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Draft project paper design for the community natural resources management project (CNRM)

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LIST OF ACRONYMS

AID	U.S. Agency for International Development
ASIES	Asociación de Investigación y Estudios Sociales (Association of Research and Social Studies)
CIEN	Centro de Investigaciones Economicas Nacionales (National Economic Study Center)
CNRM	Community Natural Resources Management Project
COMPDA	Watershed Management Component of the Highland Agricultural Development Project
CONAMA	Comisión Nacional de Medio Ambiente (National Environmental Commission)
CONAP	Comisión Nacional de Areas Protegidas (National Council on Protected Areas)
DIGEBOS	Dirección General de Bosques y Vida Silvestre (General Directorate of Forests and Wildlife)
DIGESA	Dirección General de Servicios Agrícolas (General Directorate of Agricultural Services)
EIA	Environmental Impact Assessment
FEAT	Private Sector Agricultural Extension Project (*Fondo Especial de Asistencia Técnica*)
FONAPAZ	Fondo Nacional para la Paz
FPR	Farmer Participatory Research
GOG	Government of Guatemala
GPS	Guatemalan Peace Scholarship
HAD	Highland Agricultural Development Project(s)
Highlands	Highlands in the Central and Western regions, whose population is primarily Indian
Indigenas	Men and women who identify as "Indian"
IWMC	Integrated Watershed Management Component
Ladinos	Rural residents who are not "*Indigenas*"
M&E	Monitoring and Evaluation
MAGA	Ministry of Agriculture
MAYAREMA	Maya Biosphere Project
MICUENCA	Integrated Micro-Watershed Management Component
NGO	Non-governmental Organization
NRM	Natural Resource Management
NTAE	Non-traditional Agricultural Exports
ODDT	Office of Democratic Development and Training
Oriente	Eastern region of Guatemala, bordering on El Salvador and Honduras, whose population is primarily *Ladino* (*Mestizo*)
PAFG	Forestry Action Plan for Guatemala

PARAGRO	Policy Analysis Group of Ministry of Agriculture
PCD	Participatory Community Diagnostic
PID	Project Identification Document
PRA	Participatory Rural Appraisal
ROCAP	Regional Office for Central American and Panama of AID
SFDP	Small Farmer Diversification Project
SO	Strategic Objective
TA	Technical Assistance
TAC	Technical Advisory Committee of CNRM
USAID	United States Agency for International Development
WID	Women in Development

SECTION IIIA: PROJECT RATIONALE

A1. Project Setting

From the perspective of natural resources management, Guatemala today is a land of stark contrasts. Increasing population pressure driven by an annual growth rate approaching three percent in a country where most people must still find sustenance and livelihood in a land characterized by the fragile resource base of broken topography and highly sensitive lowland tropical ecosystems. A distorted land tenure situation contributes significantly to the current environmentally destructive land-use equation: large holdings concentrated in the hands of the few engaged in extensive agriculture and livestock practices on the better lands; *mini-fundio* predominantly geared to subsistence agriculture with basic grain crops on the steep slopes of the highlands; and, the widening scourge of slash and burn agriculture on fragile soils of the lowland tropics.

The overall effect is dramatically and exponentially degrading the natural resource base on which the destiny of the nation and its people must be built. Erosion, loss of vegetative cover, increased run-off, decreased infiltration, sedimentation, destruction of natural areas and loss of biological diversity are increasingly foreclosing some of the most important development options for the future.

The impacts on the hydrologic regime are undermining the potential for irrigation and hydroelectric energy generation-- both of which must be harnessed to modernize the productive sector. Water and energy linked to industrial development must eventually provide the off-farm employment opportunities which will get people out of the ecologically fragile areas.

Sustainable agriculture and forestry production systems on lands suited to these purposes will enable people to maintain a viable and dignified lifestyle in the rural sector. They will also generate the raw materials (food and forest products) for an expanding and diversified industrial and export base. This will in turn slow down the exodus to the capital and other over-taxed urban areas (there are some towns that could absorb more people) already palpably suffering from the litany of ills associated with undirected urban expansion-- water and energy shortages, environmental pollution, lack of adequate housing, crime and traffic. It will also help to slow down the migration to the lowland tropics of the Peten where spontaneous colonization is already wreaking havoc in this ecologically sensitive area.

Despite countless constraints (not the least of which is the insatiable wave of violence from a protracted political and ideological struggle which has spurred significant violations of human rights and undermined efforts on all fronts), there are reasons for optimism. The considerable projectized experience with natural resources management interventions such as tree-planting, and more recently soil and water conservation and agroforestry over the past 15 years, provides a reasonable technological baseline for future sector development. Small-scale irrigation schemes (*mini-riego*) have been installed in many places and tangibly contributed to the well-being of the small-holders involved. It is important to note, however,

that this promising agriculture sector achievement is now being compromised by the negative effects of agrochemical use and the continuing degradation of watershed stability. Soil and water resources employed in agriculture are, nevertheless, increasingly being seen at many levels as important, if not fundamental, essentials to the national natural resources and environmental strategy which was previously focussed in a more limited way on forestry and protected areas.

There is also widening recognition that creating the policy, legislative and institutional framework to allow rural people to manage their natural resources in sustainable ways may be just as important as further technological gains. Natural resources policy in Guatemala is presently expressed largely through a series of sub-sector laws, for example, the Protected Areas Law and the Forestry Law, the draft Water Resources Law and the draft Soils Law, all of the latter three now working their way through the National Congress. These laws have been developed without a clear understanding of the long-term economic consequences-- winners and losers-- and often without consideration of the impact of one set of policies (laws), for example, as related to agriculture, on related sectors (forests and water). They are also increasingly and disturbingly normative in nature, seeking to impose natural resources management and conservation through restrictions and penalties without the attendant incentives for sector development. This normative approach flies in the face of the persistent institutional inability of the GOG agencies charged with their implementation.

Natural resources management as can be seen in many other countries, requires reasonable levels of both consensus and popular participation which in turn can only be fostered, developed and achieved through collective efforts and community organization. The present prospects for peace and the climate for political change should enable accelerated progress through community organization and action.

The applicability of these natural resources activities and their acceptance by rural inhabitants has underscored the importance of sound land-use and resources management as the basis for sustainable socio-economic development. In Guatemala, the potential of and the need for natural resources management have converged.

A2. Government of Guatemala Plans and Sector Activities

In the last eight years, the Government of Guatemala (GOG) has demonstrated a much higher priority for natural resources management and sustainable agriculture. During the previous administration, the National Environmental Commission (CONAMA) and the National Council on Protected Areas (CONAP) were established and joined with the Ministry of Agriculture (MAGA) to enhance GOG commitment and capability for addressing natural resources policy, strategy and programs. These new institutions were attached directly to the Office of the Presidency to give them higher political profile and clout. While the mandates of these entities are different, their natural resources priorities (as articulated in annual planning documents and position papers in international environmental fora) encompass three major themes:

- Effective and sustainable natural resource management must be "balanced," emphasizing both increased production and resources conservation.

- Greater reliance should be placed on decentralizing and privatizing the management of natural resources.

- Successfully addressing the country's chronic resource degradation problems will require focusing increased attention on management of both watersheds and protected areas.

In its (....the diagnostico document ???? - source??? included in our briefing books...), the Government of Guatemala unequivocally expressed its concerns regarding the situation in the highland areas of the Altiplano where degradation continues to undercut the long-term sustainability of small farmer agriculture and thus threatens the food security of the nation. Also of note is the recommendation in this same document calling for the rationalization and/or elimination of the regulations and reform of the policies which are obstacles to the efficient commercial operations to satisfy the nation's demand for fuelwood -- its predominant domestic energy source. The..... also provided a very forthright analysis of the resource management problems in the Peten, highlighting: the relationship between out-migration from other areas of the country with the uncontrolled colonization and resultant destruction of the vegetative cover, unsustainable timber extraction and contamination from the petroleum exploration.

The GOG also joined forces with the donor community (including significant support from USAID) interested in natural resources to produce, through a concerted multi-year effort of analysis and dialogue, the Forestry Action Plan for Guatemala (PAFG). The following principles enunciated in the PAFG, albeit with emphasis on the forestry sector, represents a clear and forward-looking statement on the management of natural resources in the country:

- increasing the productivity of the forests as well as the goods and services it provides to Guatemalan society will constitute the basic principle for their conservation;

- the need for a more concrete identification, by both the public and private sectors, of the importance of the forests in protecting soil, water and biodiversity-- the basic natural resources on which the economy of the country rests;

- the necessity for promoting sustainable management of the forest resources by increasing the understanding of their real value in terms of both goods (the production function) and services (the protection function);

- the participation of the rural communities in both the activities and benefits of sustainable management;

- the conviction that the public sector should promote and orient sector strategy, improve the technical management and provide a regulatory environment conducive to stimulate legal private sector management;

- the need to promote the participation of NGOs, particularly as concerns working with marginalized communities; and,

- the coordinated participation of both the public and private sector, seeking flexibility and efficiency in the sector development strategy and in clarifying the established regulatory framework.

The PAFG has also specifically identified the periodic review of the impacts of sector policy as part of its priority action agenda for the remainder of the century and is actively seeking donor support for this purpose and a wide range of additional and specific natural resources management programs and activities.

Despite these achievements, there appears to have been a certain erosion of both the resolve and support within the higher levels of the GOG for dealing with the country's pressing environmental challenges and opportunities. In part, this uncertainty can be attributed to the policy and regulatory framework and the internal debate about how to proceed. Concerns are still openly expressed about the proliferation of government bureaucracy, poorly articulated and sometimes contradictory laws and regulations, and the attendant disincentives this situation engenders for private sector development of natural resources management. These uncertainties have without doubt contributed to the continuing chronic weaknesses (lack of adequately trained staff, poor budgetary support, and uncoordinated intra-sector approaches and programs) among the GOG institutions responsible for field implementation of the natural resources management policy and strategy.

A3. USAID Involvement in Natural Resources Sector Development Activities

For more than a decade now, USAID/Guatemala has supported natural resources management as part of its agriculture sector development strategy and overall program. Experience with natural resources management activities has contributed to the evolution of the USAID program in Guatemala. With the advent of the new AID program focussed strategic planning system, Sustainable Natural Resources Management, and more recently, the more focused Improved Management of the Natural Resources Base, gained prominence as one of the five strategic objectives (SO) of the USAID/Guatemala Action Plan.

The other strategic objectives, which it should be noted offer high complementarity with the NRM SO, are: health, basic education, commerce and private sector development, and the exercise of inalienable rights. USAID/Guatemala expects its Action Program to become even more focussed in the near-term, with emphasis being given to three specific strategic objectives where AID has competitive advantage:

population, environment, and democratic institutions. The Community Natural Resources Management Project will be part of the transition to this more focussed orientation of the USAID program in Guatemala.

The **Small Farmer Diversification Project (SFDP)** (520-0255) begun in 1981 sought to improve the well-being of the rural population in the Western Highlands of the country through improved small farm management and in particular by promoting a shift away from basic grain crops to agricultural commodities saleable on both the domestic and international markets. A key and apparently quite successful output of SFDP was the widening use of small-scale irrigation which has substantially contributed to raising the productivity and returns to small holder farming.

Building on the achievements of SFDP, USAID funded the **Highlands Agricultural Development Project (HAD)** (520-0274) beginning in 1983. In addition to continuing the emphasis on agricultural improvement, the HAD Project was also intended to address some of the problems identified as critical for consolidating the farm diversification gains, including: more attention to conservation and sound agronomic practices, credit needs and mechanisms, and marketing constraints.

In 1988, a five year **Phase II** Amendment of the **HAD Project** was approved to continue work on increasing farm productivity and rural incomes. As part of its efforts, and conditioned on the recognition of the limited amounts of prime agricultural land and the direct relationship between irrigation capability and watershed stability, the HAD II Project added a watershed management component, building on previously promising agroforestry and conservation activities begun under HAD I. Phase II of HAD was approved subject to the performance of an Environmental Impact Assessment (EIA) which was completed in November 1988. The EIA recommended specific mitigative measures aimed at controlling the negative effects of pesticide use and for ensuring the sustainability of agricultural yields on irrigated areas.

Several other projects in USAID's portfolio were also targeted at fostering greater capability for a more modern and commercially oriented (in contrast with the subsistence orientation) agriculture sector. These included: the Agribusiness Development Project (520-0276), the Cooperative Strengthening Project (520-0286), and the Private Enterprise Development Project (520-0341).

In 1990, **Phase III of the HAD Project** was authorized, and under its auspices, a grant to CARE/Guatemala was approved with the specific intention of developing pilot integrated watershed management models, in many cases, linked directly to small-scale irrigation schemes developed previously. CARE was chosen to carry out these activities because of its proven track record in-country with agroforestry, tree-planting and natural resources management aimed at small holder farmers.

As mentioned above, these HAD project amendments also coincided with a substantive rethinking of USAID/Guatemala's strategic objectives and reflected clearly increasing Agency and LAC Bureau attention to the importance of natural resources management as a key element for sustainable development.

In 1990, USAID/Guatemala also started up the **Maya Biosphere Project** (520-0395), known as **Mayarema**, to specifically address both national development needs and opportunities and to respond to the AID-wide, Congressional mandates (Sections 118/119 of the Foreign Assistance Act) related to reducing the rate of global tropical deforestation and to controlling the loss of biological diversity.

