

**DRAFT EVALUATION REPORT**

17 SEP 1996

RECIBIDO  
Turrialba, Costa Rica

// **MID-TERM PROJECT EVALUATION**

**SUSTAINABLE AGRO-SILVOPASTORAL  
SYSTEMS FOR SMALL FARMERS  
IN THE CENTRAL AMERICAN DRY TROPICS**

**Project Managed By:**

**Centro Agronomico Tropical de  
Investigacion Y Ensenanza (CATIE)**

**Evaluation Client:**

**Central America Desk, Americas Branch  
Canadian International Development Agency**

**Evaluation Team**

✓  
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**August, 1992**

## EXECUTIVE SUMMARY

### 1. Project Background

The project was approved by CIDA in March 1989, with funding of CDN\$3.0M over a four-year period. The Centro Agronomico Tropical de Investigacion y Ensenanza (CATIE), an agricultural research and training institute for Central America with headquarters in Turrialba, Costa Rica, was chosen as project executing agency. The Project target group is the small and medium-sized farms on hillside locations in the dry tropics of Central America where it was believed that inadequate agricultural practices on sloping lands was leading to serious deterioration of soil and forest resources.

The project goal is to improve production and income options of small farmers in Central America. The project purpose or objectives have been refined and adjusted over time in response to the realities of project implementation. The three principal objectives, as now formulated, are to: validate technologies at the farm level to improve the productivity of the producer and his family within a sustainable production framework; formulate and validate a model of integrated farm development based on agro-silvopastoral systems, and; documentation and diffusion of results.

The Project started in Guatemala (Jutiapa) in 1989, in Honduras at the end of 1990, in Nicaragua at the beginning of 1991 and El Salvador at the end of that year. A request is being made for the Project to continue through 1993/94.

### 2. The Evaluation

The evaluation objective was to assist the project to be more efficient and effective, as well as to provide lessons learned for other projects. The evaluation took place during June-July 1992. In addition to visiting project headquarters in Turrialba, Costa Rica, the Team travelled to all four countries where project activities are taking place. The Team was comprised of three consultants, with the following areas of responsibility: project management and institutional strengthening; gender analysis (Women in Development), and; research in agro-silvopastoral production systems.

### 3. Project Structure and Management

**Rationale and Critical Assumptions.** The rationale for working with small and medium-sized hillside farmers in the dry tropics continues valid. A number of critical assumptions were identified in project planning, but a number of others were not, including: the adequacy of CATIE's financial and human resources to manage the Project; availability and relevance of CATIE professional staff experience to provide the Project with necessary technical assistance, and; availability within CATIE of methodologies on research validation and systems analysis needed by the Project. All three areas have presented shortcomings that have slowed Project development at one stage or another.

**Project Structure.** The structure of the Project has increased in complexity over time: headquarters in Costa Rica, activities in four countries and from 6-8 cooperating agencies in each. The Project has 23 staff members and works with approximately 95 counterpart staff in the field. The level of cooperation and coordination within the Project and with other agencies at the present time is commendable. CATIE scientists have provided technical support on specific issues, including baseline studies and training, but such input has declined over time.

**Project Management.** During the first two years, headquarters management staff paid by CATIE provided minimal coordination and contributed in a minor way to technical management. Even reporting to the donor was sporadic and haphazard. As a result, activities in Guatemala were developed without firm direction. With the appointment of a Technical Coordinator in August of 1991 and other headquarters staff in the same year, paid with Project funds, both the administration and the technical direction of the Project has improved. The Project Steering Committee has met twice, but has had a relatively passive role in project policy development.

With regard to financial management, the Project had earlier problems which are now largely resolved. A number of budget revisions have taken place, in large part to accommodate expenses such as project headquarters staff that were originally assumed to be CATIE responsibility or were not planned for.

**Planning and Reporting.** The Inception Report prepared by the Project was inadequate and partly due to this the Project suffered from lack of direction during the first two years. Full annual work plans have been prepared for the first time in FY 1992/93. Reporting has increased and improved dramatically over the last 18 months, to the point where both headquarters and country teams are seen to be over-reporting, requiring rationalization of this effort.

#### 4. Project Implementation

**Field Operations.** The Project works closely with the Ministries of Agriculture in each country and depends in large part on extension staff seconded to it, on a full or part-time basis. The Ministries have shown significant interest in the Project, but budget shortages and staff changes have limited their input.

**Project Activity Focus.** The Project's principal focus is validation of technologies appropriate for problems faced by resource-poor farmers in the region. A number of other activities have been undertaken, including adaptive research, special studies, training and documentation/information dissemination. In some cases the Project appears to be an integrated rural development project. Farmers and some staff see it as an improved rural extension service. Generally speaking the Project is undertaking too much, without a clear vision of priority actions or final products.

**Technology Validation.** The verification and documentation of the 'fit' of research results at the farm level, so that these can be disseminated more effectively on a large scale, is an important activity that is becoming widely accepted in the research and extension communities. Recognition of the importance of the social dimensions of validation is growing among project staff, but the inheritance from

CATIE and other research organizations has been limited in this regard. This is particularly true for gender analysis.

At this advanced date in the project cycle, documents on the methodology of validation are still being elaborated and disseminated among project staff, indicating the lack of secure orientation at the beginning of the Project. Considerable variation in understanding the rationale and process still exists among project staff members, resulting in quite different forms of validation between countries and even within countries, making comparison of results quite difficult.

The range of technologies being validated is large (approximately 20 basic technologies, some with variations) and among these no clear priorities have been established. There is an urgent need to focus, prioritize activities around a set of promising technologies and abandon others. Project activities are divided into four sub-systems: Livestock, Agriculture, Forestry-agroforestry and Home. While Project documents mention integration of technologies frequently, most technologies in each sub-system stand alone, with little attempt to combine them in a problem-solving approach.

The project has made some considerable progress in establishing a sound system of validation in difficult areas and in very diverse countries. There is no doubt that with solid leadership and a sharper focus on the essential, the project will make a solid contribution to the research and dissemination system. By establishing the usefulness of validation, an opportunity is created to build this into the research and extension systems of the Ministries of Agriculture in the different countries. Ideally this new process could then form the beginning of a more thorough and formalized system of research, on-farm research, validation and extension.

**Training and Research.** The Project has developed an impressive training programme, although training in validation methodology and gender analysis has lagged behind. In terms of rationale, the adaptive research activities should focus on technology adaptation, to permit subsequent validation. In fact there appears to be little sequential relationship between much of the research and validation activities, leading the Team to conclude that the Project should transfer the most promising research activities to research institutions and suspend the rest.

