves, female and male.

Therefore, a very strong recommendation is made to increase the numbers of female staff -- at all levels -- and to give training and technical assistance in gender analysis to all staff.

### 3. CARE

a. **Beneficiary Participation: Community Institutions and Gender Issues**

CARE has been moving from what it describes as "paternalistic" models to more emphasis on "FPR" (Farmer Participatory Research) and "PCD," (Participatory Community Diagnostic) as described in the MICUENCA Proposal. As a CARE employee stated, "We have learned that paternalism is not the solution. CARE is moving from assistance to development."

However, the current activities of CARE in the HAD Project do not demonstrate a strength in community organization. In addition, the numbers of participants is not overwhelming. (And there is a significant questions about how representative participants are of the "poor farmers" in the area.) Both the weakness in community organization and the numbers are dilemmas in a project which uses community institutions and community -- rather than individual -- participation as its foundation. (See the Institutional Analysis for a longer discussion re CARE.)

Furthermore, CARE has a major weakness in its work to date with women farmers as beneficiaries of training and TA in watershed management. The number of women beneficiaries in COMPDA is very low. (See Attachment I: 18 percent compared to 70 percent of men; the remainder is children).

In 1988, a survey of the CARE Agroforestry Project showed that only 11 percent of participants were women. USAID/WID funding encouraged a focus on women, and, by the end of 1990, participation had risen to 17 percent. However, that funding has ended, and there is speculation that women's participation has fallen again. (No dates are given for the 18 percent figure in Attachment I.)

These gender ratios for beneficiaries and for CARE staff are not acceptable, particularly in a project where 50 percent of the residents are women.

**RECOMMENDATIONS:**

- ★ **It is strongly recommended that CARE technical and field staff participate in gender training on working with rural women and men in agroforestry and as co-participants in community management.**

**It may be useful for CARE and DIGEBOS to participate in training with an institution that has had a high degree of success in community participation, such as Aldea Global in Honduras.**

- ★ **It is strongly recommended that CARE technical and field staff reflect the gender ratio of its clients in the Project, i.e., 50 percent female.**

- ★ **It is recommended that a local-hire Social Scientist (sociologist or anthropologist) be a part of the IWMC team managed by CARE so that the Project has internal technical expertise on issues of community participation and gender, expertise which is continually fed into Project planning and implementation.**

#### 4. DIGEBOS

DIGEBOS was not included as a part of the Social Analysis. (See Institutional Analysis.) However, the organizational chart above shows a disturbing anomaly: all DIGEBOS promoters working at the community level are male. This backs up anecdotal evidence that DIGEBOS has been very reluctant to work with women farmers and that the internal culture of the organization is hostile toward women staff.

#### RECOMMENDATION:

- ★ **It is strongly recommended that DIGEBOS technical and field staff participate in gender training on working with rural women and men in agroforestry and as co-participants in community management.**
- ★ **It is strongly recommended that DIGEBOS technical and field staff reflect the gender ratio of its clients in the Project, i.e., 50 percent female.**

#### 5. PEACE CORPS

The Peace Corps has been actively involved in community-based natural resource, sustainable agriculture, and environmental education programs for more than 15 years. It has had significant achievements in working with women as well as men in natural resource projects, and male volunteers have also had success in working with women. Although more than 50 percent of volunteers are female in the watershed and agroforestry projects combined, there are currently more men than women (4/2) working in COMPDA. We are told that this number is flexible and will change with the new project.

#### F. MONITORING AND EVALUATION

The M&E component is described in more detail in other sections; however, following on the comments on the low level of social science input into CNRM, it is strongly suggested that a Social Scientist be included in the M&E team in order to provide continuing input on people-level issues. In addition, the socioeconomic baseline for M&E needs considerable improvement.

## **RECOMMENDATION:**

- ★ **A local-hire Social Scientist (sociologist or anthropologist) should be included as a part of the M&E component. The Scope of Work would include working with all Project components to ensure that information about the natural resource and institutional roles and responsibilities of men and women and about their community institutions are continually integrated into Project implementation, monitoring, and evaluation activities. Experience should include a knowledge of rural Guatemala, with particular expertise in community organization and gender issues, and knowledge of the use of qualitative and quantitative data.**
  
- ★ **Use the work of the PARAGRO Institutional Specialist and the results of the Special Study on *Households, Community, and Natural Resource Management* to establish a socioeconomic baseline. Include in this, as much as possible, the existing data from HADs and CARE.**

## **G. CONCLUSIONS**

If the constraints reflected by the Recommendations are recognized and acted upon in Project design and implementation, the impact on local beneficiaries -- women and men -- and their community institutions can be a positive one.

Socioeconomic benefits will include increased income opportunities for both women and men; more productive on-farm employment, reducing the need for off-farm wage labor and/or seasonal migration; and improved health, particularly in the area of pesticide use. In addition, the strengthening of community organizations will result in local-level social institutions which will assist the process of democratic development.

## **H. LIST OF PERSONS CONTACTED**

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## I. REFERENCES EXAMINED

Academy for Educational Development

*Proficiencia Oral Maya y Castellano en Ocho Regiones Mayas: Mapa Sociolingüístico Programa Nacional de Educación Bilingüe (PRONEBI)*. Proyecto de Fortalecimiento de la Educación (BEST). Prepared for Government of Guatemala and USAID/Guatemala. Washington, D.C., 1993 (?).

Alberti, Amalia, Gordon Bremer, et al.

*A Women in Development Portfolio Review: The Identification of Means To Further Promote the Integration of Gender Considerations Into USAID/Guatemala's Program*. Two volumes. Prepared for AID/WID. Washington, D.C., GENESYS, September 1990.

ASIES (Asociación de Investigación y Estudios Sociales)

*Educación ambiental en Guatemala: propuesta*. Guatemala, December 1988.

"Educación ambiental y educación popular," *Momento*, Año 7, No. 11, 1992.

*Organización social: notas sobre el pasado y lineamientos para el futuro*. Guatemala, nd.

"Políticas ambientales de la región central," *Momento*, Año 7, No. 5, 1992.

"Políticas ambientales de la región metropolitana," *Momento*, Año 7, No. 3, 1992.

"Políticas ambientales: región Sur-oriente de Guatemala," *Momento*, Año 6, No. 7, 1991.

Bergeron, Gilles

"Social and Economic Development in Four Ladino Communities of Eastern Guatemala: A Comparative Description." Forthcoming, *Food and Nutrition Bulletin*, April 1993.

*Progress in El Progreso: A Comparative Analysis of Three Agricultural Production Systems in Eastern Guatemala*. Ph.D. Dissertation, Department of Rural Sociology, Cornell University, 1993.

Bossen, Laurel

*The Redivision of Labor: Women and Economic Choice in Four Guatemalan Communities*. Albany, NY: State University of New York, 1984.

Brown, Michael, and Barbara Wyckoff-Baird

*Designing Integrated Conservation and Development Projects*. Washington, D.C., Biodiversity Support Program (World Wildlife Fund, The Nature Conservancy, and World Resources Institute), November 1992.

CARE Guatemala

Breve informe sobre resultados de WID dentro del proyecto Agroforestal. Guatemala, nd.

Community Natural Resource Management Project: Integrated Watershed Management Component (Fiscal Years 1994-1997). Draft. Guatemala, March 1993.

Plan de manejo de microcuenca. Chimaltenango: Río Paquip, Río Xelubacya, and Río Xepanil. Guatemala: Río El Molino. Huehuetenango: Río Esquizal and Río Selegua. Jutiapa: Quebrada Medrano, Quebrada de Monte Largo, Río San Pedro, Río Tahuapa, and Río Tamazulapa. San Marcos: Río La Democracia, Río Esquipulas, and Río Nahualá. Quetzaltenango: Talcanác. Guatemala, nd.

Resumen de las actividades realizadas como apoyo a grupos de mujeres 1990-1991, proyecto Agroforestal. Guatemala, nd.

Women in Development pamphlet. Guatemala, nd.

Caro, Deborah, James Riordan, and Melissa Cable

*The Cochabamba Rural Household Survey: Preliminary Findings*. Prepared for USAID/Bolivia and AID/Office of Women in Development. Washington, D.C.: GENESYS and LAC TECH, 1992.

Davis, Shelton, Arturo Cornejo, Robert Milford, and Michael Nelson

*Guatemala: Environmental Issues Paper*. Washington, D.C., The World Bank, Latin American and the Caribbean Region, June 1990.

Fabián C., Edda

*Selección de organizaciones no gubernamentales - ONGs - Calificadas que puedan ejecutar proyectos conjuntamente con FONAPAZ*. Informe Final Consultoria. Guatemala, Proyecto SAFLAC, FONAPAZ (Fondo Nacional para la Paz)/UNICEF, November 20, 1992. Also includes annex.

FUNDESA (Guatemalan Development Foundation)

*Directory of Private Voluntary Organizations Serving the Guatemalan Community*. Guatemala, 1989. Funded by USAID/Guatemala.

Government of Guatemala, Ministerio de Agricultura y Ganaderia y Alimentación (MAGA), Proyecto GUA/91/003/A/01/99, "Apoyo a la Reactivación del Sector Agrícola y de Alimentación" (Asistencia Preparatoria)

*Caracterización y focalización de la población objetivo a ser atendida por el sector público agrícola de alimentación - sugerencias para la canalización de los servicios.* Guatemala, February 1992.

Series of case studies from the above project, carried out by Byron Haroldo Contreras Marín, December 1992-January 1993.

Fortalecimiento y apoyo a la cooperativa integral agrícola "Maria del Carmen R.L." para la producción y comercialización rentable de productos no tradicionales y granos básicos.

Introducción de la producción bovina dentro del grupo del caserío Los Yaxones como una alternativa para la provisión de proteína animal y para la generación de ingresos adicionales.

Proyecto de manejo de la finca San Cristobal Palama como una unidad empresarial asociativa.

Instituto de Nutrición Centro America y Panama (INCAP)

*Calidad de vida, percepciones y experiencias en tres comunidades de Sacatepequez.* Informe preliminar. Prepared for USAID/Guatemala, September 14, 1992.

International Food Policy Research Institute (IFPRI), Institute of Nutrition of Central America and Panama (INCAP), "Unión de Cuatro Finos" Cooperative, and Ileana Pinto, et al.

*Nontraditional Export Crops among Smallholder Farmers and Production, Income, Nutrition, and Quality of Life Effects: A Comparative Analysis, 1985-1991.* Prepared for USAID/Guatemala, September 1992.