The Maya Biosphere Reserve, located in Guatemala's remote northeastern Peten Department, is part and parcel of the largest contiguous block of intact tropical forest in Central America. This area, however, is experiencing severe deforestation and destruction resulting from high population growth. Pervasive and uncontrolled colonization with the massive onslaught of slash and burn agriculture is accompanied by widespread inappropriate forest exploitation -- high-grading of valuable hardwood species, the spread of penetration roads and a total lack of forest management. The Maya Biosphere Project is aimed at promoting more environmentally sound management of the full complement of the natural resources within the 1.8 million hectares of the Reserve through the strengthening of public and private ENR institutions and the development of community participation.

In early 1991, USAID/Guatemala embarked on an analytical and planning exercise intended to be the vehicle for addressing, over the long-term, the full range of program results necessary deemed essential to the achievement of its NRM Strategic Objective:

- land under improved management;
- institutions implementing environmentally sound plans and activities;
- policy reform and implementation; and
- people employing sustainable land-use practices.

With the assistance of the LAC Bureau and the DESFIL Project, **A Concept Paper for Sustainable Natural Resources Management in Guatemala** was prepared in March 1991. This comprehensive overview of sector needs and opportunities gave rise to the development of a Project Identification Document (PID) for the **Community Natural Resources Management Project (CNRM)**.

Although the CNRM Project was initially conceived as a medium term (seven-year LOP) effort, a series of circumstances intervened and altered the Mission's perception of the feasibility of such a project. These circumstances included:

- start-up delays associated with the new watershed management (COMPDA) and private sector agricultural extension (FEAT) components of the HAD III Project which had been intended to provide sound operational field experience on which to proceed;

- a recognition that the policy reform initiatives were both complex and highly political and that the institutional framework and process for addressing policy concerns needed significant strengthening before more ambitious objectives could be targeted;

- that the current GOG support had slightly eroded with the emerging national understanding that the progressive pronouncements of the previous government would be more difficult to implement than originally thought;

- that the decentralization initiatives considered vital to achieving the strategic objective would first require institution-building and more operational experience at the departmental and municipal levels; and,

- that the ability to promote popular participation and community organization as key approaches to successful NRM in the Highlands were much dependent on the process of peace and reconciliation in the country.

Accordingly, a decision was made, with the concurrence of AID/Washington, to proceed with the design and preparation of the present project-- an interim Community Natural Resources Management Project aimed at further strengthening the basis for long-term USAID support for natural resources management in Guatemala.

Despite its interim nature, this project is still fully consistent with the Mission's NRM Strategic Objective: Improved Management of the Natural Resource Base. Its design and preparation have specifically addressed the achievement of the strategic performance indicators (mentioned above) and in particular, the refined policy agenda developed by the Mission as part of its Action Plan, which is as follows:

- **Creating and applying 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.

- **Improving legislation and institutions that promote more effective NRM**, by

  - modifications to the Protected Areas and Forestry Laws to define clearer institutional mandates and responsibilities in managing natural resources.

A4. Problem Statement

People who live in poverty with insufficient means to access food, fuel or income, will do whatever is necessary to survive in the short run, even if the result is destruction of their natural resources. Consequently, this finite resource base is being depleted at an alarming rate in Guatemala. For example, deforestation has accelerated over the past decade from 60,000 to 135,000 hectares/year according to

data from Guatemala's Tropical Forestry Action Plan. This is principally a result of the population's need for new agricultural land. The continuing loss of forest and vegetative cover is having significant impact on environmental stability, particularly as concerns highland watersheds and biodiversity in the lowland tropics of the Peten. Because of inappropriate agricultural practices, soil erosion rates in the highlands are estimated to range between 5 and 35 tons per hectare annually. There is concern that erosion, together with increasing deforestation and agrochemical mismanagement are likely to cause irreversible declines in agricultural productivity, quantitative and qualitative losses in water supply and the loss of biodiversity.

As is evident, there are an array of serious resource management needs and opportunities facing Guatemala today. The USAID-sponsored NRM Concept Paper concluded that this range of issues can be synthesized into one overall and focused problem statement, as follows: **the present unsustainable use of natural resources is seriously jeopardizing the country's long-term economic prospects**.

For several decades now, this perceived problem has been addressed in a variety of ways-- in the early years, almost exclusively through forestry sector interventions, primarily reforestation, but of late, also including more attention to soil conservation and even more recently, integrated pest management-- usually as part of projects primarily oriented toward increased agricultural production. These interventions have had varying degrees of success, on a limited scale and despite their promise have as yet to result in a more comprehensive development model that could be replicated on a more widespread basis. This is in part because these projects were not designed to address the fundamental, underlying causes of the natural resource management problem, which in Guatemala are:

- rapid population growth
- inequitable land distribution
- inadequate policy and their implementation
- weak natural resources institutions
- lack of education and awareness
- limited local community participation in the decision-making process of development activities

The intent of the Community Natural Resources Management Project is to make a more comprehensive attempt to address the problem situation, building on past technological successes while adding important elements of work in the institutional (at the community and sub-national levels) and policy arenas (starting with issues emanating from the field experience of past projects). This more integrated approach is essential if long-term and sustainable progress is to be made in arresting the trends of rapid resource destruction in the country.

A5. Project Goal and Purpose

The **Project Goal** is as follows: to improve the long-term economic well-being of Guatemala's population through the rational management of natural resources.

The **Project Purpose** is as follows: to develop and replicate sustainable, community-based natural resources management capabilities and activities in key watersheds.

SECTION IIIB: PROJECT DESCRIPTION

B1. Overall Project Strategy

Overwhelming documented experience and evidence from field projects show that natural resource management is the long-term key to sustainable rural economic development in Guatemala. This evidence also shows that successful natural resources management depends upon the right policy framework, human and institutional capacity, and, most of all, the full support and participation of the people who use the resources.

With this in mind, the CNRM Project will be focused on people and communities who are using the resources and contributing to the degradation of the environment. These communities will be the primary actors in implementing the Project's watershed management activities. They in turn will be supported financially, technically, and administratively by NGOs, municipalities, public line agencies, and local interest groups.

At another level, but directly linked to the needs perceived in the field, attention and resources will be directed at strengthening the national capacity for analyzing and reforming the policy infrastructure surrounding natural resources management in Guatemala. Significant project resources will also be devoted to monitoring and evaluation, in order to provide a structured linkage between the watershed and policy components, and to ensure that the project is moving forward towards achieving its immediate objectives. Demonstrated initiative and capacity and counterpart resources will be required of all participating communities and institutions.

The major activity areas of the CNRM Project, i.e., the watershed management component, the policy component, and the monitoring and evaluation activities have been specifically chosen to ensure progress on the various critical fronts essential to achieving the project goal and purpose.

The **Watershed Management Component** will continue to consolidate the gains made under the HAD III Project in assisting rural people to identify and implement a wider range of appropriate land-use technologies (sustainable agriculture, soil and water conservation, agro-forestry, fruit tree planting, forest tree planting, and forestry management) more compatible with the resource conditions of the Highlands. Building on past technological experience, it will also adopt more intensive community development and planning structures at the local level in order to better broker the understandings required to address the full array of challenges and opportunities for watershed management.

Community participation in the diagnosis of needs and in making choices will provide the rationale for assigning action priorities, resources and responsibilities for the project. In many cases, sustainable

watershed management can only be achieved if there is a high level of community participation and reasonable consensus. A farmer's willingness to accept production tradeoffs, for example, by using a selective forest management system instead of clear-cutting, for both his or her own benefit but also to protect watershed stability, and thus benefit those involved in *mini-riego*, should not be undermined by others poaching timber or being careless with fire. The intention is also to utilize the vehicle of an organized community to provide field-informed inputs into the policy component thus ensuring that it is addressing real, near-term constraints.

The **Policy Component** is intended to accelerate the implementation of promising technological interventions by releasing them from the constraints imposed by the NRM policy context in which they operate. It will attempt to rationalize the present policy apparatus by beginning to systematically address policy constraints born of field experience. It will provide a focal point for debate and dialogue and added institutional and analytical capability to provide decision-makers with better documented policy options. By ventilating policy issues in public, it will further legitimize the policy choices which today often seem to have been adopted in response to special interests or incomplete analysis.

The **Monitoring and Evaluation Activities** are of particular importance in a project attempting to address more "process-oriented" development objectives such as enhancing participation, community organization or policy analysis, dialogue and reform. The inclusion of sector and project objectives related to popular participation and community organization adds an element of heterogeneity previously unknown and little tested in the more narrowly targeted NRM strategies and projects of the past. Getting people involved and brokering their wide-ranging views of their needs and aspirations necessitates adding a degree of flexibility to both project conception and implementation. A sound and effective monitoring and evaluation system is needed so as to ensure that this flexibility does not become too ad hoc and stifle the efforts to detect cause and effect, make course corrections in project implementation and move forward toward reaching project objectives.

Although each of these activity areas can and will be implemented separately, the combination of their complementarities will greatly increase the chances for replicability of NRM activities -- a first and fundamental step towards sustainability.

B2. Integrated Watershed Management Component

B2a. Introduction

This component of the Project is primarily intended to consolidate and improve the watershed management activities funded during the last two years by the Highland Agricultural Development Project Phase III Amendment. The activities to-date have been carried out by DIGEBOS, Peace Corps and CARE/Guatemala, with funding from USAID provided through a Cooperative Agreement with CARE. Although these watershed management activities were originally conceived as a five year effort, funding from USAID will run out at the HAD Project PACD in September, 1993. USAID will sign another Cooperative Agreement with CARE before that time in order to ensure no break in the

provision of services and field activities. Continuing support from the Peace Corps is being sought and is expected to be agreed.

The choice of CARE in conjunction with its GOG partner implementing institutions -- DIGEBOS, and under this project, DIGESA, was and continues to be based on an excellent track record and predominant capability with field projects in Guatemala related to natural resources management. CARE has more than 15 years of project experience in forestry, soil conservation, and more recently has pioneered much of the agroforestry work in-country. USAID has provided funding for a number of these projects. Although a final evaluation of the HAD Project to be carried out in July 1993 may add additional specific recommendations related to the future conduct of watershed management under this component, CARE and USAID have already identified a mutually agreed set of operational principles for the design and implementation of this component; they include:

- continued reasoned expansion of the range of activities towards a more integrated approach to watershed management, to include technical assistance and support to the people of the watersheds for the implementation of more sustainable and productive land-use technologies appropriate to the slope and soil conditions of their lands;

- the integrated approach must be guided by careful planning to identify clear priority targets of need and opportunity which offer the best chance for both impact (effectiveness) and efficiency (cost/benefit considerations at both the macro and micro levels);

- relatively simplified packages of watershed specific technological interventions identified based on a brokered participatory set of priorities;

- community organization aimed at achieving reasonable local consensus and higher levels of participation among the watershed inhabitants;

- concerted efforts to involve local NGOs, municipalities, and community organizations in watershed planning, decision-making and project implementation at the local level;

- arrangements for the active involvement of the local stakeholders through the vehicle of community organizations in the policy formulation and review process related to watershed and natural resources management;

- continued emphasis on addressing the needs and opportunities for sustainable agriculture and natural resources management among those segments of the watershed population (both men and women) most vulnerable and likely to cause degradation;

- the need to confirm the environmental soundness of project activities, with emphasis on agrochemical use but also including the match of technological interventions to the inherent land capabilities in the watersheds;

- a sound human and natural resources information and data baseline and the capacity to use it as an analytical tool, as part of the planning process and for the purposes of monitoring and evaluation;

- greater involvement, commitment and coordination between CARE, DIGEBOS, and DIGESA centered around clear project objectives and strategy and simplified operational plans which facilitate replication, genuine popular participation and the achievement of stated institution building objectives and benchmarks;

- continuing emphasis on human resources development, with training for staff at all levels and for extensionists, promoters and the participants; and,

- good articulation with projects and activities in other sectors (health, education and democratic initiatives) wherein the organizational development efforts at the community level will allow them to more efficiently access the services available from these other projects and government services.

These principles are currently under discussion between CARE and its GOG partners as part of the preparation of a proposal to USAID to carry out the implementation of the watershed component of the Community Natural Resources Management Project.

B2b. Immediate Objectives for the Watershed Component

The basic rationale behind the decision to include this integrated watershed management component in the CNRM Project is to continue the promising development work begun under the HAD Project. It should therefore not be surprising that the immediate objectives of the component continue to reflect the quest of a purpose common to the two projects-- the development of sustainable community-based natural resources management capabilities and activities.

Thus the **primary objective** of this component is **to increase the productivity and with it the socio-economic well-being, using sustainable agriculture and NRM technologies, of the people** (up to 4500 households) resident in the selected pilot watersheds (up to 30 watersheds).

This primary objective will best be accomplished by pursuing the **secondary objective** of **developing a working community-based, participatory watershed planning and improvement model**, which will also serve as a guide for replicating the approach elsewhere in the country.

B2c. Site Selection

Here again, logically, the starting point for this component will be the present 20 watersheds (see Figure___) in which the HAD-financed watershed activities have been carried out. As part of the final evaluation of the HAD Project, an overall assessment of the progress made in each of the watersheds will be made. It is foreseen that project support for certain of these watersheds may be withdrawn because of lack of progress for various reasons-- related to community interest and participation or the inherent resources conditions or limitations of the area.

The selection of new watersheds, if any, to be included in the CNRM Project activities will follow these criteria:

- ease of access and high visibility in order to favor the demonstration effect;
- watersheds adjacent to existing pilot watersheds whose addition will contribute to the stabilization of a larger contiguous area; or,
- watersheds known to require immediate attention because conditions therein are such that they are experiencing significant out-migration to more ecologically sensitive areas of the country (e.g., the Peten Region).