A number of special studies have been carried out, ranging from nutrition to anthropology. While these will potentially enrich the body of knowledge the Project is developing, there is a tendency to use different approaches in different countries (nutrition studies) or to use the case study approach, both making it difficult to draw conclusions applicable to all four countries. As in the case of technology verification, more effort needs to be placed on ensuring quality control and comparability of results.

## **5. Social Dynamics and Gender Analysis**

**Social Dynamics.** The presence of social scientists at project headquarters has reinforced the need and opportunity for systematic social research, including gender analysis. Originally, social research in the Project concentrated on

family nutrition. Presently, the spectrum has expanded to include the overall social dynamics of participant families, including nutrition, living conditions, distribution of labour and resources, and gender analysis.

**Gender Analysis.** There was an inadequate concept or analysis of the role of women in the farming system by the Project, leading to their under-representation in project activities. Additionally, WID issues were diluted because this mandate was used as a catch-all for all social issues relating to family living conditions. Presently, the limited understanding by project staff is apparent and efforts are being made to expand knowledge on the role of women within the farming system. The selection of women farmers as Project participants, albeit somewhat overdue, is complying with Project mandate to include women who play a key role in farm management activities.

There is still insufficient understanding at CATIE and in most of the countries of the role, functions and needs of women engaged in the agricultural production system. Women's participation in productive activities is widely unrecognized and undervalued by society at large and by women themselves. A cooperative relationship in the farm productive system was observed between men and women participants in the Project. Furthermore, the division of labour and decision-making on the farm unit is not homogeneous.

## 6. Recommendations

The following are the principal recommendations drawn from evaluation analysis:

### A. Recommendations to CIDA

1. Approval should be given for the Project to continue through FY 1993/94, subject to availability of funds, but the Operations Plan for that year should clearly show how project activities will be phased out (p.7).

### B. Recommendations to CIDA and CATIE

2. Given the short period left for full-scale project activities (to end of 1993), it is recommended that a policy of continuity of Project leadership be pursued at all levels (p.11).

3. Important changes in project objectives should be made through a clear decision-making process at the appropriate level and recorded as amendments to the Inception Report (p.28).

4. Clarification is necessary regarding the responsibility and authority of the Project Steering Committee. Meeting dates, agendas and pre-meeting information should be organized so as to maximize meeting efficiency (p.13).

5. CIDA and CATIE should agree on project property disposition before the Project terminates (p.17).

### **C. Recommendations to CIDA and Project Management**

6. Project reporting should be simplified and strengthened, by reducing monthly progress reporting at the country level and quarterly progress reporting to CIDA (p.15).

### **D. Recommendations to CATIE**

7. It is recommended that CATIE analyze its limitations in handling the social dynamics, such as gender issues, when researching and validating technologies (p.44).

### **E. Recommendations to Project Management**

8. The project focus requires sharpening. It is recommended that activities concentrate on a set of technology validations that permit the Project to attain its objectives, dropping some technologies and resisting the introduction of new ones. Present research activities should be phased out in 1992/93, transferring promising activities to CATIE or other research institutions (p.30).

9. An annual plan for project headquarters staff, in similar detail to that of country plans, is a necessary management tool and should be included in the 1993/94 Work Plan (p.14).

10. Training of project and counterpart staff on validation methodology must continue. At the same time there needs to be a system of supervision and quality control to ensure that the implementation of technologies follows this orientation (p.29).

11. In order to fully utilize validation results, it will be necessary to document the process of validation in each case, for use by both management and field staff, and then establish a clear monitoring system to ensure that implementation is of a high standard of quality (p.37).

12. It is recommended that the Project design mechanisms to discuss and apply findings and existing knowledge regarding women in the farming system among Project staff and counterparts (p.44).

13. The Project should ensure uniformity of gender and other social variable data collection, and establish how this data will be used, both within the Project and as final project outputs (p.50).

14. The Project should continue offering training on gender issues to staff and counterpart members, both male and female, and systematize these through a formal training plan (p.52).

15. Given the financial and structural problems facing many government agencies, the Project should expand its contacts with farmer and non-governmental organizations(p.53).

16. The plan to grant a scholarship for postgraduate studies at CATIE no longer has great significance for the Project and should be reviewed(p.54).

## ACKNOWLEDGEMENTS

The Evaluation Team would like to take this opportunity to thank Project staff for their cooperation and patience in providing the necessary information and explanations in order for us to quickly understand this complex and challenging Project. Special thanks are due the project participant families we visited and from whom we learned much about farming hillsides in dry, tropical Central America.

## NOTE TO THE READER

- \* This is a draft evaluation report version, subject to revision and not for quotation. The Evaluation Team welcomes your comments and corrections. Please mail or fax your comments to reach us before September 30, 1992:

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- \* The Agro-Silvopastoral project will be referred to as "the Project" or the CATIE/ACDI project in the text of this report.