Katz, Elizabeth

*Intra-Household Allocation in the Guatemalan Central Highlands: The Impact of Non-Traditional Agricultural Exports.* Ph.D. Dissertation submitted to the Department of Agricultural Economics, University of Wisconsin, Madison, 1992.

"Separate Spheres and the "Conjugal Contact": Evidence from Highland Guatemala. Paper prepared for the Columbia University/New York University Consortium Conference on "Changing Perspectives on Women in Latin America and the Caribbean," New York University, April 24, 1992.

LAC TECH/DESFIL Technical Team

Sustainable Natural Resources Management in Guatemala: A Concept Paper (draft). Prepared for USAID/Guatemala, March 23, 1992.

Nations, James, Bruce Burwell, and Gary Burniske

**We Did This Ourselves: A Case Study of the INAFOR/CARE/Peace Corps Soil Conservation and Forest Management Program, Republic of Guatemala. Guatemala, AID/PC Forest Resources Management Project, December 1987.**

Nieves, Isabel

**Intra-Household Decision Making and Women's Time Allocation in a Cash-Cropping Scheme in Guatemala. Preliminary Report. Washington, D.C., International Center for Research on Women, 1986.**

**La construcción socio-cultural del género y la seguridad alimentaria en Centro America. Trabajo presentado en el Seminario-Taller "Mujeres centroamericanas ante la crisis, la guerra y el proceso de paz." San José, Costa Rica, Abril 25-27, 1990.**

Richards, Michael, and Julia Eecker Richards

***Languages and Communities Encompassed by Guatemala's National Bilingual Education Program.* Guatemala, Ministerio de Educación, División de Socio Educativo Rural, Programa Nacional de Educación Bilingüe, República de Guatemala. Funds provided by USAID/Guatemala. 1990.**

Schumacher, Henry, Edgar Nesman, et al.

**Highlands Agricultural Development Project: Phase II. Mid-Term Evaluation. Prepared for USAID/Guatemala, Office of Rural Development. Washington, D.C., Academy for Educational Development, June 1991.**

Shonder, John

**Natural Resource Management Program: Monitoring and Evaluation Plan. Prepared for USAID/Guatemala, Office of Natural Resource Management. Oak Ridge, TN, Oak Ridge National Laboratory, November 1992.**

USAID/Guatemala

**Community Natural Resource Management Project (CNRM). Project Identification Document, Draft. September 14, 1992.**

**Highlands Agricultural Development, Phase II. Project Paper Amendment No. 4. USAID Project No. 520-0274. December 1989.**

von Braun, Joachim, David Hotchkiss, and Maarten Immink

***Nontraditional Export Crops in Guatemala: Effects on Production, Income, and Nutrition.* Research Report 73. Washington, D.C.: International Food Policy Research Institute (IFPRI), in collaboration with the Institute of Nutrition of Central American and Panama (INCAP), May 1989.**

## ATTACHMENT I.

### SUMMARY OF 20 COMPDA WATERSHED AREAS <sup>12</sup>

<u>DEPARTMENT</u>	<u>WATERSHED</u>	<u>MUNICIPALITIES*</u>	<u>COMMUNITIES</u>
Chiriquense	Paquip	San Jos <sup>o</sup> , Paquip Tecuap <sup>o</sup>	La Cumbre, Paol, Paquip
	Xolobucy	Sta. Apolonia <sup>o</sup>	Paol, Paquip, Sta. Apolonia
	Xopani	Tecuap <sup>o</sup> Sta. Apolonia <sup>o</sup>	Pareybal, Xopac, Xopani
Guatemala	El Melico	Palencia <sup>o</sup>	Buenos Vistas, Maritimas, Socomoto
	Las Cubas	Palencia <sup>o</sup>	La de Silva, Pio del Carro, Tres Quebradas
Huehuetenango	Balsam	Todos Santos <sup>o</sup>	Balsam
	Esquipul	San Sebastian <sup>o</sup>	Casa De Talamancayon, Chojoj, Toluquinal
	Rio Colorado	San Sebastian <sup>o</sup>	Sicolas, Xatun, Xopac
	Solegon	Chisecto <sup>o</sup>	Buenos Vistas, Centro Comunal, El Pino, El Rancho, Petenitas, Q'Anon, Rio Escududo, San Pablo, Sibon
	Tres Cruces	Todos Santos <sup>o</sup>	Chozoy, Tres Cruces, Zucul
	Villa Atila	Todos Santos <sup>o</sup>	Villa Atila
	Jutiapa	Jutiapa <sup>o</sup>	La Montaña
Jutiapa	Montano Largo	Jutiapa <sup>o</sup>	Casa del Guayabo, El Llano
	Tahuaga	Yopiltapaque	El Llano, El Barro, El Pilon
	Tamamulaya	Acaul Ya Mila <sup>o</sup>	Agua Fria, Antico Lomas, Buenos Aires, Girasol, Las Cruces, Loma Largo, San Lorenzo
	San Pedro	Jutiapa <sup>o</sup>	Chico Hilario, Encino Gacho, Escarbas, Pallas de Trigo, Pallas Quebrada de Agua
	Quemalencan	Talcanac	Centro, La Estancia, Lobizano, Sta. Ines, Talcanac, Tej. Alc., Tej. Con, Tutchila, Xerzac
	San Marcos	Esquipulas	Alta Vista, Buenos Vistas, Casa de Piedra, El Rosario, El Tamar, Rodon, San Sebastian, Vista El Chiquarillo,
San Marcos	La Democracia	Tajumul <sup>o</sup>	Carro Serchil, La Democracia, La Union, Las Correas, Los Frontales, Los Puentes, L.P. Serchil, Puro Fier, San Antonio, Serchil
	Nabunda	San Marcos <sup>o</sup>	La Graciosa, La Laguna, Pedro G., San Andres Chapil, San Jose Cabon

\* Municipalities marked with \* have been included in the Municipal Development Training of the Guatemalan Peace Scholarship. For names and locations of participants (from municipalities and names), contact Mr. Scott Galman, Director, CPB (Guatemalan Peace Scholarship). Tel: 31.85.85 / 34.62.81.

<sup>12</sup> Source: Luis A. Lopez, Associate Chief, Agroforestry and Watershed Projects, CARE-Guatemala, March 1993.

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<u>DEPARTMENT</u>	<u>WATERSHED</u>	<u>AREA</u> (Km <sup>2</sup> )	<u>TOTAL</u> <u>POPULATION</u>	<u>TOTAL</u>	<u>MEN</u>	<u>PARTICIPANTS</u> <u>WOMEN</u>	<u>CHILDREN</u>
Chimaltenango	Paquep	4.12	3,000	46	46	0	0
	Xolobmaya	3.12	1,134	45	34	15	4
	Xopani	11.2	1,250	145	145	0	0
Guatemala	El Molino	4.80	1,000	45	33	16	6
	Las Cubas	9.20	1,082	35	12	7	9
Huehuetenango	Balzaton	5.92	233	19	15	0	0
	Esquimal	19.20	2,109	84	69	15	0
	Rio Colorado	8.12	4,500	144	144	0	0
	Salagua	18.20	4,374	215	107	64	44
	Tres Cruces	4.00	2,754	71	74	0	0
	Villa Alta	2.75	498	25	25	0	0
	Madrasa	27.08	400	12	12	0	0
Jutiapa	Monte Largo	19.08	3,289	18	15	0	0
	Tahuapa	36.03	913	25	25	0	0
	Tamuculapa	24.32	200	32	45	7	22
	San Pedro	23.92	1,478	67	67	0	0
	Talmanec	28.00	5,424	287	187	54	16
Quezaltenango	Talmanec	28.00	4,732	200	145	12	43
San Marcos	Esquipulas	19.00	5,139	204	137	59	70
	La Democracia	19.00	5,139	204	137	59	70
	Nabenda	34.30	17,452	122	55	55	12
<b>TOTALS</b>			<b>61,343</b>	<b>1,364</b>	<b>1,374</b>	<b>343</b>	<b>237</b>
<b>PERCENT OF TOTAL PARTICIPANTS</b>				<b>100%</b>	<b>79%</b>	<b>18%</b>	<b>12%</b>

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## ATTACHMENT II.

FINANCE AND PURCHASE OF MAJOR NON-FOOD EXPENDITURES IN A HIGHLAND AREA<sup>13</sup>

Expenditure	% Male Financed & Purchased	% Female Financed & Purchased	% Male Financed & Female Purchased	% Joint Financed or Purchased	% Other
House Construction & Repair	83.3	3.3	3.3	6.6	3.3
Agriculture Inputs & Equipment	83.0	0.8	2.0	5.1	9.1
Bicycles & Motorized Vehicles	81.2	0.0	0.0	0.0	18.7
Loan Payments	80.6	9.7	1.6	3.2	4.8
Land	77.8	0.0	0.0	16.7	5.6
Men's Clothes & Shoes	72.3	0.3	1.9	18.0	7.4
Prestige Items	31.1	10.4	10.4	15.7	12.5
School Fees, Supplies & Uniforms	49.5	4.6	23.0	9.3	13.7
Health Care	14.9	14.2	25.6	24.8	20.6
Celebrations	15.9	6.3	31.7	27.1	19.1
Children's Clothes & Shoes	31.9	5.5	14.9	32.6	15.1
Women's Clothes & Shoes	10.5	20.1	26.8	34.8	7.7
Dom. Technology	7.6	30.8	34.9	21.5	5.3
Animals	15.4	35.9	23.1	18.0	7.8

<sup>13</sup> Source: Katz, Elizabeth. "Separate Spheres and the 'Conjugal Contact': Evidence from Highland Guatemala."

**COMMUNITY NATURAL RESOURCE MANAGEMENT**

**PROJECT PAPER  
(520-0404)**

**ANNEX VI**

**ENVIRONMENTAL ANALYSIS**

**Office of Rural Development  
July 2, 1993**

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**EVALUATION OF HIGHLANDS AGRICULTURAL DEVELOPMENT II  
PROJECT (No. 520-0274) ENVIRONMENTAL ASSESSMENT  
TO DETERMINE APPLICABILITY OF RECOMMENDED MITIGATIONS TO  
COMMUNITY NATURAL RESOURCE MANAGEMENT PROJECT:  
INTEGRATED WATERSHED MANAGEMENT COMPONENT  
(PROJECT No. 520-0404) USAID/GUATEMALA**

## **INTRODUCTION**

Pursuant to 22 CFR Section 16, the USAID/Guatemala Mission completed an Initial Environmental Examination for the newly proposed project "Community Natural Resource Management, (No. 520-0404)" a six million dollar 4-year program designed to continue the watershed management component of the HAD II Project (No. 520-0274). The new Project Description includes three components: Integrated Watershed Management; a special fund for Private Technical Assistance (FEAT) and Natural Resource Management Policy.