In considering site selection, the implementing institutions (CARE, DIGEBOS, DIGESA, and Peace Corps) will also assess the potential for increasing their efforts and support in each watershed so as to be able to include larger numbers of participants per watershed and a wider array of innovative sustainable agriculture and natural resources management interventions. Community organization and genuine participation are considered keys to facilitating the multiplier effect of the project's promotional, educational and extension activities.

The present percentage of participants in each watershed (ranging from 10% to 40%)[1] should be increased to reach a threshold of impact adequate to ensure watershed stability over the longer-term. The

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[1] These figures are taken from the Watershed Diagnosis files and additional information furnished to the project paper team by CARE which provide a range of information on the conditions of the pilot watersheds (both agro-ecological and socio-economic) and on popular participation in the project (for more information of this nature, see the Social Analysis, Annex iv. to this project paper).

Percent participation was calculated by multiplying the number of participants by 6 to include each participant as the representative of a household and then dividing by the total population. These calculations do not, however, reveal the actual levels of participation.

majority of the achievements in terms of areas treated under the present project are related to the restoration of vegetative cover -- mainly tree-planting in either small woodlots to rehabilitate denuded areas or in simple agroforestry configurations. The potential for stabilizing the watersheds will only be achieved if more attention is given to sustainable agriculture and soil and water conservation interventions.

Successful implementation of a range of sustainable agriculture and natural resources management activities by a core group within a given watershed is expected to induce others to join and copy the efforts of their peers.

The scaled expansion of the component activities into new pilot watersheds must be conditioned by a careful assessment of the success -- in terms of both participation, community development organization and development as well as area treated and production gains. It will be preferable to secure locally driven working models of watershed management in the initial watersheds before moving on to others. The achievement of a viable model, as specified above, is an immediate objective of this component. The monitoring and evaluation activities (see discussion below) will be specifically designed and structured to provide the information essential to rendering a judgement as to whether this objective has been achieved.

B2d. Component Activities

The activities to be undertaken under the Integrated Watershed Management Component of this project must be seen as and acted upon with a "process" rather than an "output" orientation. The "process orientation" is characterized by the completion of a series of steps or sub-component activity areas which build the community understanding, consensus and capability for watershed stability improvement. The design of these activities is intended to build upon the experiences under the HAD Phase III, to maintain the present rhythm of technology transfer and area treatment but to incrementally and substantially increase both the level of participation and impact in the pilot watersheds through a consolidation and revamping of the overall approach.

In order to maintain the present momentum of project activities and the engagement of the local people already involved, this design contemplates **two parallel but converging tracks**. On the one hand, project personnel will continue to carry out the present approach (with the addition of inputs and participation from both DIGESA and FEAT) of watershed management extension in the on-going watersheds. During a mobilization phase for this project, however, CARE and its prime partners will be engaged in developing the Community Organization and Diagnosis and Watershed Management Planning approaches which will constitute the detailed implementation planning for the sub-component activity areas described below.

The full array of the sub-component activity areas, including the two mentioned immediately above, will be as follows:

B2e. Community Organization, Diagnosis and Training

The activities to be undertaken under this sub-component are intended to provide the structure essential to enhancing genuine local participation, establishing a medium for communications between participants and project personnel, and a framework, where necessary, for collective decision-making related to project support for watershed management initiatives. It will also serve to improve the understanding of the social and economic circumstances which affect how and why people use, and often abuse, their land and natural resources -- a fundamentally important dimension of the watershed management model.

As this more intensive approach to participatory natural resources management has been little tested in Guatemala, the discussion below can only be considered as tentative and indicative. In addition, the characteristics of the communities are as or more varied than the biophysical characteristics of the watersheds in which they reside. Accordingly, during the mobilization phase (see Implementation Planning section below), CARE in conjunction with its prime partners in this project, DIGEBOS, DIGESA, and Peace Corps, will devote resources and time to developing the Community Organization and Diagnosis Approach. To enhance and guide their capabilities in doing so, they will require advisory services from individuals and institutions (both local and expatriate) with experience in Guatemala related to rural sociology and community organization and development.

A selected, representative watershed (possibly two, one in the Altiplano and the other in the Oriente) will serve as the pilot for developing this approach. The personnel involved in elaborating and field-testing this approach will possibly serve as a core project unit for community organization and diagnosis. Having developed the approach, they will then train watershed extension and promotional staff in its use and implementation so that it can be used as a basis for operations in other watersheds.

It is also likely that this team will be amalgamated with a similar group of individuals who will develop the watershed planning approach, from the biophysical and agro-ecological viewpoint, (see discussion below) as a project operations development and training team. As part of their duties, and during this first phase, the team will also be charged with developing a training and operations manual for community organization and diagnosis.

In developing (and eventually implementing) the community organization and diagnosis approach, the following techniques may be used:

- rapid rural appraisal at the community and watershed levels;
- simplified socio-economic survey tools;
- household, community and watershed socio-economic profiles;
- gender analysis;
- institutional analysis of local organizations;

- establishment of baseline data and information essential to planning and monitoring and evaluation; and,
- case studies and more intensive focused interviews.

The intention of this approach is to provide a rational and analyzable understanding of the socio-economic dimensions of watershed management. Many projects of this type have erred in the collection of such data, some eliciting exaggerated amounts and detail that latter proved to be unusable while others collect too little to be meaningful. The amount and quality of the socio-economic data found in the present COMPDA watershed profiles is a good start but still inadequate for the purposes of focusing project efforts in ways likely to have the maximum benefits for the participants. This approach will enable the project to target technological interventions that will lead to real achievement in terms of improving the well-being of the participant implementors. Direct tangible benefits, over the near-term, is considered an essential condition to achieving sustainability.

B2f. Training in Community Organization and Diagnosis

The discussion above has already mentioned the need to train the extension and promotion staff in the techniques of community organization and diagnosis. It remains to be seen, however, whether these activities should be the responsibility of staff at these levels. This project is widely viewed as setting the stage for a larger and more long-term NRM activity funded by USAID. The project must, therefore, make every effort to see that this more innovative dimension of its approach is thoroughly designed and field-tested.

Rather than entrusting this very important activity to field personnel at the most basic level, i.e., the present extension and promotion staff who have either little or no training in these people-oriented skills, it might be better to consider constituting a specialized community organization and diagnosis team. This team could be responsible for carrying out the initial work of this nature in each of the watersheds, perfecting their approach as they go, and returning at predetermined intervals for briefer visits to reinforce and further encourage the work of the community organizations.

An important part of their activities in initiating community-based watershed management in each watershed would be to explain the project, its objectives and approach, and then to train interested watershed residents in community organization and then work with them in carrying out the diagnosis, culminating in the formation (or adaptation of an existing community institution) of a community watershed management committee. Local promotional staff and possibly extension personnel assigned to the watershed would sit in on the training program and thus be better equipped to nurture the committee. In order to be most effective, these initiation, organization, training and diagnosis activities should be synchronized with the agricultural cum project activity calendar. Extension and promotional personnel could then carry on with the next step -- watershed management planning -- an area where by training and experience, they will inherently have more competence.

It is likely that community organizations will also need more training in skills related to their institutional development once they get operational and their activities become more sophisticated. This could be another justification for a team dedicated to this purpose.

It will be vitally important to the success of the CNRM Integrated Watershed Management Component that field personnel thoroughly understand and are able to explain to their farmer clients the parallel tracks on which the project is proceeding. Early efforts to explain this dual operational approach may help the project to make further decisions on watershed selection -- based on the reaction, interest and continued local support for the more contrite watershed extension approach as under COMPDA.

B2g. Watershed Management Planning Activity

The present project (COMPDA) operations already include an element of watershed planning. The range of activities has been more limited, however, because the capabilities, institutions and resources available to CARE and DIGEBOS, the principal implementing agencies, has, not surprisingly, been geared to tree-planting and agroforestry. While DIGESA has also been funded under HAD III, to carry out soil and water conservation and improved agricultural practices, their efforts have not been fully linked or coordinated within the COMPDA pilot watersheds.

The intention now, however, is to provide a full range of agricultural and natural resources development capabilities to address the full spectrum of the challenges to watershed stability. Given the conditions in the watersheds -- steep lands and high population densities -- the list of what "could" be done is very long. The objective of the watershed planning activities is to decide what "should" be done to achieve both the production and protection objectives essential to sustainability.

The essence of watershed management planning, thus, is to assess the production potential and the protection needs of the area and to identify a course of action leading to a balance between land capability and land-use. This planning necessitates a comprehensive view of the land, its present uses, the rate and causes, if any, of its degradation and the range of technological interventions which could be adopted and adapted to correct inappropriate land us or to maintain areas still intact. Despite the wide ranging capabilities of CARE, DIGEBOS, and DIGESA and the possibility of seeking technical assistance from other agencies, not every problem can be addressed nor should attempts be made to do so. A limited set of the most promising interventions targeted at those problems which occur most widely is a basic recipe for both success and impact.

Many projects of this nature have failed because they attempted to do too many things -- overwhelming their own technology transfer capabilities.

Several useful techniques will need to be developed as the result of watershed management planning and as the basis for action. They include:

- large scale mapping (1:5000?) to assess in real terms the magnitude of the problems and land-use changes which will be necessary;

- a basic set of technical prescriptions related to slope (%) and soils (quality and depth) which guide both extensionists and participants in the choice of options for a given piece of land;

- a detailed yet concise watershed management focused technical manual detailing the steps, inputs and timing of the different technological interventions;

- an annual planning format (and instruments) that allows planners, extension personnel and participants to ensure that the necessary elements of an intervention are in place in a timely manner (e.g., seeds, plant materials, technical assistance, other inputs, training, credit, etc.);

Here again, a phased start-up to the more intensive watershed planning for integrated management will be fundamental. There has been a good deal of experience in the Central American Region with watershed planning although it is necessary to recall that some of it is much too sophisticated for the purposes of this project. There has been a certain tendency towards "paralysis by analysis" because of an insatiable appetite for data and information on the conditions of the watershed. This must be strictly avoided in the implementation of the watershed planning activities under this component.

CARE and DIGEBOS (Watershed Management Department), with the advice and participation of DIGESA as concerns the agro-ecological dimensions, should set up a Watershed Management Planning Team (similar to the Community Organization and Diagnosis Team mentioned above). Personnel with the skills and experience to carry out this work may or may not be available in Guatemala but can almost certainly be found in the Region. They should work in close collaboration with the Watershed Management Department of DIGEBOS in order to help strengthen its capability for watershed planning. Depending on the outcome of the preliminary planning and modeling efforts, it may be possible to pass this project responsibility for watershed planning to this Department. In the event that such is not the case, it is likely that some members of this team will have to be recruited as part of the long-term staff to join the Project's Technical Development and Training Unit.

This team will be charged with developing the preliminary watershed planning model. Their efforts should be focused on one (perhaps the two) of the watersheds being targeted for the development of the Community Organization and Diagnosis approach. In any case, the choice of test watershed should be from one of the high profile watersheds currently under COMPDA. This will enable the respective teams to jump-start the data collection efforts by building on the existing COMPDA watershed diagnosis files.

For the purposes of planning a more integrated watershed management component, while the basic information on the biophysical features (soils, topography, climate and vegetation) is fundamental, much

more information is needed on man's interaction and impact on natural resources. This latter type of information articulated with that from the socio-economic diagnosis will provide the basic ingredients for the choices of interventions to be included in the Watershed Management Action Plan.

The initial watershed planning activities should only begin in the field once the Community Organization and Diagnosis Team has achieved a satisfactory level of community participation and self-diagnosis in the test watershed. Hence these activities will only commence towards the middle of the mobilization period (see Implementation section below). In the interim, this Watershed Planning Team could begin to assemble the more static resources data and information sets currently available. The question of up-to-date aerial photography and its conversion to a scale useful for watershed planning (1:5000 ?) will also be resolved during this period. Both DIGESA and DIGEBOS would also be engaged in compiling the prescriptive information on the various technological interventions in sustainable agriculture, soil and water conservation, agroforestry and forestry management at this time.

Because of the more highly developed technological demands of watershed planning, it will be necessary that this sub-activity be carried out by a specialist team, working in each of the watersheds with the extension/ promotion personnel and the community participants. They will also no doubt have to provide regular intermittent training opportunities to extension personnel to reinforce their understanding of the requisite conditions needed to apply the technological interventions and ensure that they achieve their production and protection purposes.

B2h. The Range of Technological Interventions

The following is an indicative list of technologies which could be applied to widen the impact, both in production and protection terms within the targeted watersheds. Many of them are known and have been field tested in Guatemala, however, their adaptability, in both agro-ecological and economic terms, needs more site specific experimentation and demonstration. The time, however, is now to begin working with them; the well-known paradigm of watershed management applies: prevention of degradation will require less investment than rehabilitation -- in both agro-ecological as well as socio-economic terms.