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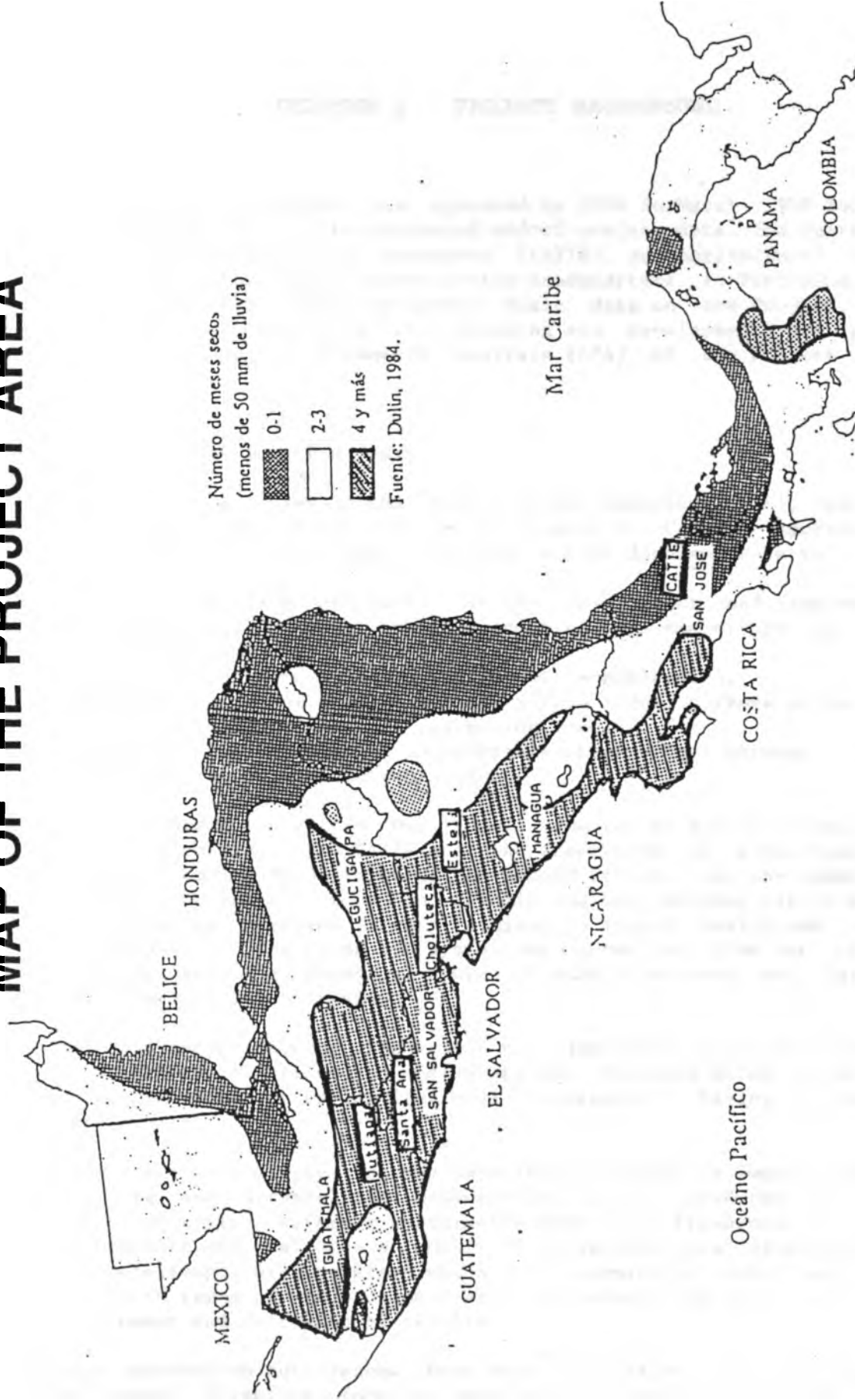
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## LIST OF ACRONYMS

CATIE	Centro Agronomico Tropical de Investigacion y Ensenanza (Turrialba, Costa Rica)
CENTA	Centro de Tecnologia Agropecuaria (El Salvador)
CIDA	Canadian International Development Agency
DIGEBOS	Direccion General de Bosques (Guatemala)
DIGESA	Direccion General de Servicios Agricolas (Guatemala)
DIGESEPE	Direccion General de Servicios Pecuarios (Guatemala)
FY	Fiscal Year
GIT	Grupo Interdisciplinar de Trabajo (CATIE)
ICTA	Instituto de Ciencia y Tecnologia Agricolas (Guatemala)
IDB	Inter-American Development Bank
IDRC	International Development Research Centre
IICA	Instituto Interamericano de Cooperacion para la Agricultura (Costa Rica)
INCAP	Instituto de Nutricion de Central America e Panama (Guatemala)
INPOP	Instituto Nacional de Formacion Profissional (Honduras)
LFA	Logical Framework Analysis
Proyecto LUPE	Land Use Productivity Enhancement Project (Honduras)
M	Million
MAG	Ministerio de Agricultura y Ganaderia (Nicaragua)
MAGA	Ministerio de Agricultura, Ganaderia y Alimentacion (Guatemala)
MED	Ministerio de Educacion (Nicaragua)
MINSA	Ministerio de Salud (Nicaragua)
MOU	Memorandum of Understanding
NGO	Non-Governmental Organization
PAM	Project Approval Memorandum
POA	Plan Operativo Anual
PSC	Project Steering Committee
SRN	Secretaria de Recursos Naturales (Honduras)
UNAH	Universidad Nacional Autonoma de Honduras
USAID	United States Development Agency
WID	Women in Development

# MAP OF THE PROJECT AREA



Fuente : Leonard, H.J. 1985. Recursos Naturales y Desarrollo Económico en América Central

## CHAPTER 1. PROJECT BACKGROUND

This CDNS\$ 3.0 million project was approved by CIDA in March 1989 for a four-year period. March 1994 is now the estimated end-of-project date. The Centro Agronomico Tropical de Investigacion y Ensenanza (CATIE), an agricultural research and training institute for Central America with headquarters in Turrialba, Costa Rica, was chosen as project executing agency. Basic data on the Project, including a chronology of major events in its planning and development, are presented in Figure 1.1. The Logical Framework Analysis (LFA) of the Project is given in Appendix 1.1.

### 1.1. Project Goal and Purpose

The project goal, as given in the 1989 Plan of Operations (POP), was "to improve production and income options of small farmers in Central America." The four principal purposes of the Project presented in this document were to:

- Design, validate and assist in the development and implementation of improved dual purpose cattle production systems within an agro-silvo-pastoral framework;
- Enhance forest conservation and forest re-generation;
- Enhance the use of criollo cattle within a dual purpose production system based on their performance evaluation, and;
- Enhance the transfer of appropriate technology through training and improved information dissemination.

The strong emphasis on cattle was largely due to an active animal science and genetics research group at CATIE and the experience of a dual-purpose cattle project in Guatemala. By decision of the second Project Steering Committee meeting (August 1991), the specific focus on criollo and dual-purpose cattle was dropped. Work with livestock has been largely limited to animal health and supplementary feeding. Emphasis on the crops sub-system has grown over time out of recognition that this represents the principal source of subsistence and cash income for most small farm families in the region.

Based on this evolution, the Project is now described by project staff (Project Summary in Program II files) as being applied research based on an integrated systems approach and inter-institutional cooperation, having as its principal objectives:

- Validate technologies at the farm level in order to improve the level of living and increase the productivity of the producer and his family (coejecutores), within a sustainable production framework;
- Formulate and validate a model of integrated farm development based on agro-silvopastoral systems which is economically viable and sustainable both in terms of socioeconomic and environmental criteria, and;
- Document and diffusion of results.

Four farm production sub-systems have been identified as focus for the above research: crops, livestock, forestry-agroforestry and the home component. Other

related activities include: adaptive research on technologies, training to ensure sustainability of project methodology, studies to characterize the production sub-systems and measure project impact, and emphasis on women in the production process.

While this re-statement of project objectives is based on trial and error of project activities over the past three years and closely coincides with what the Project is presently doing, the change of focus that this implies is not clearly documented in project reporting.