For the four million dollar Watershed Management Component, USAID/Guatemala recommended that no environmental review needed to be taken since in general, the component will carry out many of the same activities implemented under the HAD II Project, which had already completed an Environmental Impacts Assessment containing a lengthy set of mitigation measures for foreseen negative impacts. USAID/Guatemala related that Components 2 and 3 (FEAT and Policy) are to provide technical assistance that will promote sound natural resource management and that no field activities nor purchase of commodities were envisaged under these latter components. AID/Guatemala therefore requested a categorical exclusion according to Section 216.2 (c) (2) (i) of 22 CFR. Based on those arguments, the Mission recommended on 12/21/92 that the new project be given a negative determination requiring no further environmental review.

On January 27, 1993, the LAC/DR/E Washington DC issued an Environmental Threshold Decision (LAC-IEE-93-08) attached as Annex 1 acknowledging the potential value of the HAD II Project EA, and stated that prior to approval for the use of this EA for watershed management activities under the new project, the document should be evaluated to assess its strengths and weaknesses and discuss how recommended mitigations could be applied to the Community Natural Resource Management Project. Moreover, the analysis of the HAD II Environmental Assessment should especially focus on the successes and failures of the mitigations based on the analysis. The mitigations should be incorporated into the new project design.

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Monitoring plans for the new project should be developed. Components 2 and 3 were categorically excluded. Finally, LAC/ER/D mandated that the project cannot involve the procurement or use of pesticides nor support for procurement of equipment or for activities that could lead to deforestation without first receiving the LAC Bureau Environmental Officer's approval of the appropriate Environmental Assessments.

The Individual Scope of Work for the Environmental Specialist for the preparation of the project paper and environmental assessment of the 520-0404 Project (see annex 2) listed 4 areas where negative environmental effects may be related to Project activities. The areas are: 1) Pesticide contamination. 2) Soil and water quality changes arising from intensive cultivation and use of high doses of chemicals, 3) Soil and water conservation, and 4) Homogeneous plantations and secondary forest management. In addition, the Scope of Work stated that the EA shall include:

- Identification of the potential problems related to pesticide and fertilizer use, and other potential impacts resulting from Project activities;
- Evaluation of the environmental, economic and social costs and benefits of the current practices related to these activities;
- Recommendations of specific measures to mitigate the potential negative environmental impacts under the Project;
- Evaluation of institutional capabilities, laws and regulations, and constraints for effective implementation of recommended measures.

The Regional Environmental Advisor was requested by the USAID/Guatemala Office of Rural Development to perform these duties.

## II. HAD ENVIRONMENTAL ASSESSMENT REVIEW

The 363 page Environmental Assessment for the HAD II Project dealt with the multifaceted project in a reasonable manner and produced a wide spectrum of suggested environmental mitigations to be followed (see condensed mitigations Annex 3). Following the format required by 22 CFR for Environmental Assessments, the HAD II EA is sufficient for the new project in its descriptions of sites, description of alternatives, descriptions of most environmental implications within the project area and description of most potential foreseeable impacts brought about by pesticide use. The HAD II Environmental Assessment lacked an adequate consideration of the population explosion currently occurring in Guatemala and its

implications to the success of mini-irrigation in the current land tenure situation, as related to accelerated deforestation, and natural resource depletion.

The document also was incorrect in its analysis in several points, including:

- 1) The HAD II EA is incorrect when it states that wild fauna populations are small and scarce in the project area. Sizable populations of birds exist in the project area, for example of ecologically important black vultures, boat-tailed grackles, swallows, various species of parrots, migratory robins and other thrushes, a complex of migratory warblers, orioles, woodpeckers, sparrows, owls, hawks, etc. These avian populations are extremely important ecologically and are particularly sensitive to pesticide contamination and habitat loss.

Avian fauna populations are under siege in Guatemala by habitat loss, and the project should implement protection of critical habitats, especially streamside plant communities and older forest and chaparral stands. A pesticide monitoring mitigation is recommended in the food chain as a consequence (see Table 1, item 6).

- 2) The HADS II EA stated that long fallow periods will degrade agricultural soils. This is incorrect unless the fallow soils are devoid of vegetation. Fallowing (rest) is an important traditional component of agriculture and IPM, as the absence of crops is important for nutrient recovery, soil friability and reduction of pests. Constant agricultural use, on the other hand, is considered to be a form of soil resource mining if not spaced by fallow periods. Fallowing even for short periods should therefore be a recommended IPM practice in the project.
- 3) In almost all of the Guatemalan highlands, the land was originally natural forest. Therefore the statement that "100% of the irrigated area had been previously used for agriculture or livestock" is only partially true, since all agricultural and livestock lands in the project area were originally dense forest. In fact, the majority of agricultural lands on steep slopes under the HAD II project have only recently been opened up to cultivation, and are not a part of the ancient Mayan agricultural scene.
- 4) "Production increases in area with small irrigation reduce the pressure to convert forest land to agricultural uses" is true only with a static population. Therefore the HAD II EA is incorrect when it says the production increase is a positive impact since increased production indirectly causes deforestation through augmenting population increases.

### III. CNRM TECHNICAL PROPOSAL REVIEW DRAFT DATED MARCH, 1993

The purpose of the Integrated Watershed Management Component of the Project is "to provide appropriate technical assistance to small farmers in 20-30 selected upper watersheds, in order that they stabilize and gradually improve the management and productivity of local soil, water, and forest resources to improve their livelihood, favorably impact the overall condition of the watershed and trigger a maximum of downstream benefits." The activities would tend to continue to protect the mini-irrigation projects established during the HADs projects and the Small Farmers Diversification Project.

The component's final goals are to: 1) Establish an installed capacity at the community level within up to thirty selected watersheds so that their natural resources may be managed in an economically and ecologically sustainable manner over the longer term; 2) Increase the productivity in a sustainable fashion, of 4,500 small holdings, the application of appropriate farm and forest management techniques, thereby contributing directly to the socio-economic well-being of 27,000 rural Guatemalans. Intermediate goals for 1997 include established demonstration watersheds, improved farm and forest productivity, increased farm plantations and increased environmental awareness. The Components sub-components are: 1) Community Diagnosis, Organization and Training, 2) Watershed Management, 5) Environmental Education, and 6) Rural Economic Programming.

Following the format of the Scope of Work, the following categories of potential environmental impacts are identified.

#### **A - IDENTIFICATION OF THE POTENTIAL PROBLEMS RELATED TO PESTICIDE AND FERTILIZER USE, AND OTHER POTENTIAL IMPACTS RESULTING FROM PROJECT ACTIVITIES.**

i. **Pesticides:** The HAD II EA will for the most part suffice for pesticide mitigations. The project should continue with the mitigations listed in Tables 1 and 2). HAD II activities created a thorough mechanism for rational pesticide use as have other projects such as the AID/Guatemala small farmer coffee project, and ROCAP's RENARM and EXITOS projects. These collective mitigations are in place and CARE should rely on them during the project (see Annex 3). (FEAT cannot recommend pesticides that are not EPA - approved).

ii. **Watershed Management:** Integrated watershed management impacts in terms of soil and water conservation will mostly be mitigated through correct soil conservation projects already sufficiently described in the Project Paper. The creation of farm management

plans and watershed management plans in themselves will tend to convince farmers to incorporate conservation measures on their properties. If the stated goals of CNRM are reached by the end of the Project, the overall impacts to the environment will be improvements over the current situation.

The potential environmental impacts of CNRM will be similar to those of the HAD II project since the project will be implemented mostly in the same or similar watersheds with the same or similar activities except the new project will not construct new mini-irrigation systems. Indirect but potentially significant negative effects will come about as adjacent farmers not reached by HAD II or the new project install new irrigation systems which may deplete soil resources and water supplies outside the control of the Project. This has already happened in some cases (eg. in Momostenango, 1986, where farmers living at high altitudes in project watersheds were not included in the HAD I project decided to divert irrigation water for their own purposes and thus shut off the water to irrigated Project fields below. The CNRM Technical Proposal stresses the importance of complete watershed management plans, and such planning should tend to reduce this kind of impact. The HAD II EA also stated that mini-irrigation sites which do not practice soil conservation have the tendency to suffer significant soil erosion. Likewise, terraces that have already been constructed in the project watersheds or new terraces to be constructed must be accompanied by a clear and formal understanding about the basic necessities of terrace maintenance, since terraces without maintenance are worse than no terraces at all. Numerous terraces constructed under the HAD I project lacked this understanding in the communities and among local farmers, and in many examples, the erosion from neglected terraces is now significant. Worse, in many sites in the western highlands terraces exist which were constructed properly, but not maintained, and many of them are now being torn down by the very farmers who built them. This must not be permitted within the new project. The mitigatory measures for maintaining and improving terraces in the new project are described by CARE, where individual farm plans will be prepared to help farmers manage their lands better. These plans must include the description of existing or planned terraces, and maintenance procedures. If situations occur where terraces will be built or exist on public lands in the project area, the individual government bodies must be convinced to delegate responsibility for maintenance to committees or individuals in the community in return for farming concessions on those terraces. This kind of education and incentives should conserve and improve terrace infrastructure.

**iii. Forest Management:** At the same time, farmers who have access to forested lands in project watersheds, but who are outside of the project influence, may be persuaded by market demands to clear their forests and convert over to mini-irrigation. This has been

observed frequently in at least 11 Guatemalan Departments by the author since at least 1986 where primary forests (definition = the only forests in the area) are cut and transferred into corn milpa being dislocated by Non Traditional Agricultural Export crops, and often after several years, these new milpas are converted to NTAE crops themselves. The mitigations for this negative impact, which is significant in Guatemala, require that the populace be educated in terms of ecosystem holding capacity, marketing of produce, and integrated watershed management, and to strengthen DIGEBOS and DIGFSA influence.

Some forested lands within the project area should not be managed on a sustained yield basis for timber products. These lands have greater value as fully protected watersheds, thus rendering a sustained yield of water. These areas within the selected watersheds should be identified and protected. On the few publicly owned lands in this categories, the Project should work with local governments to draw up and follow watershed management plans to protect them as much as possible. In terms of privately owned parcels under this category, the project should make landowners aware of the situation during the formulations of individual farm management plans, and creatively work out incentives for conservation easements needed to protect the watersheds at large. Likewise, such areas which are most useful as protected lands should be replanted where necessary in a mix of species, especially native species which can be coppiced out, in case it is not politically feasible within the project to "preserve" these critical watersheds. Thus, at least the roots will be maintained retaining a significant portion of the soil.

iv. Social Implications. It is important not to limit women's roles away from agriculture and forestry. Women in the highlands of Guatemala play important and indispensable roles in Guatemalan agriculture and forestry in field preparation, sowing, weeding, fertilization, pesticide application, harvesting, processing, transport, storage and cooking of agricultural products. Women haul equipment to the woods gathering firewood and haul it home. Then they split the firewood and cook with it, alongside their men. The project must not try to compartmentalize activities by gender based on some extra-cultural misconception of what may be perceived as "cultural acceptability" for women's activities.