P Sustainable Agricultural Practices:

- improved plant spacing
- no till farming
- composting and the use of manure
- appropriate crop rotations
- improved crop varieties
- appropriate irrigation practices
- enhanced fallows using cover crops
- improved harvesting techniques which avoid soil disturbance
- improved field organization and lay-out including access paths

P **Soil and Water Conservation Practices**:

- contour farming
- contour hedgerows (live barriers)
- dead barriers
- mulching
- grassed drainage ways
- side hill ditches and similar enhanced rainfall infiltration techniques
- cover crops for soil fertility and organic matter content enhancement
- individual terraces and bench terracing
- tied ridges as part of contour farming
- gully plugging using gabions, check dams and vegetative means

P **Agroforestry Practices**:

- alley cropping with multi-purpose tree species
- windbreaks
- living fences
- live tree supports for climbing crop plants
- intercropping, with nitrogen fixing tree species
- short rotation tree fallows

P **Forestry Practices**:

- woodlots and plantation forestry
- natural regeneration
- coppice based fuelwood and post/pole production systems
- multiple purpose natural forest management

P **Other Technologies**:

- improved stoves to reduce woodfuel consumption
- fruit tree orchards on sloping areas using individual tree terraces
- simplified improved pasture management
- stall feeding linked to fodder banks on marginal soil/slope areas

Under the COMPDA activities to-date, CARE and DIGEBOS have been supporting the farmers implementing technological improvements as part of individual farm management and forest management plans. The effectiveness of that approach, given its intensive levels of farmer/extensionist interaction, especially as concerns farm management, should be carefully reviewed as part of the upcoming final evaluation of the HAD Project.

As an alternative, CARE, DIGEBOS, and DIGESA extension personnel assigned to the watershed would be better advised to attempt the extension of a watershed specific package of technological interventions based on the participatory planning efforts. Such an approach facilitates field operations and training and technical assistance for the farmer clients. It also provides a focus for training the promotional staff in a rational manner and in accordance with the needs in the areas in which they work. It is likely to prove to be more effective in the early years because it will focus an otherwise almost boundless array of interventions that the integrated watershed management strategy implies. This more structured approach may also be easier to convey to local NGOs and/or local organizations who wish to take up similar operations at the community level.

B2i. FEAT: Private Sector Extension Services Activity

A private sector extension services component, known as FEAT (*Fondo Especial de Asistencia Técnica*) was initiated under Phase III of the HAD Project. Originally designed as a five year effort, start-up and mobilization needs will limit the present experience and accordingly, USAID/Guatemala has decided to extend the activities for another four years under the Community Natural Resources Management Project. The intention is to entrust the financial management and implementation of this activity to CARE as part of the Cooperative Agreement discussed elsewhere in this document.

The purpose of the FEAT activity is to promote the development and establishment of a market driven extension services sector which will make available quality technical assistance at reasonable fees to small to medium sized farmers. FEAT will also promote the utilization of private sector extension services in order to reduce the demand upon public institutions and also to further encourage farmers to make the transition from subsistence or traditional agriculture to diversified commercial agriculture.

Farmers will utilize FEAT extensionists because they can rely on the quality and timeliness of their services and because they anticipate a tangible payback in terms of production and income gains. The early experiences with the FEAT approach have been promising but there is still a need to consolidate the program and to provide documented evidence as to its replicability, its acceptance by the farmers and its effectiveness as any extension model.

Pending the results of the HAD Project evaluation, the FEAT activity will be continued following the existing model. FEAT will sign agreements with individual extensionists who, in most cases have elected to leave government service to try this approach. The FEAT extensionists is expected to negotiate agreements with groups of farmers (12 farmers as a minimum in each group) within a given watershed or its vicinity to provide them with technical assistance. The present model involves weekly visits to each group (40 visits per year). The extensionist may visit no more than 3 groups per day. The total number of farmers is also limited to 144. Each individual farmer will agree to pay the extensionist Q.500 per year.

Given the pilot nature of the FEAT program, project funds have been used to subsidize the farmers payments to the extensionist on a declining basis. During the first year, the project covers 80% of the costs

(Q.400); the farmer is responsible for paying the remaining 20% directly to the extensionist. Each year thereafter, the amount of the subsidy declines by 20% so that by the fifth year the farmer is paying 100% of the cost.

The FEAT extensionists will provide technical assistance to their clients on the following topics: agronomic practices for NTAEs, irrigation techniques, farm and financial management, marketing, and most importantly, on the use of agrochemicals and the prevention of human and environmental contamination. Because of the importance of the latter topic in combatting the pervasive spread of the negative effects of agrochemical use, FEAT will continue to provide a strong training program on this subject.

It is possible that other project personnel as well as the staff of nearby agro-services stores could be invited to participate in this training. The GOG FEAT Program Coordinator and his Technical Assistant could also be asked to provide training for the watershed extension personnel so that they can introduce improved agronomic, agrochemical and irrigation practices to the many farmers throughout the watersheds now involved in informal *mini-riegos* and NTAEs.

An important activity of FEAT to-date has been the training of extensionists to provide critical state-of-the-art technical assistance to farmers. It is envisaged that DIGESA and FEAT extensionists will work synergistically to raise the overall level of the extension and promotion personnel. Training opportunities will be shared by both groups.

B2j. Component Outputs

The specific objectives of this component are to develop and implement integrated watershed management activities and thereby raise the productivity and income of the participants. It is also important, however, not to lose sight of the "process orientation" associated with the fact that this is an interim project. It is designed to lay a sound foundation for future large-scale efforts to be patterned after the community organization and participation in watershed management diagnosis, planning and implementation. Accordingly, the outputs listed below reflect the tangible and intangible outcomes of the CNRM Project:

- a working community organization, self-diagnosis and training approach adapted to integrated watershed management in Guatemala;
- a practical integrated watershed management planning and decision-making model:
- a set of diagnostic and analytical tools and methodologies which facilitate watershed planning -- from both the socio-economic and the biophysical perspectives;
- staff at various levels and promoters and participants trained and experienced in the techniques of community-based integrated watershed management;

- training and operations manuals for all of the above;

- an extensive series of farmer managed experimentation and demonstration plots;

- an effective monitoring and evaluation system built on the foundation of a comprehensive and realistic, watershed level socio-economic and biophysical baseline;

- significant numbers of households (50 - 75%), with activities focused on both men and women, participating in community-based integrated watershed management in ?% of the pilot watersheds; and

- ????? numbers of farmers, no. of communities, incremental production gains, no of watersheds ??????

B2k. Component Inputs

Funding for this component from USAID/Guatemala will be provided by means of a Cooperative Agreement with CARE similar to that agreed upon under the HAD III Project. The CoAg will cover the following inputs: **(an indicative list based on project preparation team's vision of the requirements; must be discussed and further elaborated with CARE)**

PERSONNEL:

- quarter-time of CARE/Guatemala Agriculture and Natural Resources Program Manager (expat): 12p/m

- full-time CARE/Guatemala Project Manager (local): 48p/m

- full-time Agronomist Advisor responsible for sustainable agriculture, agrochemical use, ag marketing and the FEAT component (expat): 24 p/m

- full-time Community Organization/Diagnosis Team Leader; community development specialist or rural sociologist (local): 48p/m

- full-time Watershed Planning Team Leader (natural resources management specialist, not a forester) (local or expat- could be an ex-PCV with experience in the project):48 p/m

- half-time Training Specialist; shared with other CARE NRM projects: 24 p/m

- short-term consulting services in all areas of project endeavor (local/expat): 36 p/m

- local specialist personnel: assistant project manager, additional personnel for Community Organization; Diagnosis and Watershed Planning Teams; administrative, secretarial and support staff: ??? p/m

COMMODITIES:

- vehicles ???
- field equipment
- aerial photography interpretation equipment
- soil testing equipment
- forestry management equipment
- office equipment

OPERATIONAL FUNDS:

Operational costs of FEAT activities

- vehicle operations and maintenance
- purchase of materials and supplies
- office operations
- per diems for travel by project personnel
- participant and staff training
- contingency

There will also be substantial Government counterpart resources necessary for the smooth operations of DIGEBOS and DIGESA in the project. This GOG funding must come out of clearly identified existing funding sources such as PL-480 or other earmarked monies and not out of the general fund. GOG funding will cover both salaries and operational costs for designated counterpart personnel (project management and technical level) as well as field extensionists (one DIGEBOS and one DIGESA extension agent for each watershed) and promoters (one or two per watershed) and the operational costs (per diems, gasoline and vehicle operations and maintenance, office operations, others???).

The Peace Corps will also supply up to 20 volunteers to work either as extension personnel in each watershed or possibly, depending on their training and background, as part of the two specialist teams mentioned above.

B3. Policy Component

See following section, IIIc.

B4. Monitoring and Evaluation Activities

B4a. Background

The monitoring and evaluation activities have been given especially high profile in this project for a number of reasons.

- The importance of the **process orientation** implicit in this interim project which is intended to lay the foundation for larger-scale efforts in the future. At both the component levels (integrated watershed management and policy), the objective is to create the capability for addressing the constraints to natural resources management in Guatemala. Building community level organizations capable of diagnosing their watershed management related problems and working together to resolve them will lead to greater efficiency and effectiveness (impact).

  The importance, however, of finding the right operational approach to matching the development interests and resources of the public sector (GOG/donors) with the interests and resources of the community will provide the basis for replicability-- the first step towards sustainability.

  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. This will be a prerequisite for their maintaining their 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 and capability for both decision-making and implementation on policy issues.

- The **institution-building objective**s of both components need to be carefully monitored to ensure that they are on the right track. Organization, training and activity needs to proceed along a series of benchmarks which corroborates that the requisite institutional strengthening is indeed taking place.

- Another important achievement of this project will be to ensure that there are **sound linkages and feedback mechanisms** between the field component and the 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 the community based reviews of their needs, opportunities and constraints will provide the rationale for choosing the

policy themes to be addressed and thereby ensure their relevance in terms of moving towards the project purpose.

- By definition, monitoring and evaluation will also provide a **significant contribution to the operational dimensions** of the project's implementation. It will facilitate annual planning (a monitoring function) and provide the justification for course changes if any are necessary. It will allow project, government and USAID personnel to track effectiveness (a monitoring function). It will also provide the wherewithal for evaluating efficiency issues: cost/benefit analysis of technological innovations, production and income gains at the household level, and estimates of project internal rate of return (evaluation functions).

- The monitoring and evaluation activities will also provide the direct inputs necessary to USAID to ensure that it is achieving its **NRM Strategic Objective**.

Figure ___ provides an overview of the NRM Strategic Objective Tree adapted to include the Program Outputs and Performance Indicators resulting from the CNRM Project.

B4b. Objective of the M&E Activities

The development objective of these project activities is to develop and institutionalize a fully functional, effective and efficient monitoring and evaluation system capable of tracking and evaluating physical changes (impact), institution-building and policy achievements related to natural resources management.

B4c. Operational Arrangements

A project monitoring and evaluation unit is envisaged, to be staffed by personnel provided by the contractor and by CARE, DIGEBOS and DIGESA. In addition, each component will have a designated M&E coordinator who will work with the unit staff to facilitate the two-way flow of data and information.

The contractor will provide an experienced long-term expatriate NRM monitoring and evaluation specialist who will act as Head of the M&E Unit. The local subcontractor will provide a long-term rural sociologist/social analyst familiar with monitoring and evaluation to ensure that the socio-economic dimensions of natural resources management are properly accounted for in the work of the Unit.

Monitoring and evaluation will take place at several levels within the project: local level, component level and national level. In each case during the mobilization phase of the project, a specific Scope-of-Work will be prepared for each level to link them together in a coherent and effective system. These SOWs will be based on the indicative list of monitoring and evaluation activities described below. Final preparation of the detailed implementation plan, especially for the watershed component for a which a

proposal leading to a COAG is expected, must necessarily occur before the M&E system activities can be completely designed.

B4d. M & E Activities

Within the **Integrated Watershed Management Component**, the first and most important step for the M & E system begins at the field level with the development of the baseline data and information essential to understanding the needs, opportunities and constraints to improved natural resources management. The Community Organization and Diagnosis activity to be carried out progressively in each watershed will provide a wealth of data and information for the socio-economic dimensions of this baseline.

To this will be added the biophysical, land-use and NRM problem analysis data and information compiled as the result of the Watershed Management Planning activities, also to be undertaken progressively in each watershed. This data and information will be used to expand and enhance the existing watershed profile information currently available with CARE under the COMPDA component of HAD III. As this data and information becomes available, the following more specific activities are foreseen:

- Not all of this primary data and information can or should be used for the M & E system. Therefore, one of the first steps of the Unit will be to examine this data and select the most important parameters for the M & E model.

- There is also some possibility that a great deal of information gathered under the HAD Project and currently stored in SPSS software files might also be useful to the M & E system. This data must be accessed and reviewed.

- Based on the data compilation and analysis, a preliminary M & E system model will be developed and an operational manual for its use prepared.

- Training programs for field-level staff and component managers in the applications and implementation of the M & E model will be carried out.

- Copies of the aerial photography and the large-scale watershed base maps prepared as part of the watershed planning exercise may be used to establish a project level geographic information system.

- Periodic M & E reports and a summary report at the end of the implementation year, the latter as the result of the community level evaluation exercises will be prepared for each community and summarized for each watershed. The M & E system will be specifically designed to track progress in accordance with the project field implementation year.

- The watershed level M & E reports will serve as a basis for an overall component M & E report to be submitted to the Project Committee and USAID/Guatemala.

- Given the progressive nature of the watershed management planning activities foreseen as part of the phased-in implementation of field activities, the M & E Unit will find the means to improve the M & E system model over the life-of-the-project.

- Short-term consultant specialists will be brought on-board as needed to further analyze certain monitoring parameters and corroborate their usefulness. Every effort will be made to make the system both user-friendly, feedback responsive (two-way) and efficient. It should carefully avoid the burden of data/information collection not directly relevant to the needs of the project.

  For example, special attention will be given to developing a disaggregated system of reporting on area treated -- distinguishing (as recommended in the Shonder report) types of interventions and avoiding misleading double/multiple counting on assessing overall area impacted. The overall objective will be to estimate the progress made in achieving improved natural resources management, in this case, the impact of sustainable agriculture, soil and water conservation, agroforestry, forestry and other interventions, which in the aggregate provide a gauge of the progress in bringing stability to the watershed. To do otherwise, is to compare apples with oranges.