## 1.2. Project Scope and Activities

Project activities were planned at three project sites in Guatemala, Nicaragua and El Salvador. Activities started in Guatemala (Jutiapa) in 1989 but political instability in El Salvador resulted in Honduras (Choluteca) taking its place. Limited project management capacity and government changes in Honduras and Nicaragua (Esteli) delayed start-up in those countries until early 1991. El Salvador (Santa Ana) was subsequently added to the Project at the end of 1991. Project staff in each country typically work with a number of government agencies and other institutions. The project target group has been defined as small and medium-sized farms in the hilly regions of the dry tropics of Central America. The land must be owned by the producer and cattle must be an important production component. Approximately 30 farmer participants or Coejecutores have been chosen in each country.

The principal project activity is the validation of technologies selected to address the key problems in attaining the goal of an increased level of production and productivity that is sustainable over time. Between 20-25 "technologies" have been selected for validation in each country, a sub-set of which are common to all countries. The technologies are grouped around the four farm sub-systems identified by the Project. The Home Sub-System was included in the Project in an attempt to meet CIDA's requirement that the participation of women in the Project receive special attention.

## 1.3. The Project Executing Agency

The Project had its origin in CATIE and this organization was selected by CIDA as executing agency based on a number of strengths the organization offered in 1988 when project planning took place (POP 1989, p. 1):

- Focus on agroforestry and natural resource management;
- Strong links with national agricultural agencies/programs in the region;
- Scientists able to provide technical assistance to the Project, and;
- Experience with related applied research programs.

Since 1988 CATIE has undergone various changes, based on the results of the External Review of 1990 and the re-organization presently taking place under the new director general. CATIE's ability to provide management and technical services to the Project during this period is examined in Chapter 3.

## FIGURE 1.1. BASIC PROJECT DATA AND CHRONOLOGY

<b>Basic Project Data:</b>	
CIDA Project No.	910/16439
CIDA Commitment No.	93983
CIDA Budget	CDN\$3.0 M
Project Executing Agency	CATIE
Original Funding Period	1989/90-1992/93
Present End-of-Project Estimate	March 1994
<b>Project Documentation:</b>	
Project Request Date	August 1987
Project Identification Memorandum	June 1988
Plan of Operations (Initial)	September 1988
CIDA Site Identification Mission	November 1988
Plan of Operations (Final)	February 1989
Project Approval Memorandum	March 1989
Contribution Agreement CIDA/CATIE	April 1989
Project Inception Report (CATIE)	May 1990
Amendment to Contribution Agreement	December 1991
<b>Funding and Reporting History:</b>	
First Tranche of Funding to CATIE	September 1989
First Qtrly. Financial Report to CIDA	April 1990
First Qtrly. Activity Report to CIDA	June 1991
<b>Country/CATIE Project Agreements:</b>	
Guatemala	May 1989
Honduras	Mid 1990
Nicaragua	December 1989
El Salvador	October 1991
<b>Start-up of Project Activities:</b>	
Guatemala	January 1990
Honduras	December 1990
Nicaragua	February 1991
El Salvador	December 1991
<b>Steering Committee Meetings:</b>	
First Meeting	June 1990
Second Meeting	August 1991
<b>Project Monitoring Trips:</b>	
First	August 1989
Second	April 1990
Third	October 1990
Fourth	February 1991
Fifth	October 1991
Sixth	February 1992

## **CHAPTER 2. EVALUATION OBJECTIVES AND METHODOLOGY**

### **2.1. Evaluation Objective**

As given in the Evaluation Terms of Reference (Appendix 2.1), the evaluation objective is to assist the project to be more efficient and effective. The evaluation was also to provide lessons learned to assist this and similar CIDA projects to more fully reach objectives.

Since this was a mid-term evaluation, relatively little emphasis was placed on measuring project impact. The Team was concerned, however, with the specific results the Project will attain by the end of this funding phase and the minimum conditions necessary for CIDA to consider funding for future activities.

### **2.2. Evaluation Scope and Focus**

The evaluation assessed Project activities since start-up in mid 1987. The various issues given in the Evaluation Terms of Reference (TORS) have been analyzed in the following report chapters:

- Chapter 3. Project Structure and Management.** Rationale of project structure, management and implementation; CATIE project management and administrative support; project decision-making processes; country agreement negotiation; role of the project Steering Committee, and; progress and financial reporting.
- Chapter 4. Research Activities.** Farmer participant selection; technical assistance provided by CATIE; technologies in the process of validation and their socioeconomic viability; development of methodology and data analysis; environmental impact.
- Chapter 5. Social Development.** Role of women in agricultural production; participation, by gender, in the Project; activities to promote gender awareness/equality of participation; women as farmers and project staff.
- Chapter 6. Institutional Strengthening.** Collaboration with other institutions and development projects; coherence of major economic and agricultural policies in each participant country with respect to Project objectives; nature and relevance of training in each country and in CATIE.

### **2.3. Methodology of the Evaluation**

**Data Collection and Analysis.** Information-gathering techniques included: reviews of Project files in CIDA-Canada and CIDA-Costa Rica; analysis of documents related to Project planning, reporting and other relevant aspects; structured interviews

with Project stakeholders and other qualified persons, and; site visits in the four participant countries.

The Team interviewed persons in the following interview groups:

- CIDA staff (Canada and Costa Rica);
- CATIE/CIDA project management staff;
- CATIE management and scientists supporting the Project;
- CATIE/CIDA project field staff in each country;
- Staff of cooperating agencies at project country sites;
- Participating farm family members (both man and women), and;
- Other government and non-government organization staff.

Most data was gathered through structured interviews rather than questionnaires. Requests for specific information on staffing and participant families in each country were made in tabular form. Examples of both the interview formats and the information tables are presented as Appendix 2.2.

In addition to visiting project headquarters in Turrialba, Costa Rica, the Team travelled to all four countries where project activities are taking place. From San Salvador the Team travelled by car to visit the El Salvador site in Santa Ana. From here the Team continued by road to Jutiapa, Guatemala. After flying from Guatemala City to Tegucigalpa, the Team travelled by road to Choluteca, the Honduran site of project activities. The final travel segment, from Choluteca to Esteli, Nicaragua, was also covered in project vehicles. The itinerary of the Team is presented as Appendix 2.3. The list of persons interviewed (collectively or individually) is presented in Appendix 2.4.

**Team Structure and Responsibilities.** The Team was comprised of three consultants, with the following areas of responsibility:

- Project management and institutional strengthening;
- Gender analysis (Women in Development), and;
- Research in Agro-silvopastoral production systems.

Responsibility for analysis and report writing followed the same general division. The original mandate of the consultant in Gender Analysis was broadened to include a more general analysis of the social dynamics of the Project, of which gender analysis and the role of women were seen as important dimensions. Project activities in the Home Sub-system were also analyzed by this consultant.