Although it is important to attempt to improve yields on small parcels of lands, trying to convince farmers to stay on their micro-parcels of land "no matter how small they are" may be devastating both to the culture, economy and environment. Per se, there is nothing wrong with migration to the cities if there is space and work in urban areas. Places to migrate to become critical, but there are certain cities in Guatemala better than others to migrate to for work. With reported employment shortages in assembly plants for electronics and clothing in Chimaltenango and Quetzaltenango, perhaps a new USAID project should address

employment needs and migration patterns. Besides, it is a given that the small parcels of land are inadequate presently to support the populace in the countryside as witnessed by the perennial and not diminishing migration to the lowlands to harvest and cultivate traditional export commodities.

Which brings the discussion to the population explosion now occurring in Guatemala. With a 22 year doubling time predicted for the nation, and even less in the countryside where families have insufficient family planning, counseling and access to technical assistance, the population of Guatemala is estimated to grow from 9.7 million in 1992 to 11.38 million by 1997, an increase of 1.68 million people. These estimates, according to a recent Science article (1992), are probably significantly too conservative. It is known from surveys on the Small Farmers Diversification Project, that the first indicator of project success is increased medicine purchases; purchases aimed primarily at preventing and curing childhood diseases, especially intestinal diarrhea and other parasites. If the project meets its goal to increase income for farming families, the ever increasing number of surviving children will create additional significant demands on all environmental resources, which will tend to overwhelm any advances and progress made by the Project. Thus, to mitigate this situation partially in its own due responsibility, the Project must incorporate a family planning - child spacing component in its environmental education component from other on-going CARE, GOG and USAID projects. Precedent exists for this mitigation in CARE's Rural Water and Health Project (Project No. 520-0408). If CARE's 0408 sites are within the selected watersheds, then the mitigation is already in place. If not, CARE should be required to include the new watersheds within their sphere of influence from the 0408 project.

**B. EVALUATION OF THE ENVIRONMENTAL, ECONOMIC AND SOCIAL COSTS AND BENEFITS OF THE CURRENT PRACTICES RELATED TO THESE ACTIVITIES.**

The HAD II EA should be sufficient for this item. The project is specifically aimed at environmental conservation, improving the economies of small farmers, and improving social interactions. Suffice it to say that no mitigation measure suggested in this document will be a burden to the project. To the contrary, the suggestions will improve the project based on many years of actualization in the project area.

**C. RECOMMENDATION OF SPECIFIC MEASURES TO MITIGATE THE POTENTIAL NEGATIVE ENVIRONMENTAL IMPACTS UNDER THE PROJECT.**

Table 1 contains a list of mitigations drawn from interviews

during the exercise to create the Project Paper. Table 2 contains a list of mitigations taken from the HAD II EA which are directly applicable to the CNRM project.

TABLE 1

SUGGESTED MITIGATION MEASURES FOR CNRM PROJECT

- 1) Continue implementation of certain mitigation measures under HAD II EIA. (Table 2).
- 2) The CNRM Program must interface with existing AID and other Family Planning and Child Health programs as a component of the environmental education programs of CARE to disseminate child health, and child spacing information.
- 3) Continue with strong interaction of pesticide/IPM component of RENARM Project, but include traditional agriculture aspects of IPM as well, such as crop rotation, and fallowing.
- 4) Provide retail agrichemical outlets in and near project watersheds with Technical Assistance in pesticide management for local communities.
- 5) FEATS cannot recommend pesticides that are not USEPA - approved.
- 6) Perform periodic measuring of environmental pesticide loads in the dry season (Feb - April) using bioindicators such as boat-tailed grackles or turkey vultures or mother's milk plus water and soils, since HAD II indicated soil contamination during the rainy season. This monitoring activity should be kept simple, relatively inexpensive and applicable to pragmatic solutions. The Office of the Regional Environmental Officer could lend technical assistance in the design of such a monitoring system. Local Guatemalan pesticide residue laboratories currently have the capacity to assess soil, water and tissue samples. A budgetary line item in the Project should be established for completion of this monitoring. Estimated costs should not exceed \$3000-\$5000 every other year during the life of the project (Total maximum of \$10,000).
- 7) Continue with roadside stabilization plantings with willow (Salix), Aliso (Alnus), Erythrina, etc. Use native species where possible.
- 8) Continue with sufficient Technical Assistance on irrigation activities to prevent excessive runoff and soil saturation.
- 9) Continue with courses on maintenance on irrigation systems,

springs, and other components of existing irrigation.

- 10) In lands under mini irrigation for 5 years or more, comparative tests should be made for nutrient content and salinity.
- 11) Terraces need to be maintained for long term. Community Policy for terrace maintenance responsibility and training need to be accomplished.
- 12) Same with living barriers. Grass species should be appropriate species that have multiple uses (such as vetiver grass).
- 13) Same with living fences and dividers. Should include as many species as possible. Link to Madeleña Project.
- 14) Fruit work to build upon AID-DIGESA fruit improvement programs. Existing fruit varieties within community nurseries should be gradually replaced with improved varieties. If not possible, apples should be phased out of program and not be included in the agroforestry program due to their special grafting and disease control requirements.
- 15) Some forest stands should not be managed on a sustained yield basis of timber products. They have greater value as protected water sheds (sustained yield of water) than timber. These watersheds should be identified and protected. Even though certain philosophies of forest management declare that the only way to keep forest stands intact is to use them in a sustainable manner, certain stands, eg. those growing on near vertical slopes are impossible to log safely with available technologies. Therefore, this mitigation suggestion, as amplified in the text, recommends that means be sought on public and private lands to provide incentives for the preservation of certain forested blocks which fall under this category.
- 16) During forest management, practicing clear cutting and block cutting are to be avoided. Purchase of chainsaws and other extraction and processing equipment for timber management must be accompanied by a specific timber management plan based on sustained yield per watershed before purchases are permitted for the project.
- 17) Forest Management and Farm Management. Before exotic species are introduced into the watershed for planting or for nursery establishment and improvement, the plant material must be inspected by authorized professionals for plant health. Diseased or infested stock should be destroyed before introduction of said materials into Project watersheds. Exotic fruit tree stock is to be included in this category.

- 18) During program monitoring and evaluation, compliance with mitigations should be determined and adjustments made if necessary as determined by Mission Environmental Officer or Regional Environmental Advisor.

TABLE 2

**HAD II ENVIRONMENTAL MITIGATIONS APPLICABLE  
TO CNRM PROJECT**

- 1) Develop an integrated pest/pesticide management and agromedical component sequel to HAD-II.
- 2) Improve the integrated watershed management and soil conservation perspective at all levels of implementation.
- 3) Maintain a high level of awareness of wildlands/biodiversity conservation through selection of non-residual pesticides, small irrigation sites and forest management practices.

1. Integrated Pest and Pesticide Management Activities:

- a) Use and up date HAD II list of pesticides based on USEPA registration status, risk of acute intoxication, chronic health problems and successful diversified agriculture requirements.
- b) Use and up date HAD II list of crops for which the most IMP technology exists, or that are pesticide-cost effective.
- c) Use handbooks prepared by USAID HADS, and RENARM of all EPA approved pesticides, including their common uses, chemical names application rates and techniques, pest controlled required protection equipment, poisoning symptoms, first-aid care and clinical treatment. Use a list of Public Health clinics by locality.
- d) Set up an environmental monitoring program, including a system of verifying that CNRM beneficiaries are aware of pesticide-use hazards.

2) Wildlands/biodiversity component:

- a) The CNRM Project will use HAD II generated maps of protected/unique areas/habitats and with lists of

rare/ endangered species available and exert a vigilance to avoid possible jeopardy of these rare and unique natural wildlife resources.

- b) . Small irrigation sites should not be located in the direct vicinity of protected and unique habitats.
- c) Make pesticide use in the area of protected/unique habitats possible only under the auspices of an active IPM program.

## **COMPLIANCE WITH SECTIONS 118 AND 119 OF THE FOREIGN ASSISTANCE ACT.**

Section 118 of the FAA seeks to protect tropical forests and biodiversity in developing countries.

The CICP/ECOTECNIA EA team has reviewed the HAD Amendment and finds it fitting with the spirit of Section 118 of the Foreign Assistance Act. However, some specific implementation documents fail to carry through the spirit of Section 118. for example, within the land and water use component no activity is included to manage or protect natural areas or valuable genetic resources.

### **b) Land Tenure:**

The HAD project should pay attention to land tenure and farm simple land tenure methods, especially farmer-owned, communal or associated production lands. Rented or colonized lands could place obstacles to the objectives of the project.

## **D. EVALUATION OF INSTITUTIONAL CAPABILITIES, LAWS AND REGULATIONS, AND CONSTRAINTS FOR EFFECTIVE IMPLEMENTATION OF RECOMMENDED MEASURES.**

The HAD II EA sufficiently evaluated these items.

**COMMUNITY NATURAL RESOURCE MANAGEMENT**

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**ANNEX VII**

**DETAILED FINANCIAL TABLES & PROCUREMENT  
PLAN**

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**ANNEX 7 - DETAILED FINANCIAL TABLES & PROCUREMENT PLAN**

**Table 1** Illustrative Financial Plan

**Table 2** Summary Cost Estimates and Financial Plan

**Table 3** Projected Expenditures by Fiscal Year

**Table 4** Budget of AID Contribution of MICUENCA component  
Procurement Plan.

Table 1

Community Natural Resources Management Project

**Illustrative Financial Plan (US \$ 000)**  
by Project Activities

Project Elements/Activities	A.I.D. GRANT			CARE/OTHER	TOTAL
	Current Obligation	Future Obligations	LOP Costs	LOP Contributions	LOP Costs
Integrated Watershed Management	2048.0	2152.0	4200.0	1610.3	5810.3
<b>TOTAL</b>	<b>2048.0</b>	<b>2152.0</b>	<b>4200.0</b>	<b>1610.3</b>	<b>5810.3</b>

CNRMT1V3.WK3 4/13/93, revised 5/17/93 and 6/7/93. Totals may not exactly add due to rounding.