- Additionally, as part of the verification of achievement of the NRM Strategic Objective, and to corroborate the development of local community based capabilities, the percent of targeted users applying improved NRM practices will be reported. A particular objective of this more integrated and community based watershed component under CNRM is to raise the percentage of watershed residents applying such techniques well above the modest numbers obtaining under COMPDA.

  Here again, however, a disaggregated and weighted performance indicator system should be developed so as to avoid misleading impressions of the levels of achievement of this important objective of participation. For example, rather than simply counting the number of heads of households participating, the system must attempt to develop an approach to sample their overall commitment to NRM, say by assessing the percentage of their individual holdings benefiting from new practices. In this same regard, gender disaggregated data will be required to ensure that all segments of the communities are being reached and their potential as participants realized.

The monitoring and evaluation activities related to the **Policy Component** should follow the procedures described in the Shonder Report (USAID/Guatemala NRM Program Monitoring and Evaluation Plan by John A. Shonder, pages 17 - 20).[2]

B4e. Formal Project Evaluation

Only one formal evaluation of this project is proposed -- to occur towards the end of the third year of implementation with the intention of providing the information necessary for the design and preparation of the follow-up project. This comprehensive evaluation should be a tripartite like exercise, involving representatives of the GOG, USAID and an independent evaluation team. The independent evaluation team should be comprised of both social and institutional analysts as well as personnel familiar with the technological dimensions of natural resources management.

The timing of the evaluation should be linked to the activities of the project's implementation year, i.e., hopefully to take place during the same period when the community watershed management committees are carrying out their own annual self-evaluation exercises. This will enable the combined evaluation group to obtain direct information and inputs from the participants (men and women) about the work of the project, it achievements and its problems. It will also provide a first hand opportunity to observe the effectiveness of the community organization and participation process.

B5. Cost Estimate and Financial Plan

The overall costs of this project are estimated at U.S.$ 0.0 million. Funding sources for this budget may be broken down as follows:

!	USAID $ Grant		$
!	GOG Counterpart budget		$
!	Care Matching Funds	$	
!	Peace Corps	$	
!	ROCAP Service		$
!	Watershed Communities: Participation and Labor	$	

This cost estimate may be further broken down by component and principal activities as follows:

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[2] USAID may wish to use these passages from the Shonder Report adapting them to the realities of the policy component as finally elaborated. An important part of the evaluation will be assessing the degree to which the policy review and analysis process is of relevance to the constraints experienced in the implementation of integrated watershed management at the field level.

B5a. Integrated Watershed Management Component

CARE will receive a U.S. $ 4.0 million grant under a Cooperative Agreement. The amount is expected to cover the following budget lines and amounts:

!	International Personnel	$	
!	Local Personnel		$
!	Commodities		$
!	Training		$
!	Operating and Administrative Costs	$	
!	Travel and Per Diem	$	
!	Administrative Support- Overhead		$
!	Evaluations and Audit	$	
!	Inflation and Contingencies		$
	TOTAL		**$ 4,000,000**

In addition, CARE will contribute matching funds in the amount of $_____ over the life of the project. The GOG contribution in the form of in-kind personnel services for DIGEBOS and DIGESA personnel involved in the project and operational expenses related to their participation will be Q_____, equivalent at the present exchange rate of Q5.3/U.S.$ to $_____. The Peace Corps will provide up to 20 volunteers over the life of the project (80 person/years) equivalent to $_____. Community residents will also make a significant in-kind contribution to the implementation of the project in terms of their time and labor for local level program management and implementation. Although difficult to estimate with exactness, this contribution will be on the order of _____ thousands of person/days which at the present opportunity costs (_____/day rural wage) has a value equivalent to $_____.

B5b. Policy

USAID/Guatemala will procure the services of a U.S. based contractor (profit/non-profit) with a local subcontractor to provide technical assistance and administrative, implementation and management services in support of this component. The estimated costs of the contract services associated with this component by category are as follows:

! Long-term technical assistance. Senior NRM Policy Advisor/Chief-of-Party. 4 person/years: $800,000

! Short-term technical assistance. Specialized consultants (expat/local). 24 person/months @ avg. cost of $10,000. per person/month: $240,000

- Operational funding:
  - in-country training and dissemination (50/75/75/100): $300,000
  - policy studies (local contractors). 10 to 20 studies at $30-50 thousand each: $500,000
- Offshore training. 2 M.Sc.: $80,000
- Administrative (local hire Senior Project Administrator and two secretaries): $80,000
- Office Rental (Project Office): $96,000
- Commodities (1 vehicle, computers, office equipment, furniture, etc)[3]: $300,000

TOTAL **$2,396,000**

In addition, CONAMA will be asked to provide the services of 1-3 officers to work as part of the secretariat to the Policy Working Group. These GOG in-kind costs, amounting to an estimated 8 person/years total plus some operational funding for the component are estimated to be equivalent to $_____.

[3] It may well be possible to use much of the equipment purchased under the HAD Project for these purposes.

B5c. Monitoring and Evaluation Activities

The same contractor mentioned above will also provide technical assistance and administrative and implementation services to staff and support a project monitoring and evaluation unit. The local subcontractor will provide all local hire services required for this unit. The estimated costs of these activities under the contract are as follows:

- Long-term technical assistance. NRM M & E Specialist (expat). 4 person/years: $800,000
- Long-term technical assistance. Social Analyst (local). 4 person/years: $160,000
- Short-term technical assistance. Specialist consultants (expat/local). 18 person/months @ $10,000. avg. cost per month: $180,000
- Operational funding: $100,000
  - in-country training
  - analytical studies
  - publication and reports
- Administrative/Secretarial Support: $48,000
- Commodities (1 vehicle, computers and office equipment, furniture, etc.): $150,000.

TOTAL **$1,438,000**

The GOG will be encouraged to designate an officer from both DIGEBOS and DIGESA to work with the Monitoring and Evaluation Unit. The costs of these in-kind personnel contributions amounting to 8 person/years is estimated to be equivalent to $_____.

B5d. Management Support

Administrative, financial management and secretarial services will be required to provide some support to the watershed management component and in general to facilitate the smooth implementation of the project as a whole. This Unit will be patterned after, at a much reduced scale, the present UAP of the HAD Project and will undertake similar support functions. The following costs are foreseen:

- Administrative, Accounting and Secretarial staff. 12 person/years (local): $72,000

GRAND TOTAL USAID $ FUNDING $7,906,000

Table I
Budget Summary and Financial Plan ($000)

Component	USAID LC	Total US$	GOG Funds USAID	LC	Total
1. Policy					
2. Watershed					
3. M & E					

Table II
Summary Expenditures by Fiscal Year ($000)

Fiscal Year	USAID	GOG	Total
1994			
1995			
1996			
1997			

Table III
Methods of Implementation and Financing (US$)

Method of Implementation	Method of Payment	Amount
1. Technical Assistance Prime Contractor	Direct Payment	
2. Cooperative Agreement CARE/Guatemala	Grant	

B6. Implementation Plan

As has been mentioned elsewhere in this project paper, this project's implementation calendar will include **a mobilization period** expressly dedicated to putting in place the more intensive integrated watershed management approach -- emphasizing community organization, local level watershed management planning and the wider array of technological interventions essential to full participation and high levels of impact.

However, and most importantly, the on-going efforts begun under COMPDA must continue without pause in order to maintain project momentum and keep the interested watershed residents fully engaged until the new approach can be brought to bear in their particular watersheds. During this period as well, DIGESA personnel will join the CARE, DIGEBOS and Peace Corps extension and promotion field staff to begin widening the array of technological interventions available to the residents.

The expected outcome of the mobilization period, as relates to integrated watershed management, and for which CARE will bring on board specialist consultants, is to elaborate the preliminary model of this new more intensive approach. Community Organization and Diagnosis and Watershed Management Planning Teams, acting in a synchronized way (as discussed above) will do the following:

a. Prepare the basic promotional materials for explaining the new approach to community residents.

b. Develop the community organization and diagnosis methodology and field test it.

c. Compile socio-economic and community data and information for the planning baseline and to use with the monitoring and evaluation system.

d. Acquire large-scale aerial photography (1:5000) for a few sample watersheds as the basis for watershed management planning.

e. Develop a simple land-use capability classification system.

f. Develop the watershed management planning methodology and field test it.

g. Acquire the necessary additional equipment and commodities.

h. On the basis of the outcome of the test watershed management planning exercises, carry out more detailed planning of the working relationships between CARE, DIGEBOS, DIGESA and Peace Corps.

i. Prepare a detailed work plan for the continued development of the new approach and its incorporation and use in the other project watersheds.

B7. Summary of Project Analyses

To be prepared by USAID once all the analysis have been performed.

SECTION IIIC: PROJECT DESCRIPTION

POLICY COMPONENT

C1. Introduction

C1a. Problem statement

Guatemala's rich natural resource base, composed of land, water, forests and fisheries/aquaculture, contributes over 80% to the GNP and provides employment to 70% of the population. Disturbing trends have occurred over the last decades including serious soil erosion, deforestation, watershed degradation, loss of biodiversity, and pesticide mismanagement. Accelerating rates of natural resource depletion are contributing to a decline in productivity and increasing poverty especially in the rural areas which if allowed to continue may seriously jeopardize long term economic and political development.

To date, efforts to address these problems have come in the form of technical interventions such as forest plantations and soil conservation and targeted programs like watershed and protected area management. These responses have produced mixed results, especially when viewed from the perspective of the dramatic growth in total area degraded or deforested irrespective of these interventions. At the same time an unsupportive policy environment, weak institutional arrangements and a lack of awareness contribute to a situation where even the best designed interventions often do not achieve their resource management objectives.

Guatemala's resource management problems are similar to those found elsewhere in the developing world. Increased attention to these problems by scientists, economists, institutional and policy specialists from academia and the international donor community suggests that there are a number of specific issues which require immediate attention. These include:

i. the establishment of legal and policy development process which adequately accounts for the value of resources under a system where there are many users and multiple benefits;

ii. the building of institutional capacity through human resource development and the establishment of clear guidelines for policy implementation, monitoring and enforcement; and

iii. decentralization of authority and decision making over resource management to the municipal and community level.

The Guatemalan Congress and the Office of the President play a central role in natural resource policy development and implementation. (See organigram 1.) To a large extent this process is based on the design of a body of law (i.e., *Ley Forestal* or *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 *disposiciones municipales*, which allow municipalities the right to manage resources such as water and publicly-held lands.

The formulation of legislation takes place on an *ad hoc* basis and with little "analytical" or "popular" input into the process. Those interests with the access and power to influence the process are the most important input into the design of laws. For example forest sector policies are often designed without reference to the role of forests in watershed protection or as a component of a broader ecosystem which provides numerous non-timber benefits. Policies designed to support resettlement or colonization often fail to evaluate the suitability of the land for agricultural purposes.

C1b. USAID Interest in Natural Resource Management Policy

In support of the LAC Bureau's overall development objective of broad based economic growth, the Mission has consolidated its various natural resources management activities into a focussed program defined by its Strategic Objective of *Improved Management of the Natural Resources Base for Productive and Conservation Purposes*. The key policy areas to be supported by the Mission include: (1) the identification and application of appropriate incentives for local community management of natural resources and (2) assisting in the process of legislative reform and institution building at the national level.

Ongoing project activities like the Maya Biosphere Project (MAYAREMA) and the Highlands Agricultural Development Project (HAD) are examples of activities which address the Strategic Objective. The Mission has also defined three specific outputs deriving from the strategy:

- **People**: increased use of NRM plans and practices.
- **Institutions**: increased use of environmentally-sound plans and activities.
- **Policy**: improved NRM policy environment.

The Community Natural Resources Management project (CNRM) will undertake a series of activities which build on the Mission strategy and are targeted towards the key policy areas. The policy component represents a novel approach by establishing the conditions for participation by different interests at the national and local level in order to:

- improve policy dialogue and policy awareness,
- define a policy agenda,
- establish a process for policy analysis, and
- undertake education and training for policy implementation.

C2. Component Overview

The objectives of the CNRM policy component are to:

i. encourage policy dialogue, analysis and implementation in natural resources;

ii. encourage the institutionalization of the policy process and improve coordination among participating organizations;

iii. provide opportunities for wider participation in policy dialogue;

iv. establish a policy agenda which reflects the diverse interests of resource users; and

v. where appropriate, encourage the decentralization of resource planning and management to the local level.

There will be three major activities undertaken during the policy component of CNRM: (1) Policy Inventory and Agenda, (2) Policy Analysis, and (3) Policy Implementation. Although these activities will be interactive and iterative from the outset of the CNRM, they help to organize sub-activities and suggest a project structure required to carry them out. (See figure 1.)

The initial structure of analysis is established by the policy inventory (problem identification, policy identification, institution and stakeholder analysis, policy assessment, and policy alternatives, and analysis priorities). These are continuous categories of activities as well as ways to provide a systematic information format throughout project implementation. There will be four key elements to all project activities:

i. adaptation and refinement of RENARM Green Book tools to the Guatemalan context,

ii. participation by Guatemalans in the design, implementation, and review of the assessment, analysis and implementation activities,

iii. a dual/interactive set of activities at the national and community levels, and

iv. monitoring and evaluation indicators integrally incorporated into all project activities.