**Reporting.** Reporting activities included: a verbal debriefing with CATIE staff in each participant country; debriefing with Project and CATIE staff in Turrialba; debriefing with CIDA staff in San Jose and Hull; preparation of the Draft Evaluation Report, and; revision of the draft report and presentation of the Final Evaluation Report to CIDA.



## CHAPTER 3. PROJECT STRUCTURE AND MANAGEMENT

### 3.1. Project Rationale and Critical Assumptions

**Project Rationale.** The Project was designed around a diagnosis of the agricultural sector in Central America (Appendix C, POP 1989), which identified problems relating to: decreasing production of food commodities (eg. milk and meat); predominance of small and medium-sized farms on dry, hillside locations, and; inadequate agricultural practices on sloping lands, leading to serious deterioration of soil and forest resources. Project planning documents cited the experience of CATIE in addressing these problems, including involvement in farming systems research since 1975 and various IDRC, IDB and USAID-funded projects on small farm and livestock production systems dating from 1977.

When the Project was planned in 1988 it was seen as an outreach activity for CATIE in the member countries, as well as an opportunity for the institution to develop interdisciplinary team activities among staff members. The new Director General also sees the Project as an important signal of CATIE presence in the region.

Field observations in participating countries led the Evaluation Team to confirm the need for continued promotion of environmentally sustainable production activities on hillside farms in dry tropic areas, thus reaffirming the project rationale. The project is also consistent with CIDA's most recent Central America Programme Strategy statement which identifies "sustainable development of natural resources" as a regional priority. While the selection of CATIE as executing agency also appears correct, its contribution to project development has been less than originally expected, an aspect that will be examined in this report.

**Critical Assumptions.** A number of assumptions in project planning are identified in the LFA, including support from member countries, political stability, representativeness of participant farmers and the adequacy of CATIE's available technologies. Political instability (El Salvador), changes in government (Nicaragua and Honduras) and changes in national organizations have slowed project development somewhat. The assumption that CATIE had a large number of production technologies available for use by the Project did not prove to be correct.

Other critical assumptions, implicit in the project planning process, include:

- Adequacy of CATIE's financial and human resources to manage the Project;
- Availability and relevance of CATIE professional staff experience to provide the Project with necessary technical assistance;
- Availability within CATIE of methodology on research validation and systems analysis needed by the Project, and;
- Availability of experience from other CATIE projects/programmes.

While these assumptions were indeed critical for project implementation, all have proven invalid to some extent. Particularly difficult to understand is how little the Project has learned from other CATIE projects. This may be due to the fact

that Project staff have largely come from outside the organization, although the Project Director was simultaneously director of CATIE's Program II for the last two years. Lack of communication between projects within CATIE was also identified as a contributing factor. The impact of these shortcomings on project development will be examined below.

### **3.2. Project Structure**

#### **3.2.1. Project Duration and Future Funding**

**Project Duration.** The 1989 POP budgeted project activity over four years, from 1989/90 to 1992/93. The Project moved slowly in 1989, with CIDA making the first funding advance to CATIE only in September of that year. While activities started in Guatemala in January 1990, it was one year before activities were fully under way in Honduras and Nicaragua and two years for El Salvador. Disbursements have been slow as well, with only 14% of project budget spent during the first two years and 41% by the end of fiscal year (FY) 1991/92. The December 1991 amendment to the MOU extended the Project to the end of December, 1993. Project staff now wish to request an extension to March 1994. Analysis of existing funds suggests that this is a feasible target, but an early budgeting exercise for 1993/94 is necessary to ensure that sufficient funds are available.

**Recommendation:** Approval should be given for the Project to continue through FY 1993/94, subject to availability of funds, but the Operations Plan for that year should clearly show how project activities will be phased out.

**Future Funding.** The Team was asked to comment on future activities of and funding for the Project. As described above, the rationale of project activities continues relevant and the slow rate of early project development indicates that a number of tasks may be incomplete when present funding ends. Additionally, the Project is presently well organized and making major strides in terms of methodology and data systematization.

After deliberation, the Team has decided that there is insufficient evidence of concrete results at the present time to recommend a Second Phase. Project progress will need to be reviewed again in late 1993 to determine the appropriateness of a project extension. In the meantime, project staff must clearly identify end-of-project outputs, design the analytical instruments to produce these outputs and focus project activities so that these can be attained.

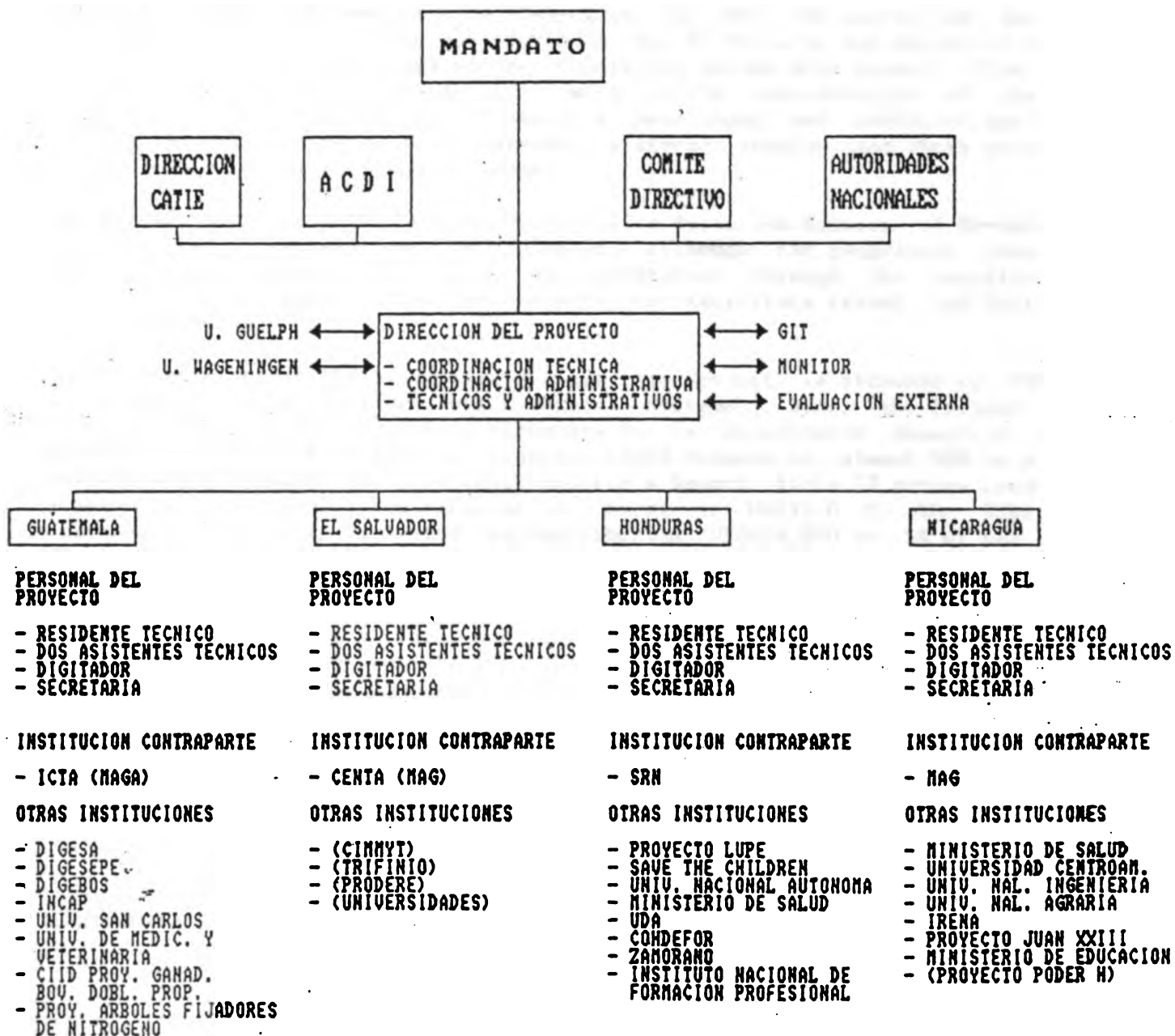
#### **3.2.2. Organizational Structure**