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Table 2

Community Natural Resources Management Project

**Summary Cost Estimates and Financial Plan**  
(\$ 000)

Project Elements/Activities	A.I.D. GRANT			CARE/OTHER	TOTAL
	Local Currency	Foreign Exchange	Total Costs	LOP Contributions	LOP Costs
Integrated Watershed Management	3066.5	1133.5	4200.0	1610.3	5810.3
TOTAL	3066.5	1133.5	4200.0	1610.3	5810.3

CNRMT2V3.WK3 4/13/93, revised 5/15/93 and 8/16/93. Totals may not exactly add due to rounding.

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Table 3

Community Natural Resources Management Project

**Projected Expenditures by Project Year**  
(\$ 000)

Project Elements/Activities	YEAR 1		YEAR 2		YEAR 3		YEAR 4		TOTAL	
	USAID	CARE/OT.	USAID	CARE/OT.	USAID	CARE/OT.	USAID	CARE/OT.	USAID	CARE/OT.
Integrated Watershed Management	1464.5	390.4	983.0	374.3	901.7	445.6	850.8	400.0	4200.0	1610.3
<b>TOTAL</b>	<b>1464.5</b>	<b>390.4</b>	<b>983.0</b>	<b>374.3</b>	<b>901.7</b>	<b>445.6</b>	<b>850.8</b>	<b>400.0</b>	<b>4200.0</b>	<b>1610.3</b>

CNRMT3V3.WK3 4/13/93, revised 8/16/93. Figures may not exactly add due to rounding in this and other tables.

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**Table No. 4**  
**Community Natural Resources Management Project**  
**CARE Component**

<u>Project Activities</u> <u>Line Items</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Total</u>
<u>(\$000)</u>					
<u>International Staff</u>					
1 Sector Coordinator (25%)	7,200	7,200	7,200	7,200	28,800
1 Project Manager (100%)	26400	26400	26400	26400	105,600
Sub-Total	33,600	33,600	33,600	33,600	134,400
Benefit & Allowances	56,558	56,558	56,558	56,558	226,232
Total International Staff	90,158	90,158	90,158	90,158	360,632
<u>National Staff</u>					
Salaries	149,520	149,520	149,520	149,520	598,080
Benefits	74,487	74,487	74,487	74,487	297,948
Total National Staff	224,007	224,007	224,007	224,007	896,028
Total Salaries & Benefits	314,165	314,165	314,165	314,165	1,256,660
<u>Consultancies</u>					
FEAT	180008				180,008
Micro watershed Tech.	85,500	43,500	43,500	43,500	216,000
Air Tickets	3,000	3,000	3,000	3,000	12,000
Total Consultancies	268,508	46,500	46,500	46,500	408,008
Staff Training	24,000	17,800	14,400	14,400	70,700
Workshops for Promoters & Peace Corp Volunteers	9,600	5,600	6,000	6,400	27,600
Workshops for participants	43,750	43,750	49,000	52,500	189,000
Total Training	77,350	67,250	69,400	73,300	287,300
<u>Commodities</u>					
Forrest equipment	6,000				6,000
Educational Equipment	65,750	43,000	38,000	41,800	188,550
Computers	37,500	11,550	8,550		57,600
Office Equipment	12,800				12,800
Total Commodities & Vehicles	122,050	54,550	46,550	41,800	264,950
Special Fund for T.A. (FEAT)	189,600	127,000	65,000	18,400	400,000
Travel & Perdiem	26,391	26,391	26,391	26,527	105,700
Operational Costs	223,585	223,585	223,585	223,585	894,260
Sub Total Care	1,221,629	859,421	791,571	744,121	3,616,878
CARE ind.cost recov.(7.6%)	92,844	65,318	60,159	58,553	274,883
Total CARE	1,314,473	924,737	851,730	800,674	3,891,761
<u>RESERVED TO AID</u>					
PSC, Project Officer Assistant	50,000	50,000	50,000	50,000	200,000
Monitoring & Evaluation system design	100,000				100,000
Total Reserved to AID	150,000	50,000	50,000	50,000	300,000
GRAND TOTAL PROJECT	1,464,473	974,737	901,730	850,674	4,191,761
ROUNDED TO					4,200,000

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**PROCUREMENT PLAN**

<b>COMPONENT</b>	<b>COMMODITIES ITEM</b>	<b>Unit Price (US\$)</b>	<b>Total (US\$)</b>	<b>YEAR</b>	<b>AGENT</b>	<b>SOURCE</b>	
<b>Integrated Watershed Management</b>	<b>6</b>	<b>Slides projector</b>	<b>1,000</b>	<b>6,000</b>	<b>94</b>	<b>CARE</b>	<b>USA</b>
		<b>Forest equipment</b>		<b>6,000</b>	<b>94</b>	<b>CARE</b>	<b>USA/GER</b>
	<b>3</b>	<b>VCR TV</b>	<b>1,000</b>	<b>3,000</b>	<b>94</b>	<b>CARE</b>	<b>USA/JAP</b>
	<b>3</b>	<b>Electric plants</b>	<b>850</b>	<b>2,550</b>	<b>94</b>	<b>CARE</b>	<b>USA</b>
		<b>Materials, tools</b>		<b>105,000</b>	<b>94/97</b>	<b>CARE</b>	<b>USA/GUA</b>
		<b>Promotional</b>					
		<b>Materials</b>		<b>30,000</b>	<b>94/97</b>	<b>CARE</b>	<b>GUA</b>
	<b>4</b>	<b>Cameras 35 mm</b>	<b>300</b>	<b>1,200</b>	<b>94</b>	<b>CARE</b>	<b>USA</b>
		<b>Aerials Photographs</b>		<b>10,000</b>	<b>94</b>	<b>CARE</b>	<b>GUA</b>

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**COMMUNITY NATURAL RESOURCE MANAGEMENT**

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**ANNEX VIII**

**PROJECT ASSISTANCE CHECK LIST**

**Office of Rural Development  
July 2, 1993**

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**5C(2) - PROJECT ASSISTANCE CHECKLIST**

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

CROSS REFERENCE: IS COUNTRY CHECKLIST UP TO DATE? **Yes**

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

1. **Host Country Development Efforts** (FAA Sec. 601(a)): Information and conclusions on whether assistance will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of

1. a) Improved techniques are likely to result in increased agriculture export production.
- b) Extensions services will target small, private farmers.
- c) N/A
- d) N/A
- e) Improved natural resources management will result in increased economic

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industry, agriculture, and commerce; and (f) strengthen free labor unions.

returns of agricultural production in Guatemala.

2. U.S. Private Trade and Investment (FAA Sec. 601(b)): Information and conclusions on how assistance will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).

N/A

3. Congressional Notification

a. General requirement (FY 1993 Appropriations Act Sec. 522; FAA Sec. 634A): If money is to be obligated for an activity not previously justified to Congress, or for an amount in excess of amount previously justified to Congress, has Congress been properly notified (unless the Appropriations Act notification requirement has been waived because of substantial risk to human health or welfare)?

A CN will be submitted prior to obligation.

b. Notice of new account obligation (FY 1993 Appropriations Act Sec. 514): If funds are being obligated under an appropriation account to which they were not appropriated, has the

N/A

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President consulted with and provided a written justification to the House and Senate Appropriations Committees and has such obligation been subject to regular notification procedures?

c. Cash transfers and nonproject sector assistance (FY 1993 Appropriations Act Sec. 571(b)(3)): If funds are to be made available in the form of cash transfer or nonproject sector assistance, has the Congressional notice included a detailed description of how the funds will be used, with a discussion of U.S. interests to be served and a description of any economic policy reforms to be promoted?

N/A

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

N/A

5. Legislative Action (FAA Sec. 611(a)(2)): If legislative action is required within recipient country with respect to an obligation in excess of \$500,000, what is the basis for a reasonable

N/A

expectation that such action will be completed in time to permit orderly accomplishment of the purpose of the assistance?

6. **Water Resources** (FAA Sec. 611(b); FY 1993 Appropriations Act Sec. 501): If project is for water or water-related land resource construction, have benefits and costs been computed to the extent practicable in accordance with the principles, standards, and procedures established pursuant to the Water Resources Planning Act (42 U.S.C. 1962, et seq.)? (See A.I.D. Handbook 3 for guidelines.)

N/A

7. **Cash Transfer and Sector Assistance** (FY 1993 Appropriations Act Sec. 571(b)): Will cash transfer or nonproject sector assistance be maintained in a separate account and not commingled with other funds (unless such requirements are waived by Congressional notice for nonproject sector assistance)?

N/A

8. **Capital Assistance** (FAA Sec. 611(e)): If project is capital assistance (e.g., construction), and total U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's

N/A

capability to maintain and utilize the project effectively?

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

N/A

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

N/A

11. **Local Currencies**

a. **R e c i p i e n t Contributions** (FAA Secs. 612(b), 636(h)): Describe steps taken to assure that, to the maximum extent possible, the country is

GOG counterpart will cover recurrent costs under the policy component. It is anticipated that PL-480 Title I local currencies will be made available for the watershed

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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.

management component.

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

N/A

c. Separate Account (FY 1993 Appropriations Act Sec. 571). If assistance is furnished to a foreign government under arrangements which result in the generation of local currencies:

N/A

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

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

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

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

## 12. Trade Restrictions

a. Surplus Commodities (FY 1993 Appropriations Act Sec. 520(a)): If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing

N/A

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commodity?

b. Textiles (Lautenberg Amendment) (FY 1993 Appropriations Act Sec. 520(c)): Will the assistance (except for programs in Caribbean Basin Initiative countries under U.S. Tariff Schedule "Section 807," which allows reduced tariffs on articles assembled abroad from U.S.-made components) be used directly to procure feasibility 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?

No

13. Tropical Forests (FY 1991 Appropriations Act Sec. 533(c)(3) (as referenced in section 532(d) of the FY 1993 Appropriations Act): Will funds be used for any program, project or activity which would (a) result in any significant loss of tropical forests, or (b) involve industrial timber extraction in primary tropical forest

No

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areas?