C3. Project Activities

C3a. Policy Inventory and Agenda

The initial phase or activity of the Policy Component will be a Natural Resource Policy Inventory which includes the following steps: (1) Problem Identification, (2) Policy Identification, (3) Institution and Stakeholder Identification, (4) Policy Assessment, and (5) Identification of Policy Alternatives and Analysis Priorities.[4] Each of these steps is described in more detail below.

This phase should take the first six months of the project and be performed by a policy inventory team composed primarily of Guatemalans. The team leader should be a natural resource economist or policy expert. This team will be composed of specialists from policy areas which are likely to be the focussed on during the analysis and implementation phases. The team will also work closely with key members of the **"Core Implementation Team"** whose activities are detailed in the following section.[5]

The process should be highly participatory and include community level policy assessment activities. The **outputs** of this activity will be a comprehensive description, assessment and ranking of policy analysis to be performed throughout the CNRM. The document can be called the *Guatemala Natural Resource Policy Assessment and Analysis Agenda*.

The document will also include a compendium of laws and policies, the roles of different GOG institutions in the legal/policy process, and the initial policy agenda to be addressed during the policy analysis phase. This document can also serve as a structure which can be updated as the CNRM produces analysis improving our understanding of problems, policies, etc. Scopes of work for policy analysis activities at the national and community level will result from this activity.

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[4] A detailed description of the methodology to be utilized in this phase of the component can be found in Attachment I of this section.

[5] The DESFIL team's recommendation for the "Core Implementation Team" is detailed in the Institutional/Administrative Analysis (Annex i.) of this document.

The initial phase will also set in place a **process** for the **policy analysis and policy implementation** phases. A key element of the process will be the identification of members of the "Technical Analysis Committee" (TAC), the development of criteria for the selection of activities based on the Policy Inventory and Agenda, and the specific administrative requirements for selected activities.

C3b. Policy Analysis

The policy analysis agenda identified above will be implemented after the initial six months of the CNRM. The TAC, composed of appropriate and interested members of the participatory assessment process, should have a review role over scopes of work and analysis results. Participant working groups should be organized for each analysis activity. Each analysis should have as elements inclusion of baseline indicators delineated in the policy inventory and a strategy for dissemination (workshops, seminars, publications).

As mentioned above, a summary of the results can be included in periodic (annual) revision of the base document. This can also allow for overall review of priorities since the initial structure of problems and policies can be expected to change over time as we learn more (in part from analysis) and the situation changes. Activities at the national and community levels should have overlapping design or mandates and perhaps have team members in common between the two activities.

The range of problem and policy issues suggests that analysis will be performed by a large and diverse set of individuals, expatriate and Guatemalan, government, private, and NGO. The Core Implementation Team will be responsible for management of process and outputs, but will farm out actual analysis activities to appropriate entities based on criteria such as cost, institutional interest and capacity, past performance, etc.

Over time, analysis activities may become concentrated in those entities with superior performance. The core team should have a base in both the public and private sector in order to facilitate participation and ownership by both in the CNRM Policy Component. While this will make initial implementation more complicated, it provides for a more flexible long term structure.

C3c. Policy Implementation

From a donor point of view, policy dialogue will be greatly facilitated as information relevant to the strategic policy objectives become refined by CNRM outputs. Clearly at some point in the future, policy changes which promote sustained resource management at the community and resource-user level will need to be identified and implemented. In order to achieve this goal, the CNRM, by adopting a highly participatory approach to setting the policy analysis agenda and reviewing the results, will build a demand for the outputs of policy analysis.

Educational activities based upon the *Guatemalan Natural Resource Policy Assessment and Analysis Agenda* and its periodic updates (perhaps on the desks of newspapers) as well as more focused specific outputs of analysis, will broaden the base from the initial (and evolving) set of direct policy analysis participants. The adaptation and refinement of the RENARM Green Book tools (analysis, manual, and decision maker workbook) into Guatemalan-specific contexts will also allow for wider dissemination activities of those Guatemalan oriented products into classrooms, libraries, etc.

The CNRM project with its highly participatory approach to setting the policy analysis agenda addresses some of the key bottlenecks in the current policy process: inadequate and incomplete information/analysis on the role and impact of GOG policies in resource sectors (land, water, and forests), and lack of participation by resource users in policy dialogue, reform and implementation. In other words, the approach attempts to take a highly centralized top-down process characteristic of the last few decades and increase the "inputs" (information/analysis/participation) into decision making.

This is not to suggest that CNRM will reverse the process (bottom-up), but will attempt to build on some key GOG and donor agency interests (decentralized public investment and management and democratization), which encourage the growth of a boarder spectrum of ideas and approaches to resource management than was previously the case.

C4. Key Elements of the Policy Component

C4a. RENARM Green Book

Use the **RENARM Green Book** as a foundation and launching vehicle as well as a process and structure for project activities. Past work for ROCAP/RENARM by Abt Associates through APAP II, and currently through DESFIL, will provide information and a process which can be readily adapted and refined to the Guatemalan context. This adaptation can range from a narrow use of the Green Book documents to perform a policy inventory to a much wider use in policy analysis and implementation. This structure implies a use of the concept and tools known as the RENARM Green Book, but does not require involvement by Abt or DESFIL in Project implementation. Continued interaction with on-going RENARM activities will be mutually beneficial.

C4b. Participatory Approach

Use a **participatory approach** to build a clientele, define the agenda, increase institutional capacity, etc. Participation should be an integral part of the policy inventory process (problem identification, policy identification, institution and stakeholder identification, policy assessment, and policy reform and research design). Subsequent analysis activities should have systematic review of research design and results (at both the community and national level).

Both the use of policy analysis and participation in the policy making process are relatively new activities which will need support by the CNRM. Initial participants will include representatives of public and private institutions as well as stakeholders at the national and community level. In the policy analysis activity, this group will be expanded through working groups focused on the more narrowly defined areas of analysis and more specific stakeholders. In the policy implementation phase, the educational tools resulting from the analysis and working group activities will be disseminated to the broader public which will result in more potential participants for future analysis activities as well as building a demand for the results of analysis.

C4c. Interactive Activities

Major component activities (policy inventory and agenda, policy analysis, and policy implementation) will each have **dual and interactive sub-activities at both the national and community levels**. For example, the policy inventory will include policy oriented participatory rural appraisals. Institutional mapping can address similar issues at national and community levels, as can stakeholder analysis as well as empirical observations about policy effects desegregated to community and aggregated at national level. This should be viewed as an important experimental element in the project since the notion of community input into the policy making process in Guatemala is at an early stage. Indeed, an important element of the analysis agenda should be how local communities and government can better interact for improved resource management.

Membership on local committees may be but one element of this solution. The design of analysis activities and working groups and the kinds of information produced under policy implementation should be judged on whether they meet the dual/interactive national and community objectives of the policy component. The CNRM project should not rely solely on input from the CARE watershed management activities as the source of interaction between the policy component and their activities, but should encourage input from other Mission supported (i.e., Mayarema and GPS) and donor-funded projects.

C4d. Monitoring and Evaluation

Monitoring and evaluation (M&E) will be incorporated into the policy component design from the outset in the policy inventory and henceforth in policy analysis and implementation activities. Specific indicators for policy and institutional change will be defined within the project as those policies are identified. Guatemala's relevant definition of biophysical and socio-economic indicators will occur in the policy inventory process. Indicators of improved natural resource practices can de identified and assessed in the policy inventory with input from the HAD and CARE watershed management activities.

The objectives of the policy component will require an M&E system which establishes a set of "process indicators." The indicators will measure a specific set of goals as described under each activity (Inventory, Analysis, and Implementation). The methodology for the policy inventory described in Attachment I. provides an initial set of goals and results on which to base the system. The interactive and

iterative nature of these activities will also require the definition of "evaluation indicators" for the subset of activities undertaken in the Analysis and Implementation phases. The M&E component of the CNRM Project should develop with the Core team, and in consultation with the TAC, a plan to define the indicators, measure the results and recommend adjustments during the life of the component.

C5. Project Outputs

Each **output** is an input into the next activity to create an expanding institutional demand for and/or supply of analysis and information in policy formulation. The outputs are tied to the components objectives and activities and can be specified as follows:

C5a. Policy Inventory and Agenda Outputs:

i. the updating of the policy inventory and the establishment of a policy agenda and scopes of work for analysis;

ii. the establishment of a Technical Advisory Group;

iii. the establishment of working subgroups (water, forests,sustainable agriculture); and

iv. the establishment of institutional and administrative arrangements for carrying out Policy Analysis and Policy Implementation activities.

C5b. Policy Analysis Outputs:

i. analysis of priority policies based on the policy agenda;

ii. workshops for key institutional players;

iii. natural resource policy awareness; and

iv. annual updating of the base document (loose leaf inventory and analysis).

C5c. Policy Implementation Outputs:

i. distribution of revised document;

ii. educational programs based on policy analysis;

iii. increased demand for analysis by ministries and other public sector agencies;

iv. increased supply by the private sector and the CNRM project;

v. results of analysis covered by media; and

vi. improving the opportunity for other donor participation in the policy process.

C6. Project Inputs:

The project inputs detailed below are considered the minimum necessary for achieving the components objectives detailed above.

The major inputs into the policy component include:

Long-term technical assistance	$ 800,000
Short-term technical assistance	450,000
In-country education/dissemination	400,000
Policy studies	500,000
US/Third-country training	150,000
Commodities	50,000
TOTAL [6]	$ 2,350,000

This component will require approximately 48 person months of long-term technical assistance from a natural resource economist/policy analyst to support the activities summarized above. This TA will be attached to the **"Core implementation team".** As presently conceived, the policy analyst will also sit on the "Technical Advisory Committee" and provide input to the working subgroups as necessary. The estimated costs for this activity are $800,000. Approximately, 24 months of short-term technical assistance will be financed to support specific training and policy analysis activities directly related to specific policy areas identified during the inventory or assessment process. The estimated costs for this activity are $450,000.

This project will also support a range of in-country environmental education and dissemination based upon the *Guatemalan Natural Resource Policy Assessment and Analysis* in the form of courses and workshops at the national, municipal and community levels. The estimated costs are $400,000 .

Approximately, 8-10 grants will be provided for specific policy studies and dissemination at an estimated cost of $500,000.

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[6] Note that this figure includes the costs of a contractor to administer the contracting process.

Over the long-term, efforts to improve policy dialogue and stimulate policy reform will be directly related to improved human resource capacity. The project will support on a limited basis:

a. travel and tuition grants for short observational trips to the US and other Latin American countries; and

b. 2 long-term scholarships for master's level study in Resource Economics at a US university. Quality programs in this are can be found at the University of Michigan, University of California(Berkeley), Oregon State University, University of Rhode Island, and Duke University. The total cost for this training is $150,000.

Finally, the component will require the purchase of computer hardware and software for use by the core implementation team. Other communications and audio-visual equipment will be required for training and dissemination. The estimated costs for this equipment is $50,000.

ATTACHMENT I.

A METHODOLOGY FOR POLICY INVENTORY AND AGENDA

A. POLICY INVENTORY COMPONENTS

There are five major components to conducting the policy inventory:

1. Problem Identification

The identification of socio-economic and biophysical problems related to the use of natural resources and the environment establishes in part the scope of the subsequent policy analysis. The initial range of the problems will result from the focus of the CNRM on watershed management and related issues of agricultural, forest and protected areas management. Identification of problems also provides a framework for organizing the policy assessment and facilitating the steps which follow.

Problems might also be organized around resource types (soil, water, trees, etc). It will be important to define problems both at the national and local levels and define to whom and how they are problems since one person's problem may be another person's benefit. In addition, resource use problems often have a time or intergenerational aspect where current use deprives future use.

Participation at both the national and local level should commence from the outset by having reviews or a draft problem description by participants before information gathering commences. Initial participants will should be public and private interested parties as well as stakeholders from national and community levels. The inventory team would then gather information from existing secondary sources as well as from resource users at various levels and provide a draft problem description for participant review.

Participants will review and initially rank problems. Initial policy groupings can also be established using the RENARM Green Book taxonomy. In effect you create a matrix where columns are the problems, the taxonomy established the rows and the initial content of the cells is provided by the team and participants in the form of Guatemalan policies (and institutions).

Bio-physical and socio-economic indicators and the stakeholder groups so affected should be sketched at this point and elaborated and detailed throughout subsequent activities.

2. Policy Identification

This step identifies *de jure* and *de facto* policies and regulations of both public and private institutions at the regional, macroeconomic, sector, subsector and community level which affect the natural

resource base and problems identified above. The main objective(s) and/or outcomes of the respective policies and regulations will be stated. The analytic structure and questions guiding the inventory are provided by the RENARM Green Book.

The team should also identify and incorporate Guatemalan experience and amend or expand the taxonomic structure of the RENARM Green Book as appropriate. Using the taxonomy the team will systematically identify the content of major policies through an examination of secondary sources and interviews with stakeholders in the public and private sector. A series of questions keyed to the analysis of the RENARM Green Book can facilitate field activities.

At the same time as policies are being catalogued, the team should develop and implement a policy oriented participatory rural appraisal (PRA) seeking to understand the on-ground effects of national policies. This PRA should be targeted at the AID project sites, CARE and MAYAREMA, and work closely with closely with other project personnel. The team will also need to be aware of the interdependencies between policies at both the national and community levels and describe those interactions through brief case studies. As with problem descriptions, the stakeholders (winners and losers) should be identified with the policy.

The results of this cataloguing process should be reviewed by participants for accuracy and completeness at both national and local levels. Again, a ranking process on more and less important policies should occur. Tables summarizing key policies by problem area can then be prepared and henceforth serve as a baseline description of the policy situation for a given problem.