An updated organizational chart prepared by Project staff is presented in Figure 3.1. The suggestion in this figure that CATIE Management (Dirección CATIE), CIDA (ACDI), the Project Steering Committee (Comité Directivo) and National Country Leaders (Autoridades Nacionales) have equal responsibility and input into the Project is somewhat misleading.

**FIGURE 3.1**

**ORGANIZATIONAL CHART OF THE PROJECT**

**CATIE**  
**PROYECTO AGROSILVOPASTORIL**  
**MAYO, 1992**  
**FLUJO EJECUTIVO**



The Project MOU was signed between CIDA and CATIE, making that organization ultimately responsible for project property, activities and results. The Steering Committee has met twice, but appears to have a largely passive role in project policies and management. National leaders are represented on the Steering Committee and participate in staffing decisions and work plan discussions in each country. The apparently insignificant relationship of the CATIE Interdisciplinary Working Group (GIT or Grupo Interdisciplinario de Trabajo) to the Project suggested in Figure 3.1 may reflect the extent to which participation of this group has decreased over time.

The complexity of the Project is readily visible at each country level. The Project has (or is to have) five staff members in each of the four countries. In addition to the formal Counterpart Institution (the equivalent of the Ministry of Agriculture in each country), the Project relates to an average of six other organizations in each country.

**Geographic Scope and Project Site Selection.** The 1989 POP identified Guatemala, Nicaragua and El Salvador as project countries. El Salvador was initially replaced by Honduras, but included again when conditions became more secure. This appears to have been a political decision, with little consideration of the extra complexity that it would add to project management and technical assistance. Despite the relative delay in El Salvador, a strong country team there promises to produce useful results by end-of-project.

The project sites selected by the Project Site Selection Mission of November 1988 (for all but Honduras) have been adopted, although the geographic area where project participants are located was identified through the Baseline Study (Sondeo) and is smaller than the original to facilitate travel and delivery of project services.

**The Project Within CATIE.** Administratively, the Project is attached to Programme II (Sustainable Agriculture and Livestock Systems)<sup>1</sup>. Since the Project works directly with member country governments it is politically sensitive and is watched closely by the Director General. CATIE depends in almost 90% on projects for its annual budget. The 1991 CATIE Auditor's Report lists 37 active projects or grants in that year, contributing a total of US\$12.0 M. The CIDA Agro-Silvopastoral project is listed as contributing US\$628,000 or 5% of the total, although the Project has generated greater interest than this figure suggests.

CATIE offered the Project a large number of top scientists (up to 50 researchers with a PhD degree) and a large body of research results and field experience. A total of 17 of these scientists were put on the Project GIT or Multidisciplinary Working Group. While the contribution of the GIT has not been unimportant (a total of 157 consulting days were contributed in calendar year 1991), the fact that salaries are paid by other CATIE projects has resulted in diminished interest in CIDA Project activities over time.

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<sup>1</sup> . CATIE has recently undergone a restructuring in which the five former programmes have been collapsed into three. The Project continues to be attached to Programme II - Production and Development of Sustainable Agriculture and Livestock.

Although projects dealing with technology validation and systems research have been implemented by CATIE over a period of 10-15 years, the Project did not undertake a systematic search of methodologies and research results generated by this experience from the beginning. As a result, this is still taking place on a piecemeal basis. See Chapter 4 for further analysis of this aspect.

**Structure at the Local Level.** In each country the Project works directly with the Ministry of Agriculture as counterpart agency. Office space is provided to the Project, extension personnel are seconded to it and in some cases vehicles are also made available. The Project cooperates with a number of related agencies and projects at the local level.

### 3.2.3. Project Staffing

A list of project staff is given in Appendix 3.1. The staff profile is as follows:

- Headquarters (Turrialba): Project Director, Technical Coordinator, Technical Assistant, Administrative Assistant and Secretary. An Anthropologist/Sociologist (a Dutch Cooperant) is also assigned to the Project on a fulltime basis.
- Country Offices (4): Resident Technical Director, two Technical Assistants, a Computer Data Input Specialist and Administrative Secretary.

**Headquarters Staffing.** The question of headquarters staffing has been an issue of discussion since project start-up. The project PAM, originally prepared in November 1988, stated that CIDA would pay for a full-time Administrative Coordinator and a Technical Coordinator. The February 1989 POP and the April 1989 MOU indicated that CATIE would provide both the Project Director and Technical Coordinator, with CIDA budget items covering only the Administrative Coordinator and Secretarial Services.

After an interim period, in which scientists from the Tropical Livestock Unit of CATIE provided project leadership, a Project Director was appointed in December 1989 on a half-time basis. In early 1990 this person assumed responsibility for CATIE's Programme II, potentially giving the Project a higher profile but in fact progressively denying it leadership time. An Administrative Assistant had been hired by the Project in October 1989, but also provided administrative services to other programmes and projects within CATIE until July 1992.