**14. PVO Assistance**

**a. Auditing and registration (FY 1993 Appropriations Act Sec. 536):** If assistance is being made available to a PVO, has that organization provided upon timely request any document, file, or record necessary to the auditing requirements of A.I.D., and is the PVO registered with A.I.D.? **Yes**

**b. Funding sources (FY 1993 Appropriations Act, Title II, under heading "Private and Voluntary Organizations"):** If assistance is to be made to a United States PVO (other than a cooperative development organization), does it obtain at least 20 percent of its total annual funding for international activities from sources other than the United States Government? **Yes**

**15. Project Agreement Documentation (State Authorization Sec. 139 (as interpreted by conference report)):** Has confirmation of the date of signing of the project agreement, including the amount involved, been cabled to State L/T and A.I.D. LEG within 60 days of the agreement's entry into force with respect to the United States, and has the full text of the **N/A**

agreement been pouched to those same offices? (See Handbook 3, Appendix 6G for agreements covered by this provision).

16. **Metric System** (Omnibus Trade and Competitiveness Act of 1988 Sec. 5164, as interpreted by conference report, amending Metric Conversion Act of 1975 Sec. 2, and as implemented through A.I.D. policy): Does the assistance activity use the metric system of measurement in its procurements, grants, and other business-related activities, except to the extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms? Are bulk purchases usually to be made in metric, and are components, subassemblies, and semi-fabricated materials to be specified in metric units when economically available and technically adequate?

Yes

Will A.I.D. specifications use metric units of measure from the earliest programmatic stages, and from the earliest documentation of the assistance processes (for example, project papers) involving quantifiable measurements (length, area, volume, capacity, mass and weight), through the implementation stage?

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17. **Women in Development** (FY 1993 Appropriations Act, Title II, under heading "Women in Development"): Will assistance be designed so that the percentage of women participants will be demonstrably increased? **Yes**
18. **Regional and Multilateral Assistance** (FAA Sec. 209): Is assistance more efficiently and effectively provided through regional or multilateral organizations? If so, why is assistance not so provided? Information and conclusions on whether assistance will encourage developing countries to cooperate in regional development programs. **No**
19. **Abortions** (FY 1993 Appropriations Act, Title II, under heading "Population, DA," and Sec. 524): **N/A**
- a. Will assistance be made available to any organization or program which, as determined by the President, supports or participates in the management of a program of coercive abortion or involuntary sterilization? **N/A**
- b. Will any funds be used to lobby for abortion? **N/A**
20. **Cooperatives** (FAA Sec. 111): Will assistance help **Assistance will target rural communities.**

develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward a better life?

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

a. Use of currencies (FAA Secs. 612(b), 636(h); FY 1993 Appropriations Act Secs. 507, 509): Are steps being taken to assure that, to the maximum extent possible, foreign currencies owned by the U.S. are utilized in lieu of dollars to meet the cost of contractual and other services. N/A

b. Release of currencies (FAA Sec. 612(d)): Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release? No

**22. Procurement**

a. Small business (FAA Sec. 602(a)): Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed? Yes

b. U.S. procurement (FAA Sec. 604(a) as amended by section 597 of the FY 1993 Appropriations Act): Will all procurement be from the U.S., the recipient Yes

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country, or developing countries except as otherwise determined in accordance with the criteria of this section?

c. **Marine insurance** (FAA Sec. 604(d)): If the cooperating country discriminates against marine insurance companies authorized to do business in the U.S., will commodities be insured in the United States against marine risk with such a company? N/A

d. **Non-U.S. agricultural procurement** (FAA Sec. 604(e)): If non-U.S. procurement of agricultural commodity or product thereof is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.) N/A

e. **Construction or engineering services** (FAA Sec. 604(g)): Will construction or engineering services be procured from firms of advanced developing countries which are otherwise eligible under Code 941 and which have attained a competitive capability in international markets in one of these areas? (Exception for those countries which receive direct economic No

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

f. **Cargo preference shipping (FAA Sec. 603):** No  
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?

g. **Technical assistance (FAA Sec. 621(a)):** Yes  
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?

h. **U.S. air carriers (International Air)** Yes

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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?

i. Termination for convenience of U.S. Government (FY 1993 Appropriations Act 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? **Yes**

j. Consulting services (FY 1993 Appropriations Act Sec. 523): 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)? **Yes**

k. Metric conversion (Omnibus Trade and Competitiveness Act of 1988, as interpreted by conference report, amending Metric Conversion Act of 1975 Sec. 2, and as implemented through A.I.D. policy): Does the assistance program use the metric system of **Yes**

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measurement in its procurements, grants, and other business-related activities, except to the extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms? Are bulk purchases usually to be made in metric, and are components, subassemblies, and semi-fabricated materials to be specified in metric units when economically available and technically adequate? Will A.I.D. specifications use metric units of measure from the earliest programmatic stages, and from the earliest documentation of the assistance processes (for example, project papers) involving quantifiable measurements (length, area, volume, capacity, mass and weight), through the implementation stage?

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

23. **Construction**

a. **Capital project** (FAA Sec. 601(d)): If capital (e.g., construction) project, will U.S. **N/A**

engineering and professional services be used?

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

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

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

25. Communist Assistance (FAA Sec. 620(h)). Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc N/A

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countries.

**26. Narcotics**

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

b. **Assistance to narcotics traffickers** (FAA Sec. 487): Will arrangements take "all reasonable steps" to preclude use of financing to or through individuals or entities which we know or have reason to believe have either: (1) been convicted of a violation of any law or regulation of the United States or a foreign country relating to narcotics (or other controlled substances); or (2) been an illicit trafficker in, or otherwise involved in the illicit trafficking of, any such controlled substance? **Yes**

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

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28. **Police and Prisons** (FAA Sec. 660): Will assistance preclude use of financing to provide training, advice, or any financial support for police, prisons, or other law enforcement forces, except for narcotics programs? **Yes**
29. **CIA Activities** (FAA Sec. 662): Will assistance preclude use of financing for CIA activities? **Yes**
30. **Motor Vehicles** (FAA Sec. 636(i)): Will assistance preclude use of financing for purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained? **Yes**
31. **Military Personnel** (FY 1993 Appropriations Act Sec. 503): Will assistance preclude use of financing to pay pensions, annuities, retirement pay, or adjusted service compensation for prior or current military personnel? **Yes**
32. **Payment of U.N. Assessments** (FY 1993 Appropriations Act Sec. 505): Will assistance preclude use of financing to pay U.N. assessments, arrearages or dues? **Yes**
33. **Multilateral Organization Lending** (FY 1993 Appropriations Act **Yes**
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Sec. 506): Will assistance preclude use of financing to carry out provisions of FAA section 209(d) (transfer of FAA funds to multilateral organizations for lending)?

34. Export of Nuclear Resources (FY 1993 Appropriations Act Sec. 510): Will assistance preclude use of financing to finance the export of nuclear equipment, fuel, or technology? Yes

35. Repression of Population (FY 1993 Appropriations Act Sec. 511): Will assistance preclude use of financing for the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights? Yes

36. Publicity or Propaganda (FY 1993 Appropriations Act Sec. 516): Will assistance be used for publicity or propaganda purposes designed to support or defeat legislation pending before Congress, to influence in any way the outcome of a political election in the United States, or for any publicity or propaganda purposes not authorized by Congress? No

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37. **Marine Insurance** (FY 1993 Appropriations Act Sec. 560): Will any A.I.D. contract and solicitation, and subcontract entered into under such contract, include a clause requiring that U.S. marine insurance companies have a fair opportunity to bid for marine insurance when such insurance is necessary or appropriate? **Yes**

38. **Exchange for Prohibited Act** (FY 1993 Appropriations Act Sec. 565): Will any assistance be provided to any foreign government (including any instrumentality or agency thereof), foreign person, or United States person in exchange for that foreign government or person undertaking any action which is, if carried out by the United States Government, a United States official or employee, expressly prohibited by a provision of United States law? **No**

39. **Commitment of Funds** (FAA Sec. 635(h)): Does a contract or agreement entail a commitment for the expenditure of funds during a period in excess of 5 years from the date of the contract or agreement? **No**

40. **Impact on U.S. Jobs** (FY 1993 Appropriations Act, Sec. 599):

(a) Will any financial **No**

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incentive be provided to a business located in the U.S. for the purpose of inducing that business to relocate outside the U.S. in a manner that would likely reduce the number of U.S. employees of that business.

(b) Will assistance be provided for the purpose of establishing or developing an export processing zone or designated area in which the country's tax, tariff, labor, environment, and safety laws do not apply? If so, has the President determined and certified that such assistance is not likely to cause a loss of jobs within the U.S.?

No

(c) Will assistance be provided for a project or activity that contributes to the violation of internationally recognized workers rights, as defined in section 502(a)(4) of the Trade Act of 1974, of workers in the recipient country?

No

**B. CRITERIA APPLICABLE TO DEVELOPMENT ASSISTANCE ONLY**

1. **Agricultural Exports (Bumpers Amendment) (FY 1993 Appropriations Act Sec. 521(b), as interpreted by conference report for original enactment):** If assistance is for agricultural development activities (specifically, any testing or breeding

N/A

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feasibility study, variety improvement or introduction, consultancy, publication, conference, or training), are such activities: (1) specifically and principally designed to increase agricultural exports by the host country to a country other than the United States, where the export would lead to direct competition in that third country with exports of a similar commodity grown or produced in the United States, and can the activities reasonably be expected to cause substantial injury to U.S. exporters of a similar agricultural commodity; or (2) in support of research that is intended primarily to benefit U.S. producers?

2. Tied Aid Credits (FY 1993 Appropriations Act, Title II, under heading "Economic Support Fund"): Will DA funds be used for tied aid credits? N/A

3. Appropriate Technology (FAA Sec. 107): Is special emphasis placed on use of appropriate technology (defined as relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)? Yes

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

Activities will focus on rural community organizations and encourage cooperation between small farmers, local user groups, and government policy makers.

5. **Economic Development** (FAA Sec. 101(a)): Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?

Yes

6. **Special Development Emphases** (FAA Secs. 102(b), 113, 281(a)): Describe extent to which activity will:

(a) effectively involve the poor in development by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, dispersing investment from cities to small towns and rural areas, and insuring wide participation of the poor

Implementation of watershed activities will be accomplished through local user groups/small farmers.

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in the benefits of development on a sustained basis, using appropriate U.S. institutions;

(b) 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.

Local organizations will be empowered by TA and policy dialogue.

Implementation of watershed activities will be accomplished through local user groups/small farmers.

Special efforts will be made to include women in the local user groups.

N/A

7. Recipient Country Contribution (FAA Secs. 110, 124(d)): Will the recipient country provide at least 25 percent of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)?

Yes

8. Benefit to Poor Majority (FAA Sec. 128(b)): If the activity attempts to increase the institutional capabilities of private organizations or the government of the country, or if it attempts to

Yes

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stimulate scientific and technological research, has it been designed and will it be monitored to ensure that the ultimate beneficiaries are the poor majority?