3. Institution and Stakeholder Identification

At the same time as policy identification, the identification of the public and private institutions which make or implement the respective policies and regulations should occur. This description outlines relative roles and responsibilities of relevant government and private sector institutions. Institutional maps for both policy categories and problem categories can be prepared by appropriate members of the inventory team which describe the institution, its composition, its role, key actors and key stakeholder groups affected by the institution.

Moreover, detailed descriptions of the most important institutions should contain historical background, an assessment of the strength or weakness of the institution with respect to its role in resource use issues, and other empirical evidence of relevance likely to arise in the information gathering process. For example, governmental and parastatal forest operations have been significant and costly elements of forest policies and the background and performance of these may be important enough to describe in detail.

Particular attention should be paid to institutional bottlenecks and conflicting mandates. This information can be reviewed at the same time and using the same methods as the policy identification process. Similarly, institutional mapping activities should be implemented at the community level and a comparison made between national and community level situations, as well as across communities.

4. Policy Assessment

It will be necessary to make a preliminary qualitative assessment of the impact of these policies and regulations on each of the natural resources. The assessment should identify and discuss linkages, intentional and unintentional, between policies and institutions identified in steps (2) and (3) and the problems in step (1). The assessment should also identify the important trade-offs between short- and long-term economic, welfare, and environmental impacts of the current policy regime. The effects of policies or policy changes on different stakeholders should also be addressed.

The RENARM Green Book provides a summary analysis which can facilitate initial policy assessment. It will, of course, be necessary to adapt and refine the assessment to the Guatemalan context. It is likely that the current understanding of policy/problem interactions might at best be one of identification of the direction (positive or negative) of the relationship. The team and participants jointly may have to address the magnitude (and hence priority) of the relationship.

The institutional maps will help the process of identifying the cumulative effects of a set of policies on the resource base. (The next draft of the analysis part of the Green Book will have an analytically driven index which will help to identify cumulative effects. Clear identification of stakeholders will be needed to make policy analysis and reform priorities transparent.

The inventory team should present this analysis for participant review of content. Particular problem or policy subsets should be reviewed in detail by appropriate working groups of participants. Those groups should reflect national and community level input.

5. Policy Alternatives and Analysis Priorities

This step identifies the main policy alternatives and both reform and analysis agendas. This requires an aggregate ranking of the problem areas in terms of relative importance and identifying which existing policies if changed, or new policies if adopted, would have the greatest impact on the problems identified. The process also involves making trade-offs among multiple objectives. Participants, local and national, involved throughout the process can respond to a proposed ranking drafted by the policy inventory team.

The final element of the RENARM Green Book will be a decision-maker workbook for designing policy strategies and identifying further analysis will be available to use in this activity. This tool can be used for periodic review of progress and changes in the situation.

This step completes a process and a product. The process is designed to develop through a participatory structure and joint national and community and field activities a coherent strategy for policy analysis and Guatemalan demand for and ownership of policy analysis and reform. The product will be a document composed of five chapters based on the five activities herein described.

This document can be disseminated in a loose-leaf notebook form and updated periodically with the results of policy analysis or spontaneously as the situation requires. The initial document (called perhaps *The Guatemalan Natural Resource Policy Assessment and Agenda*) will provide a format for both keeping people informed and for tracking progress (through baseline indicators) of progress. In addition, scopes of work for policy analysis activities will be prepared at the conclusion of the policy inventory process.

SECTION IV: COST ESTIMATE

BUDGET SUMMARY: USAID FUNDS

A. Integrated Watershed Management Component

CARE will receive a U.S. $ 4.0 million grant under a Cooperative Agreement. The amount is expected to cover the following budget lines and amounts:

!	International Personnel	$	
!	Local Personnel		$
!	Commodities		$
!	Training		$
!	Operating and Administrative Costs	$	
!	Travel and Per Diem	$	
!	Administrative Support- Overhead		$
!	Evaluations and Audit	$	
!	Inflation and Contingencies		$
	TOTAL		**$ 4,000,000**

B. Policy Component

! Long-term technical assistance. Senior NRM Policy Advisor/Chief-of-Party. 4 person/years: $800,000

! Short-term technical assistance. Specialized consultants (expat/local). 24 person/months @ avg. cost of $10,000. per person/month: $240,000

- Operational funding:
  - in-country training and dissemination (50/75/75/100): $300,000
  - policy studies (local contractors). 10 to 20 studies at $30-50 thousand each: $500,000
- Offshore training. 2 M.Sc.: $80,000
- Administrative (local hire Senior Project Administrator and two secretaries): $80,000
- Office Rental (Project Office): $96,000
- Commodities (1 vehicle, computers, office equipment, furniture, etc.)[7]: $300,000

C. Monitoring and Evaluation Activities

- Long-term technical assistance. NRM M & E Specialist (expat). 4 person/years: $800,000
- Long-term technical assistance. Social Analyst (local). 4 person/years: $160,000
- Short-term technical assistance. Specialist consultants (expat/local). 18 person/months @ $10,000. avg. cost per month: $180,000
- Operational funding: $100,000
  - in-country training
  - analytical studies
  - publication and reports
- Administrative/Secretarial Support: $48,000
- Commodities (1 vehicle, computers and office equipment, furniture, etc.): $150,000.

TOTAL **$1,438,000**

D. Additional Administrative Support

- Administrative, Accounting and Secretarial staff. 12 person/years (local): $72,000

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[7] It may well be possible to use much of the equipment purchased under the HAD Project for these purposes.

E. GRAND TOTAL USAID $ FUNDING $7,906,000

ANNEX i(a): TECHNICAL ANALYSIS

INTEGRATED WATERSHED MANAGEMENT COMPONENT

A. Introduction

Logically, it is hard to take issue, from a technical feasibility standpoint, with a project which has been 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 (see the institutional analysis) among the principal implementation agencies exists and that is half the battle. 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 have intentionally 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, in a given year and 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 (see the Figure in the Technical Analysis Annex comparing potential land-use and actual land-use).

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 soil 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 interest 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 is being cultivated using inappropriate practices, some highly productive, but 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.

Clearance for agriculture at the 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 very unclear 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.

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"[8] 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

The 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 the communities resident in the pilot watersheds. The reasons behind this community organization approach and what it can achieve are worth reiterating.

One important consideration is the question of efficiency and impact in technology transfer. The human resources trained and available to guide the watershed management process and to promote and extend it among the 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 the community organization for watershed management, if properly implemented will be a renewal of local conviction and capability among rural people that acting as a community they can themselves diagnose and resolve problems. The collective approach also creates the logic for local empowerment and provides a non-threatening forum in which people can speak out about topics of concern, hopefully, in this context, for example, on issues related to the NRM policy framework.

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[8] 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.

As has also been stressed repeatedly, natural resources management frequently can only be addressed through collective decision-making by an organized community. In many communities, there are communal or 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 over the long-run, affect all of the community resident there. The destiny of these watershed communities is inexorably linked, both individually and collectively, to the destiny of the natural resources on which they depend.

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

Equally important is the need for full participation in planning the watershed management activities to be carried out with the support of the project. Early and realistic input from participants regarding their attitudes and interests vis-a-vis NRM and their expectations of the project can be the starting point for the community based needs assessment vital to planning. This, in turn, will get the local people thoroughly engaged and yield: a more realistic planning baseline, lead to a better sense of the doable and the timing of activities for both staff and participants, and help broker the choice 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 their 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 COMPDA, 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 the excess populations of the more fragile ecosystems will also need attention. Likewise, the development of sound land-use strategies for the lowland tropics of the Peten in order to continue to receive those interested in colonizing these areas will be necessary.

Failure to recognize these inexorable constraints will only postpone the final reckoning and lead to greater social disintegration and natural resources degradation. The cost of rehabilitation and the 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 readjustments.

As has been mentioned elsewhere in this project document, many technological interventions are at hand to increase the sustainability of current agricultural production practices. There is a limit, however, to what can be done. In some cases, the farmers' 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 or economic reasons. Soil and water conservation and sustainable agriculture practices are also not universally applicable. They are often more labor intensive, compelling the 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 highland areas of the country.

There are no easy solutions for these dilemmas. Properly executed watershed management planning, however, can go a long way in helping to deal with them. While the planning activities of this project must almost certainly address the near-term, they must as well not loose 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 the 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

The Watershed Management Action Plan 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, for example, 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 revegetation approaches would be more ecologically and economically feasible. Direct seeding, planting by vegetative means (eg. "pseudoestacas" 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. A Comment on 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 that the continuation, however, 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 the watersheds.

The importance of their work there including soil and water conservation measures as water becomes more scarce, and particularly on agrochemical use, will also have important implications for environmental stability. Improved marketing conditions for small holder producers will also be a useful objective of these activities so that the participants are able to capture the full income benefit of their increased production.

The issue of agrochemical use deserves special attention here. The present arrangements for FEAT extensionists working with small producers on the formal *mini-riego* plots to improve their agrochemical use is one of the mitigation recommendations 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.

ANNEX i(b): TECHNICAL ANALYSIS

POLICY 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 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 polices and to coordinate their implementation across sectors.

C. Component Feasibility

The design of the policy component detailed in the Project Description (Section IIIC) emphasizes **process**, **participation**, and **institutional 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 points made in the **Institutional Analysis**.

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 under 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 **Technical Advisory Committee**, will solicit informally and formally recommendations for support of specific analysis, training, and dissemination activities. Participating organizations from the MICUENCA and MAYAREMA projects 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 (Annex iv.) 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".

The **Monitoring and Evaluation** component of CNRM can 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 of the Institution Specialist are relevant in this regard. This consultancy should put considerable effort into analysis of local institutions in order to increase the likelihood of their participation in the policy component.

ANNEX i(c): TECHNICAL ANALYSIS

INSTITUTIONAL COMPONENT

A. Background

The development and implementation of a well designed policy component for the CNRM project will require the 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 as the following analysis indicates, 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 policy. Institutions at the national, regional and community levels need to be organized for policy dialogue, policy analysis and policy implementation.

B. Public Sector

1. Congress, President, and Ministries

The Guatemalan Congress and the Office of the President play a central role in natural resource policy development and implementation. To a large extent this process is based on the design of a body of law (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 *disposiciones municipales*, which allow municipalities the right to manage resources such as water and publicly-held lands. The formulation of legislation takes place on an *ad hoc* basis and with little "analytical" or "popular" input into the process. Those interests with the access and power to influence the process are the most important input into the design of laws.

National-level Ministries and Commissions are charged with the responsibility of implementing the laws and enforcing the rules. However, these institutions are generally regarded as weak and lacking the necessary financial and human resources to adequately carry out policy. At the same time, when public sector institutions do develop policy it often reflects 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.

2. Municipalities

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 land.

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 the total revenues received by the 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.

3. Public Sector Institutions

Key public sector institutions which could play a role in the policy component of the Community Natural Resources Management Project include: The Ministry of Agriculture's Policy Analysis Group (PARAGRO), the *Comisión Nacional de Medio Ambiente* (CONAMA), the *Comisión Nacional de Areas Protegidas* (CONAP), DIGESA, and DIGEBOS. These institutions have a mandate to implement laws which support sustainable agriculture, water and forest resource management and conservation of biological diversity. However, there is a compelling need to: (1) upgrade institutional capacity to analyze policy constraints and bottlenecks and costs and benefits of policies and programs, (2) improve mechanisms for policy feedback from resource users at the community level, municipalities, and regional development councils, and (3) provide environmental education to different resource user groups, particularly communities and municipalities.

a. PARAGRO

Among public sector institutions,the PARAGRO unit attached to the Ministry of Agriculture has received support from RUTA, a World Bank/UNDP/USAID funded effort to improve policy analysis in the agriculture sector. It has also been active in the USAID supported HAD project. It does not undertake its own research and analysis but rather commissions policy analysis and feasibility studies which are undertaken by private firms. While PARAGRO has not undertaken work in natural resources policy, it has a mandate to work on these issues. At the same time, natural resource policy analysis will be a relatively small component of their overall work plan. It does not have in house capacity in the natural resource policy area.

PARAGRO is also expected to have an important role in the execution of a World Bank sector loan and may see its resources both stretched and highly focussed on production and marketing. This would, of course, not prevent it from working on natural resources policy issues, but under this scenario NRM is not likely to be a key component of their work program.

b. CONAMA

CONAMA has developed a detailed work plan including a set of internal policies which address the key institutional concerns such as training and its relationship with other GOG agencies and the private sector over the short, medium and long term. The plan represents a step in the right direction for an organization which has struggled to gain credibility in a less than supportive political environment. One of the most interesting aspects of the plan is its recognition of the role of resource

management at the local level and its desire to link international funding to the identification of local solutions. CONAMA's mandate to coordinate environmental activities of other governmental and non-governmental organizations across sectors and vertically to regional, municipal and local government clearly places it in an advantageous position to play a major role in resource and environmental management.

C. 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.

1. ASIES

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.)

2. CIEN

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. (See Annex iv., Social Analysis, for more details.)

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. Their are no Guatemalan NGO's or private consulting firms exclusively oriented towards policy studies on natural resources management.

D. Summary

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(ie water law). They should play a key role in policy inventory, policy analysis and policy implementation activities.

E. Administrative Arrangements

1. Government of Guatemala/ Private Sector Responsibilities

The design of the policy component detailed in part B of the project description suggests that a "core implementation team" be identified for the management of the process and outputs, but actually commission or farm out actual analysis and training activities. This core team would have a base in both the public and private sector in order to facilitate ownership and participation by both in the CNRM policy component. Based on the institutional analysis undertaken by the DESFIL team, we recommend that ASIES be the private sector base for this project.