The inability of CATIE to pay for adequate headquarters staffing was evident early in the Project, but was not flagged as a problem. In March 1990 CATIE expressed concern to the Project Monitor that there was no overhead built into the Project and requested budget changes to permit hiring a Technical Assistant. This person was finally hired in February 1991. For the 1991/92 budget year CATIE requested that funds designated for Canadian experts be utilized to hire a Technical Coordinator. Authorization was granted and the position was filled in August 1991. The Dutch anthropologist joined the Project in September 1991, finally completing headquarters staffing two years after project start-up. All but this expert and the Project Director are paid for by the Project.

In August 1991 CATIE requested permission to hire five additional headquarters staff - three specialists and two support persons. CIDA authorized the hiring of one support person only, with additional consultancies as needed. These increasing demands on CIDA funding to manage the Project led CIDA to propose a flat management fee for CATIE, out of which all headquarters salaries and expenses would be paid. This fee schedule was incorporated into Amendment No. 1 of the MOU, signed in December 1991.

CATIE scientists have provided technical support on specific issues, including baseline studies and training, but such input has declined recently due to other commitments, staff changes, differences in philosophy of work, etc. A plan exists for down-sizing the GIT and providing it with a more specific mandate. Regional consultants have also been hired for varying periods of time to cover expertise in the areas of anthropology, nutrition, gender issues and data input and systems analysis (planned) not covered by GIT members. GIT project input is analyzed in Chapter 4.

When the Team left Turrialba on July 14, the position of Project Director was in limbo. The present director has resigned as of September 01/92, is presently on holidays and will not reassume duty. The Director General of CATIE is of the opinion that two project leadership positions are unnecessary. One option actively being considered was to replace both senior staff with a new project manager. This move would eliminate the present confusion between Project Director and Technical Coordinator regarding authority and responsibility, as well as reduce CATIE's payroll.

**Recommendation:** Given the short period left for full-scale project activities (to end of 1993), it is recommended that a policy of continuity of Project leadership be pursued at all levels.

It is the Team's assessment that further change in project leadership at this time will interrupt urgent methodological and coordination activities and delay the Project by several months, compounding the delays the Project has already experienced. If the present system of tiered leadership is retained, clarification on roles and responsibilities of Project Director and Technical Coordinator is essential.

**Country Project Staff.** Start-up in each country has depended on hiring a Resident Technical Director. In the case of Honduras and Nicaragua this process was delayed somewhat, partly due to lack of Project initiative and partly by changes in government in the two countries, requiring local approval of the candidates. The replacement of the Resident in Honduras (December 1991) and Guatemala (June 1992) has interrupted activities somewhat, but promises to permit a more coordinated approach between countries.

The three project staff originally budgeted in each country has been expanded to five: Resident, two technical assistants, administrative secretary and computer input person, the latter still being contracted in some countries. An extra professional staff person in El Salvador has been designated to develop methodologies for economic analysis of technologies. While none of the four Resident Directors are women, five of the nine Technical Assistants are, as are all four of the administrative secretaries. Female Technical Assistants are

generally given the task of working with the Home Sub-System, despite lack of prior training or related experience in several cases. All of the GIT members are male, while at least two consultants contracted by the Project have been female.

Overall, the Project has succeeded in attracting highly qualified staff: 3 staff members have doctorates and 7 have masters degrees. Analysis of years of Project or related experience reveals that the technical staff have an average of 10.5 years experience, with only one having less than 5 years. Motivation of project staff at all levels is high, as is that of most counterpart staff working with the Project.

#### 3.2.4. Project Steering Committee (PSC)

The establishment of a PSC is provided for in the POP and the Spanish version of the mandate of the Committee has been taken verbatim from this document. The first PSC was not held until June 1990, with a second one in August 1991. Attendance at the 1991 PSC included representatives of CATIE (1+ 17 GIT members), CIDA (2), member countries (4), IDRC (1) and Project staff (6). The CIDA Project Monitor acts as secretary. The role of the PSC in decision-making is analyzed in Item 3.3.1.

#### 3.2.5. Agreements with Member Countries

Formal agreements have been signed between CATIE and member countries authorizing project start-up and determining the physical and human resource input expected by the country. The agreements are similar, but vary with respect to input by each country and the disposition of capital goods (eg. vehicles, computers) purchased out of project funds.

### 3.3. Project Management

#### 3.3.1. Project Decision-Making

Decisions on in-country staffing have been a joint Project Director/member country decision. Decisions on methodology and project activities during the first two years of project activities have been largely delegated to the Resident Technical Director in Guatemala, where the Project was active. He drew on GIT members and counterpart agency staff to assist him. Project headquarters provided overall coordination when necessary, but appears to have contributed in a minor way to technical management. Even reporting to the donor was sporadic and haphazard.

With the appointment of a Technical Coordinator in August of 1991 and the arrival of the Anthropology Cooperant in September, the situation changed dramatically. Activities in Honduras and Nicaragua had recently begun, requiring documentation of methodological and technical orientation where little existed. A new financial and progress reporting system had recently been introduced and required heavy monitoring. The two-year experience in Guatemala provided both positive and negative lessons for the other countries. The task of re-orienting administrative

and technical routines in that country, developed with little support from headquarters, has proven demanding with some aspects still to resolve.

Headquarters staff have achieved impressive gains in terms of project organization and direction since August 1991, sometimes at a cost in terms of interpersonal relationships. Now that most project systems are in place and largely internalized by project staff, the Technical Coordinator can concentrate on the remaining methodological issues, delegating administrative tasks to the Administrative Assistant. The administrative burden on country project staff can also be reduced through reporting simplification (Item 3.3.2).

**The Project Steering Committee.** The PSC has participated actively in few major project decisions and several of the decisions taken have not been acted upon. The decision to add the fourth country (El Salvador) was effectively taken before the first PSC meeting. The Country Work Plans for 1991/92 were approved by the PSC in August, fully four months after the FY began. The following PSC decisions, taken at the August 1991 meeting, have not been acted upon as yet: a. Preparation of a long term plan for the Project; b. Preparation of a programme for information dissemination; c. Reduction in the descriptive part of quarterly reports, and; d. Quantification of input by participating countries for presentation in the fourth quarterly report of each year.

Approval by the PSC of the decision to have the Project explore the use of alternative sources of energy suggests a certain lack of project priorities at this stage in its development.

**Recommendation:** Clarification is necessary regarding the responsibility and authority of the Project Steering Committee. Meeting dates, agendas and pre-meeting information should be organized so as to maximize meeting efficiency.

### 3.3.2. Project Planning, Reporting and Monitoring

**Project Planning.** The 1989 POP set out the project reporting schedule. The Inception Report was due six months from project start-up. This document was not ready until May 1990, nearly a year after activities started in Guatemala. It contains 16 pages of reporting on 1989/90 activities and a three-page Work Plan for 1990/91, falling far short of normal CIDA requirements for an Inception Report. The need for a more substantial framework of technology validation methodology, project management and reporting should have been flagged immediately and the document rejected by CIDA until it was strengthened, but it was not. As a consequence, project activities in Guatemala were largely defined locally during early years, with some technical help from GIT members but minimal input from project management.