9. Abortions (FAA Sec. 104(f); FY 1993 Appropriations Act, Title II, under heading "Population, DA," and Sec. 534):

a. Are any of the funds to be used for the performance of abortions as a method of family planning or to motivate or coerce any person to practice abortions? No

b. Are any of the funds to be used to pay for the performance of involuntary sterilization as a method of family planning or to coerce or provide any financial incentive to any person to undergo sterilizations? No

c. Are any of the funds to be made available to any organization or program which, as determined by the President, supports or participates in the management of a program of coercive abortion or involuntary sterilization? No

d. Will funds be made available only to voluntary family planning projects which offer, either directly or through

referral to, or information about access to, a broad range of family planning methods and services?

e. In awarding grants for natural family planning, will any applicant be discriminated against because of such applicant's religious or conscientious commitment to offer only natural family planning? N/A

f. Are any of the funds to be used to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilization as a means of family planning? No

g. Are any of the funds to be made available to any organization if the President certifies that the use of these funds by such organization would violate any of the above provisions related to abortions and involuntary sterilization? No

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

11. Disadvantaged Enterprises (FY 1993 Appropriations Act Sec. 563): What portion of the 35%

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funds will be available only for activities of economically and socially disadvantaged enterprises, historically black colleges and universities, colleges and universities having a student body in which more than 40 percent of the students are Hispanic Americans, and private and voluntary organizations which are controlled by individuals who are black Americans, Hispanic Americans, or Native Americans, or who are economically or socially disadvantaged (including women)?

12. **Biological Diversity** (FAA Sec. 119(g): Will the assistance: (a) support training and education efforts which improve the capacity of recipient countries to prevent loss of biological diversity; (b) be provided under a long-term agreement in which the recipient country agrees to protect ecosystems or other wildlife habitats; (c) support efforts to identify and survey ecosystems in recipient countries worthy of protection; or (d) by any direct or indirect means significantly degrade national parks or similar protected areas or introduce exotic plants or animals into such areas?

- a) Yes
- b) No
- c) Yes
- d) No

13. **Tropical Forests** (FAA Sec. 118; FY 1991

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Appropriations Act Sec. 533(c) as referenced in section 532(d) of the FY 1993 Appropriations Act):

a. **A.I.D. Regulation 16:** Yes  
Does the assistance comply with the environmental procedures set forth in A.I.D. Regulation 16?

b. **Conservation:** Yes  
Does the assistance place a high priority on conservation and sustainable management of tropical forests? Specifically, does the assistance, to the fullest extent feasible: (1) stress the importance of conserving and sustainably managing forest resources; (2) support activities 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; (3) support training programs, educational efforts, and the establishment or strengthening of institutions to improve forest management; (4) help end destructive slash-and-burn agriculture by supporting stable and productive farming practices; (5) help conserve forests which have not yet been degraded by helping to increase production on lands already cleared or degraded; (6)

conserve forested watersheds and rehabilitate those which have been deforested; (7) support training, research, and other actions which lead to sustainable and more environmentally sound practices for timber harvesting, removal, and processing; (8) support research to expand knowledge of tropical forests and identify alternatives which will prevent forest destruction, loss, or degradation; (9) conserve biological diversity in forest areas by supporting efforts to identify, establish, and maintain a representative network of protected tropical forest ecosystems on a worldwide basis, by making the establishment of protected areas a condition of support for activities involving forest clearance or degradation, and by helping to identify tropical forest ecosystems and species in need of protection and establish and maintain appropriate protected areas; (10) seek to increase the awareness of U.S. Government agencies and other donors of the immediate and long-term value of tropical forests; (11) utilize the resources and abilities of all relevant U.S. government agencies; (12) be based upon careful analysis of the alternatives available to achieve the best

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sustainable use of the land; and (13) take full account of the environmental impacts of the proposed activities on biological diversity?

c. **Forest degradation:**  
Will assistance be used for: (1) the procurement or use of logging equipment, unless an environmental assessment indicates that all timber harvesting operations involved will be conducted in an environmentally sound manner and that the proposed activity will produce positive economic benefits and sustainable forest management systems; (2) actions which will significantly degrade national parks or similar protected areas which contain tropical forests, or introduce exotic plants or animals into such areas; (3) activities which would result in the conversion of forest lands to the rearing of livestock; (4) the construction, upgrading, or maintenance of roads (including temporary haul roads for logging or other extractive industries) which pass through relatively undergraded forest lands; (5) the colonization of forest lands; or (6) the construction of dams or other water control structures which flood relatively undergraded forest lands, unless with

No

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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?

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

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

**14. Energy (FY 1991 Appropriations Act Sec. 533(c) as referenced in section 532(d) of the FY 1993 Appropriations Act):** **N/A**  
If assistance relates to energy, will such assistance focus on: (a) end-use energy efficiency, least-cost energy planning, and renewable energy resources, and (b) the key

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countries where assistance would have the greatest impact on reducing emissions from greenhouse gases?

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

N/A

**16. Deobligation/Reobligation (FY 1993 Appropriations Act Sec. 515):** If deob/reob authority is sought to be exercised in the provision of DA assistance, are the funds being obligated for the same general purpose, and for countries within the same region as originally obligated, and have the House and Senate Appropriations Committees been properly notified?

N/A

**17. Loans**

- a. **Repayment capacity (FAA Sec. 122(b)):** Information and conclusion on capacity of the country to repay the loan at a reasonable rate of interest. N/A
- b. **Long-range plans (FAA Sec. 122(b)):** Does the activity give reasonable promise of assisting long-range plans and programs designed to develop economic resources and increase productive capacities? N/A
- c. **Interest rate (FAA Sec. 122(b)):** If development loan is repayable in dollars, is interest rate at least 2 percent per annum during a grace period which is not to exceed ten years, and at least 3 percent per annum thereafter? N/A
- d. **Exports to United States (FAA Sec. 620(d)):** If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the recipient country to prevent export to the U.S. of more than 20 percent of the enterprise's annual production during the life of the loan, or has the requirement to enter into such an agreement been waived by the President because of a national security interest? N/A

18. **Development Objectives** (FAA Secs. 102(a), 111, 113, 281(a)): Extent to which activity will: (1) effectively involve the poor in development, by expanding access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (2) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions; (3) support the self-help efforts of developing countries; (4) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (5) utilize and encourage regional cooperation by developing countries?

See No. 6

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

a. **Rural poor and small farmers:** If assistance is

See No. 6

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

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

N/A

c. **Food security:** Describe extent to which activity increases national food security by improving food policies and management and by

N/A

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strengthening national food reserves, with particular concern for the needs of the poor, through measures encouraging domestic production, building national food reserves, expanding available storage facilities, reducing post harvest food losses, and improving food distribution.

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

N/A

21. **Education and Human Resources Development** (FAA Sec. 105): If assistance is being made available for education, public administration, or human resource development, describe (a) extent to which activity strengthens nonformal education, makes formal education more relevant, especially for rural families and urban poor, and strengthens

N/A

management capability of institutions enabling the poor to participate in development; and (b) extent to which assistance provides advanced education and training of people of developing countries in such disciplines as are required for planning and implementation of public and private development activities.

**22. Energy, Private Voluntary Organizations, and Selected Development Activities (FAA Sec. 106):** If assistance is being made available for energy, private voluntary organizations, and selected development problems, describe extent to which activity is:

N/A

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

b. concerned with technical cooperation and

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development, especially with U.S. private and voluntary, or regional and international development, organizations;

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

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

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

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

23. Capital Projects (Jobs Through Export Act of 1992, Secs. 303 and 306(d)): If assistance is being provided for a capital project, is the project developmentally sound and will the project measurably alleviate the worst manifestations of poverty or directly promote environmental safety and sustainability at the

N/A

community level?

C. CRITERIA APPLICABLE TO ECONOMIC SUPPORT FUNDS ONLY N/A

1. Economic and Political ability

(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?

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

3. Commodity Grants/Separate Accounts (FAA Sec. 609): If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made? (For FY 1993, this provision is superseded by the separate account requirements of FY 1993 Appropriations Act Sec. 571(a), see Sec. 571(a)(5).)

4. Generation and Use of Local Currencies (FAA Sec. 531(d)): Will ESF funds made available for commodity import programs or other program assistance

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be used to generate local currencies? If so, will at least 50 percent of such local currencies be available to support activities consistent with the objectives of FAA sections 103 through 106? (For FY 1993, this provision is superseded by the separate account requirements of FY 1993 Appropriations Act Sec. 571(a), see Sec. 571(a)(5).)

**5. Cash Transfer Requirements** (FY 1993 Appropriations Act, Title II, under heading "Economic Support Fund," and Sec. 571(b)). If assistance is in the form of a cash transfer:

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

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

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responsibilities of A.I.D. and that government to monitor and account for deposits and disbursements?

c. **U.S. Government use of local currencies:** Will all such local currencies also be made available to the U.S. government as the U.S. determines necessary for the requirements of the U.S. Government, or to carry out development assistance (including DFA) or ESF purposes?

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

6. **Capital Projects (Jobs Through Exports Act of 1992, Sec. 306, FY 1993 Appropriations Act, Sec. 595):** If assistance is being provided for a capital project, will the p r o j e c t b e developmentally-sound and sustainable, i.e., one that is (a) environmentally sustainable, (b) within the financial capacity of the government or recipient to maintain from its own resources, and (c) responsive to a significant development priority

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initiated by the country to which assistance is being provided. (Please note the definition of "capital project" contained in section 595 of the FY 1993 Appropriations Act.)

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**COMMUNITY NATURAL RESOURCE MANAGEMENT**

**PROJECT PAPER  
(520-0404)**

**ANNEX IX**

**MAGA REQUEST FOR ASSISTANCE**

**Office of Rural Development  
July 2, 1993**

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FILE 1287

MINISTERIO DE AGRICULTURA, GANADERIA Y ALIMENTACION

PALACIO NACIONAL

GUATEMALA, C. A.

8 de julio de 1993

Señor  
Terrence J. Brown  
Director USAID/Guatemala  
Presente.

Señor Director:

Me es grato dirigirme a usted, para confirmarle nuestro interés de asistencia financiera para el nuevo proyecto de Manejo Comunitario de los Recursos Naturales, el cual consideramos de gran beneficio para nuestro país.

Desde ya este Despacho ofrece la colaboración necesaria que conduzca a una rápida negociación del proyecto definitivo y a la oportuna y adecuada utilización de los recursos que la ejecución del proyecto requiera.