A recommendation for the public sector base is more difficult. None of the entities analyzed are ideally suited, and there are advantages and disadvantages to each. AID should, however, consider the level of "profile" it wishes to give to the project. With this in mind and taking into consideration the institutional assessments undertaken above, the DESFIL team believes that AID should give strong consideration to making CONAMA the public sector base. From the point of view of the Mission objective and long term goal, CONAMA is the best suited to assume the role as the public sector institution core team member. Other public sector entities described above would dilute the resource management focus of the policy component.

2. Core Implementation Team and A.I.D. Responsibilities

The core team and USAID will be responsible for selecting the members of the Technical Advisory Committee (TAC). The TAC should have representation from key public sector agencies whose policies and programs impact on natural resources, relevant USAID projects (MAYAREMA and CNRM), the private sector and environmental NGO's.

The core team and USAID will also be responsible for selecting the long term technical advisor and preparing a detailed scope of work for his/her activities on an annual basis. The advisor should have a strong record in natural resources management and understand the Guatemalan public and private sector terrain. Above all he/she should be able to work closely with the core team in order to facilitate the policy dialogue, policy process and implementation of the policy agenda.

3. Technical Advisory Group and Contractor Responsibilities

Once the policy agenda has been defined and the sequencing of activities established by the Technical Advisory Group, the project contractor will be responsible for ensuring that administrative requirements are implemented according to specific scopes of work.

4. A.I.D. Responsibilities

AID'S contracting requirements will necessitate using a certifiable entity to manage the contracting activities in the policy component. This could be accomplished through a buy-in to a centrally funded project or through a direct contract to a local private for profit or non-profit firm. The contractor, through the long-term natural resources policy advisor, would work closely with the core team to insure that contractual requirements are met by Guatemalan and US entities which participate in project's execution.

Given the modest amount of funding for the initial phase of the policy component, the Mission should give serious consideration to using administrative arrangements which keep the total costs of administration including overheads to a minimum. Contracting a local (certifiable) firm should minimize these costs.

ANNEX iv: SOCIAL ANALYSIS

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

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A. 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.

B. SUMMARY OF RECOMMENDATIONS

1. 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.**

2. 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.**

3. 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.**

- **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.**

4. 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.**

5. 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.**

6. 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.**

7. 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.**

8. 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.**

9. 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.**

10. 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.**

11. 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.**

C. 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: Caseriós, 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.

D. 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).

- The CARE information is very general. In other words, it gives only a surface hint of what is really going on with local people.[9]

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

- **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

- **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, should be a part of the Guatemalan team assessing NRM policy during the first six months. (See the Policy Assessment section.)**

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[9] CARE is currently beginning a study of women's participation in the project area, carried out by senior Social Work students at the University of San Carlos. It is assumed that these data will be incorporated in Project plans.

' **A Social Scientist, familiar with rural Guatemala, including issues of community institutions and gender, should be a part of the Policy Technical Advisory Committee. (See the Policy Analysis section.)**

MONITORING & EVALUATION

' **Include a Social Scientist in the Monitoring & Evaluation Component of the Project. (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.

E. 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.[10]

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.**

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[10] Proyecto Aldea Global. *Reporte Anual, 1990-1991*. Tegucigalpa, Honduras: Project Global Village, 1991, p. 1.

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

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.[11]

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.[12]

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[11] 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.)

[12] 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.[13]

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* [14] 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.**

- **The gender ratio of IWMC staff, from coordinators through promoters, should reflect the gender ratio of the beneficiary population, i.e., 50 percent women. (See Section G.)**

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[13] 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.)

[14] "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.

- **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.)**

F. 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.

P 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.

P 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. 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. "ENDOGAMOUS" AND "EXOGAMOUS" 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 "endogamous" (internally developed) and "exogamous" (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.[15] 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[16] -- 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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[15] 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.

[16] 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:

P FONAPAZ: NGO Analysis, 1992 [17]

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

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[17] 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.

P FUNDESA: Directory of PVOs, 1989 [18]

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:

- **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.**

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[18] FUNDESA (Guatemalan Development Foundation). *Directory of Private Voluntary Organizations Serving the Guatemalan Community*. Guatemala, 1989. Funded by USAID/Guatemala.

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). [19]

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. [20]

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.**

- **CNRM should coordinate its work with local GPS alumni from such programs as Natural Resource Management and Integrated Pest Management.**

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[19] 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.

[20] 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.

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.**

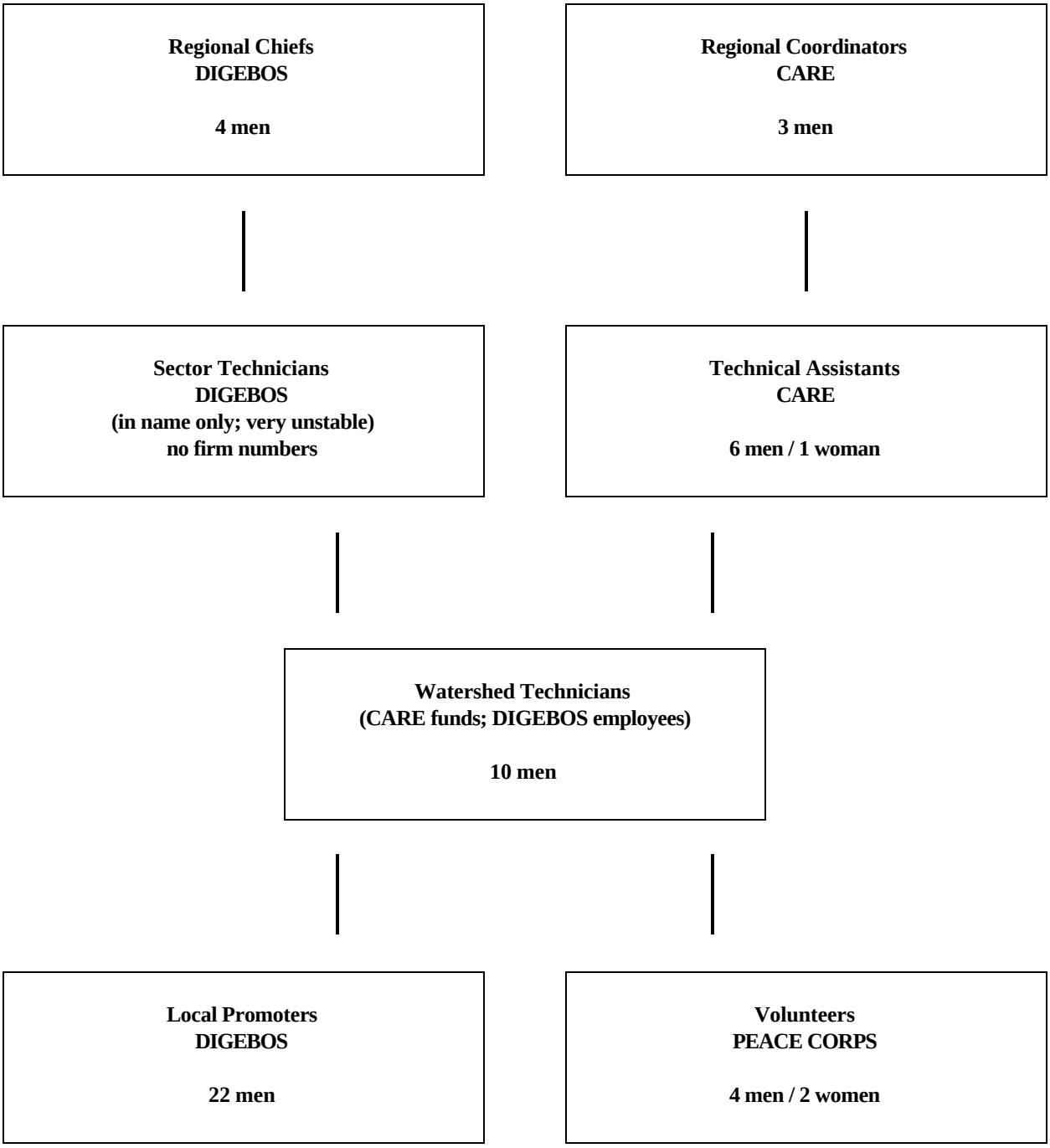
- **The Policy implementor should also establish links with the Association, investigating ways of using it as a network for information flow up and down the system.**

G. 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)



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 work 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 are.) 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.

H. 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.**

I. 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.

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ATTACHMENT I.

SUMMARY OF 20 COMPDA WATERSHED AREAS [21]

DEPARTMENT	WATERSHED	MUNICIPALITIES *	COMMUNITIES
Chimaltenango	Paquip	San José Poaquil Tecpan*	La Cumbre, Palel, Paquip
	Xelubacya	Sta. Apolonio*	Pacul, Poaquil, Stn. Apolonia
	Xepanil	Tecpan* Sta. Apolonio*	Paraybel, Xepac, Xepanil
Guatemala	El Molino	Palencia*	Buena Vista, Marillanos, Sacabastal
	Los Cubes	Palencia*	Lo de Silva, Pie del Cerro, Tres Quebradas
Huehuetenango	Batzolon	Todos Santos*	Batzolon
	Esquizal	San Sebastian*	Caserío Tuiscusnaque, Chejoj, Tuisquizal
	Rio Colorado	San Sebastian*	Skchim, Xelam, Xexap
	Selegua	Chiantla*	Buena Vista, Cuatro Caminos, El Pino, El Rancho, Potrerillos, Quilinco, Rio Escondido, San Pablo, Sibila
	Tres Cruces	Todos Santos*	Chicoy, Tres Cruces, Zunil
	Villa Alicia	Todos Santos*	Villa Alicia
Jutiapa	Medrano	Jutiapa*	La Montanita
	Monte Largo	Jutiapa*	Cuesta del Guayabo, El Limo
	Tahuapa	Yupiltepeque	El Limon, El Sause, El Sillon
	Tamazulapa	Asunción Mita*	Aguas Finas, Animas Lomas, Buenos Aires, Girones, Las Crucitas, Loma Larga, San Lorenzo
	San Pedro	Jutiapa*	Chico Hilario, Encino Gacho, Huertas, Patios de Trigo, Patios Quebrada de Agua
Quetzaltenango	Talcanac	San Martín Sacatepequez*	Centro, La Estancia, Loblazan, Sta. Ines, Talcanac, Toj Alic, Toj Con, Tuichin, Xecxuc
San Marcos	Esquipulas	Tejutla*	Alta Vista, Buena Vista, Canoa de Piedra, El Rosario, El Tesoro, Rodeo, San Sebastian, Vista H. Chiguachin,
	La Democracia	Tejutla*	Cerro Serchil, La Democracia, La Union, Los Cerezos, Los Frutales, Los Puentes, L.P. Serchil, Pena Flor, San Antonio, Serchil
	Nahuala	San Marcos*	La Grandeza, La Laguna, Piedra G., San Andres Chapil, San Jose Caben

* Municipalities marked with * have been included in the Municipal Development Training of the Guatemalan Peace Scholarship. For names and locations of participants (from municipios and aldeas), contact Mr. Scott Golman, Director, GPS (Guatemalan Peace Scholarships). Tel: 31.05.85 / 34.62.81.

[21] Source: Luís A. Lopez, Associate Chief, Agroforestry and Watershed Projects, CARE-Guatemala, March 1993.

DEPARTMENT	WATERSHED	AREA (Km^2)	TOTAL POPULATION	PARTICIPANTS TOTAL	MEN	WOMEN	CHILDREN
Chimaltenango	Paquip	4.12	3,000	45	45	0	0
	Xelubacya	3.12	1,124	45	26	15	4
	Xepanil	11.2	1,850	145	145	0	0
Guatemala	El Molino	6.80	1,000	45	23	16	6
	Los Cubes	9.20	1,002	28	12	7	9
Huehuetenango	Batzolon	5.92	235	15	15	0	0
	Esquizal	19.20	2,189	84	69	15	0
	Rio Colorado	8.12	4,500	144	144	0	0
	Selegua	18.20	4,874	215	107	64	44
	Tres Cruces	6.00	2,714	74	74	0	0
	Villa Alicia	2.76	495	25	25	0	0
Jutiapa	Medrano	27.08	400	12	12	0	0
	Monte Largo	19.68	3,200	15	15	0	0
	Tahuapa	30.68	913	25	25	0	0
	Tamazulapa	24.32	200	52	45	7	22
	San Pedro	23.92	1,478	67	67	0	0
Quetzaltenango	Talcanac	28.60	5,636	257	187	54	16
San Marcos	Esquipulas	25.00	6,732	200	145	12	43
	La Democracia	19.00	5,139	304	137	89	78
	Nahuala	30.30	17,462	135	56	64	15
	TOTALS		64,143	1,954	1,374	343	237
	PERCENT OF TOTAL PARTICIPANTS			100%	70%	18%	12%

ATTACHMENT II.

LABOR INPUTS FOR TRADITIONAL CROPS AND NEW EXPORT VEGETABLES [22]

[22] Source: 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 III.

FINANCE AND PURCHASE OF MAJOR NON-FOOD EXPENDITURES IN A HIGHLAND AREA [23]

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	51.1	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
Domestic Technology	7.6	30.8	34.9	21.5	5.3

[23] Source: Katz, Elizabeth. "Separate Spheres and the 'Conjugal Contact': Evidence from Highland Guatemala."

Animals	15.4	35.9	23.1	18.0	7.8