Sin otro particular, me suscribo de usted con muestras de consideración y estima,



ING. AGR. FERNANDO VARGAS N.  
VICEMINISTRO DE AGRICULTURA Y ALIMENTACION  
ENCARGADO DEL DESPACHO.

VAA/ldef.

USAID

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ACTION	
USED	RECIP
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VER	
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DUE DATE	
	7/16/93
ACTION TAKEN	
(in words)	
This letter will be included as qm	
in the CURM PP. 8.2	
2/9/93	

**COMMUNITY NATURAL RESOURCE MANAGEMENT**

**PROJECT PAPER  
(520-0404)**

**ANNEX X**

**NEW PROJECT DESCRIPTION CABLE**

**Office of Rural Development  
July 2, 1993**

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ACTION AID/1 INFO AMR DCM ECON A7AT/5

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VZCZCZT0163  
PP RUEHGT  
DE RUEHC #3399 2700253  
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FM SPCSSTATE WASHDC  
TO AMEMBASSY GUATEMALA PRIORITY 9785  
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27-JUL-92

FOR: 13:33  
ON: 1963R  
CERG: AID  
DIST: AID  
ADD:

AIDAC TOM DELANEY

F.O. 12755: N/A

TAGS:

SUBJECT: GUATEMALA -- COMMUNITY RESOURCE MANAGEMENT MPD

REF: GUATEMALA 25514

ACTION	
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DUE DATE	
7/23/92	
ACTION TAKEN	
(Date/initials)	

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D. DIR

NAN.  
File 520-0404  
27A 7/2

1. SUMMARY: A MEETING CHAIRED BY LAC/DR DEPUTY OFFICE DIRECTOR ELENA PRINZMAN WAS HELD ON JUNE 30, 1992 TO REVIEW A NEW PROJECT DESCRIPTION FOR USAID/GUATEMALA'S COMMUNITY RESOURCE MANAGEMENT PROJECT (520-0404). THE MISSION SUBMITTED THE REVISED MPD IN RESPONSE TO GUIDANCE FROM THE POD/ACTION PLAN REVIEW IN FEBRUARY, 1992 (REFTEL). PARTICIPANTS IN THE MEETING INCLUDED LAC/DR/T, LAC/DR/ED, CC/LAC AND LAC/DP/CAR. USAID/GUATEMALA WAS REPRESENTED BY MISSION DIRECTOR TERRY BROWN. THE RESULT OF THE MEETING WAS A DECISION TO DELEGATE AUTHORITY TO THE USAID/GUATEMALA MISSION DIRECTOR TO APPROVE THE PROJECT.

2. ISSUES

A. WORKING WITH NATIONAL LEVEL PUBLIC INSTITUTIONS: THE PROJECT INTENDS TO WORK MAINLY THROUGH LOCAL COMMUNITIES, MUNICIPALITIES, USER GROUPS, AND NON-GOVERNMENTAL ORGANIZATIONS (NGOs). GIVEN PAST DIFFICULTIES IN WORKING EFFECTIVELY WITH NATIONAL LEVEL

PUBLIC INSTITUTIONS IN RESOURCE MANAGEMENT, THE BUREAU AGREES THAT THE PROJECT'S APPROACH OFFERS THE BEST OPPORTUNITY FOR ACHIEVING BROAD-BASED SUSTAINABLE DEVELOPMENT.

B. LAND TENURE: IT IS DIFFICULT TO PROMOTE ENVIRONMENTALLY SUSTAINABLE RESOURCE MANAGEMENT BY FAMILIES AND COMMUNITIES IF THEY DON'T HAVE A VESTED LONG-TERM INTEREST IN THE PRODUCTIVITY OF THOSE RESOURCES. THUS LAND TENURE AND SECURITY OF LAND ACCESS IS AN IMPORTANT ISSUE DIRECTLY RELEVANT TO THIS PROJECT, BUT IS NOT DEALT WITH EXPLICITLY IN THE MPD. THE BUREAU URGES THE MISSION TO EXAMINE THIS ISSUE CAREFULLY DURING THE DEVELOPMENT OF THE PROJECT PAPER.

C. POLICY COMPONENT: THE MISSION PROPOSES TO WORK WITH VARIOUS PUBLIC AGRICULTURE AND NATURAL RESOURCE (ANR) INSTITUTIONS TO EFFECT IMPROVEMENTS IN THE FORMULATION AND

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IMPLEMENTATION OF NATURAL RESOURCE POLICY. GIVEN THE POTENTIAL DIFFICULTIES IN WORKING WITH NATIONAL LEVEL PUBLIC INSTITUTIONS MENTIONED ABOVE, THE BUREAU HAS DOUBTS ABOUT HOW THE PROJECT WILL BE ABLE TO ACHIEVE THE PROPOSED RESTRUCTURING, SIMPLIFYING AND REFOCUSING OF PUBLIC AND INSTITUTIONS. THE BUREAU AGREES WITH THE MISSION'S VIEWS THAT STREAMLINING AND RESTRUCTURING OF PUBLIC INSTITUTIONS SHOULD HAVE THE LOWEST PRIORITY OF THE THREE PROPOSED INTERVENTIONS IN THE POLICY COMPONENT. HOWEVER, THE SUCCESS OF THE COMMUNITY BASED EFFORTS DESCRIBED IN THE OTHER COMPONENTS ARE LIKELY TO BE STRONGLY AFFECTED BY POLICY ISSUES. FOR THIS REASON, THE BUREAU ENCOURAGES THE MISSION TO ADDRESS POLICY ISSUES LIKE STUMPAGE FEES, INPUT AND PESTICIDE PRICING, AND OTHER POTENTIALLY COUNTERPRODUCTIVE SUBSIDY AND TAX POLICIES, DURING PROJECT DESIGN. THE MISSION SHOULD EXPLORE THE POSSIBILITY OF USING A LOCAL NGO TO HELP ADVANCE THE POLICY AGENDA.

D. SCOPE OF PROJECT: THE BUREAU BELIEVES THE PROPOSED PROJECT IS VERY AMBITIOUS; EACH COMPONENT MIGHT BE A PROJECT IN ITSELF. WHILE THE BUREAU SUPPORTS THE MISSION'S COMPREHENSIVE APPROACH, AN ISSUE REMAINS AS TO HOW A PROJECT OF THIS SCOPE CAN BE EFFECTIVELY MANAGED GIVEN LIMITED MISSION MANAGEMENT RESOURCES. THERE ARE ALSO CONCERNS REGARDING HOW MUCH THE PROJECT WILL BE ABLE TO ACCOMPLISH WORKING WITH THE PLETHORA OF INSTITUTIONS PROPOSED. THESE ISSUES NEED TO BE ADDRESSED DURING PROJECT DESIGN. KANTER

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**COMMUNITY NATURAL RESOURCE MANAGEMENT**

**PROJECT PAPER  
(520-0404)**

**ANNEX XI**

**PROJECT IDENTIFICATION DETERMINATION**

**Office of Rural Development  
July 2, 1993**

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ACTION MEMORANDUM FOR THE MISSION DIRECTOR

Date: December 22, 1992

THROUGH: Stephen Wingert, Deputy Director  
FROM: Elizabeth Warfield, C/PDSO  
SUBJECT: Community Natural Resources Management (520-0404) Draft PID

**ACTION REQUESTED:** That you determine not to require an approved Project Identification Document for subject Project, and authorize PP development based on the draft PID and subsequent reviews.

**DISCUSSION:** The draft PID for the Community Natural Resources Management Project (CNRM) was reviewed on 13 and 19 October. Based on these and subsequent meetings, it was decided that, while the draft PID provides a valid strategy for short to medium-term A.I.D. intervention in the area of Natural Resources Management (NRM), the institutional and policy conditions necessary for the successful implementation of the activity package outlined in the draft PID do not now exist. Within this context, the Mission will proceed to design an interim project (with an LOP of approximately four years and a lower funding level than previously proposed) that will expand on successful A.I.D. NRM activities, and lay the groundwork for future, broader A.I.D. support for community-based natural resources management. PP design will proceed based on the following decisions/guidance.

**Project Committee:** A Project Committee consisting of Tom Delaney, PDSO, Paul Novick, ORD, Alfred Nakatsuma, ORD, Edin Barrientos, ORD, Blair Cooper, ORD, Victor Miron, CONT and Dina Way, RCO has been formed. This committee will be responsible for drafting SOWs for design assistance, reviewing proposals, coordinating design activities, reviewing and approving any contracted studies, organizing and drafting sections of the PP, and ensuring timely project authorization and obligations.

**Funding Levels:** Appropriate funding levels and time-frame will be determined during PP design. It is now anticipated that the Project will have a 4-year, \$5-8 million LOP

**Policy Component:** The policy agenda outlined in the PID will be refined and the policy linkages between this Project and the Highlands Agricultural Development (HAD) and Maya Biosphere Projects will be defined in the PP.

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Project Activities: Project design will focus on the following activities: 1) integrated watershed management (a continuation/expansion of CARE activities under HAD); 2) FEAT private sector extension services, and 3) policy research training and implementation. The Project will also include a Monitoring and Evaluation Component. It is anticipated that these activities will be obligated through a combination of HB 3 and HB 13 grants.

Land Tenure: While it is not expected that this Project can address global land tenure problems, the issue will be dealt with on a site-specific basis, and may be considered in the selection of beneficiary communities.

PP Design: PIO/T(s) for design assistance will be approved and (if necessary) submitted to the RCO by 31 December 1993. This assistance may be provided through AID/W buy-in(s). It is anticipated that the PP design process will begin by February and take approximately 6-8 weeks. Every effort will be made to speed up this process wherever possible. A Mission review of the Project Paper should take place prior to April 30, 1993.

Liaison with GOG: Given the need to coordinate activities with the GOG and the continued importance of policy reforms, discussions should be held with SEGEPLAN, the Ministry of Agriculture and CONAMA as soon as possible. These discussions should be with the highest levels of each of these organizations.

Sustainability: PP Analysis of activities to be continued/extended from the HAD Project will emphasize their potential for sustainability and replicability.

AUTHORITY: Delegation of Authority No. 752 (as revised September 14, 1992) authorizes principal officers of LAC field posts to determine whether a PID or PID-equivalent document for a project should be prepared.

RECOMMENDATION: That you sign below approving this memorandum, thereby authorizing further PP development without an approved PID.

Approved [Signature]  
Disapproved \_\_\_\_\_  
Date 12/24/92

Attachment: Community Natural Resources Management Draft PID

Drafter: T. Delaney, PDSO [Signature] Date 12/21/92  
Clearances: P. Novick, ORD [Signature] Date 12/21/92

PUBLIC\DOCS\PIDR\REVIEW

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