The first detailed Annual Work Plan for Guatemala, Honduras and Nicaragua was prepared for FY 1991/92, that for El Salvador for FY 1992/93. The annual planning process has become significantly more detailed, resulting in a 15-20 page Work Plan in 1991/92 and a 130-150 page document in 1992/93. While these latter plans contain a great deal of detail, including cost estimates for each activity, they lack two essential elements: a sense of priority among project activities and a clearly defined step-by-step fieldwork implementation methodology. The former is



essential, given the large number of activities undertaken in any one year.<sup>2</sup> The latter is necessary to ensure uniformity in how the various technicians conduct validation for each technology. A Fieldwork Manual might best meet this need.

What is absent in the present planning process is a plan for headquarters staff and other initiatives managed at this level. The list of proposed headquarters activities for 1992/93, prepared in July 1992 (Appendix 3.2), is impressive in scope but lacks substance in terms of priorities, timing and cost. It also fails to include the activities of GIT members and consultants.

**Recommendation:** An annual plan for project headquarters staff, in similar detail to that of country plans, is a necessary management tool and should be included in the 1993/94 Work Plan.

**Project Reporting.** In addition to annual work plans, the Project presently generates a number of other reports:

- Monthly financial reports (country to headquarters)
- Monthly progress reports by activity and cojecutor (country to hdqtrs.)
- Quarterly report on activities and technologies (country to hdqtrs.)
- Quarterly project progress and financial report (headquarters to CIDA)
- Various technical reports on project related topics

The structure of the present quarterly reporting to CIDA was determined in a reporting package prepared in early 1991 by Ernst & Young Consultants. Up to that point the Project had submitted periodic financial reports (to substantiate advance requests) but no progress reports. Progress reporting is now systematic, but is sent to CIDA six-eight weeks after end of quarter.

Financial reporting will be analyzed in the following item. A great deal of time and effort in presently being put into monthly and quarterly progress reporting at the country level. Monthly progress reporting was initiated during 1991/92 in an attempt to assist country teams and headquarters to track progress and identify problems at an early stage. While country teams in Honduras and Nicaragua have found this reporting helpful for project management, the team in Guatemala has been unable to respond to reporting demands. While the latter appears to require assistance in systematizing reporting generally, the Team is of the opinion that monthly progress monitoring should become an internal activity in each country and no longer a headquarters requirement.

The August 1991 PSC meeting recommended that quarterly progress reporting by headquarters be simplified. Recent quarterly reports have contained between 60-70 pages of progress reporting plus numerous appendices. In addition to length, the lack of sequential page numbering in the text and table of contents, and the absence of a list of appendices, makes these reports quite indigestible.

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<sup>2</sup> . In Honduras in 1992/93 it is proposed to carry out: research validation for 13 technologies; 7 adaptive research activities; 5 special studies; 12 training activities, and; 7 workshops/short courses. The list for other countries is similar, although the specific activities are frequently different.

**Recommendation.** Project reporting should be simplified and strengthened by:

- Making the monthly country progress report an activity for internal control in each country, not required to be sent to headquarters;
- Reducing headquarters quarterly progress reporting to CIDA to 10 pages;
- Preparing an Annual Progress and Financial report containing both 4th Quarter and annual information, and relevant appendices now contained in quarterly reports;
- Providing reporting assistance to the Guatemala team as needed.

**Internal Project Monitoring and Communications.** Before August 1991 visits to the field by project management staff were infrequent. Between August 1991 and June 1992 the Technical Coordinator has visited most countries six times, in addition to 2-4 visits by the Administrative Assistant (Appendix 3.3). Periodic Technical Coordination Meetings are held for headquarters and country project staff to discuss both administrative and technical matters. Meeting minutes are recorded and circulated.

Communications by phone, fax and courier are frequent, especially between headquarters and country staff, but opportunities to exchange experiences between countries are less frequent. Due to the large task of management systems development in 1991/92, written project communications tended to be top-down. The next two years should provide opportunities for a full exchange of ideas and information within the project.

### **3.3.3. Financial Management and Inventory Control**

**Financial Reporting.** The Project has been characterized by difficulties with financial reporting and frequent budget revisions. Working with seven different exchange rates is itself a major task. The Reporting Package prepared by CIDA in early 1991 and the MOU Amendment No. 1 (signed December 1991) helped clarify a number of issues and should minimize future problems. The present financial accounting and reporting structure at both country and headquarters levels appears generally adequate. Accounting systems support is still necessary in Guatemala, where financial control by the previous Country Resident was inadequate and financial reporting delays are still being experienced. A CIDA Audit of the Project was conducted in July/92, immediately following the evaluation.

**Budget and Disbursements.** The project budget, as agreed to in the 1991 MOU amendment, is presented in Appendix 3.4.A. A statement of disbursements to end of 1991/92 and a preliminary future budget to 1993/94, subject to approval by the PSC at its August 1992 meeting, is given in Table 3.1. A breakdown of expenses by country, from August 1989 to March 1992, is given in Appendix 3.4.B. Project disbursements have consistently fallen short of budget, but the difference was only 14% in 1991-92. Disbursements are expected to reach CDN\$825,000 in 1992/93, decreasing to CDN\$750,000 in 1993/94, with all funds utilized by March 1994.

Calculations based on Table 3.1 show that by end-of-project, 47% of the budget will have been spent on in-country operations, 8% on training, 20% on research support and 25% on services provided by CATIE, etc. Project headquarters expenses (70% salaries) were transformed into a fixed management fee by the MOU amendment

TABLE 3.1.

PROJECT DISBURSEMENTS (1989-92) AND  
PROJECT BUDGET (1992-94)

CATIE-ACDI

PROYECTO: CATIE - SISTEMAS AGRO-SILVOPASTORILES SOSTENIBLES PARA PEQUEÑOS PRODUCTORES DEL TROPICO SECO DE CENTRO AMERICA

EJECUCION Y REPROGRAMACION PRELIMINAR DEL PRESUPUESTO  
EN CAD\$

COSTOS DE OPERACION	AGOSTO 1989	ABRIL 1990	ABRIL 1991	ABRIL 1992	ABRIL 1993	PRESUPUESTO
	A MARZO 1990	A MARZO 1991	A MARZO 1992	A MARZO 1993	A MARZO 1994	TOTAL
<b>1.0 OPERACION EN PAISES</b>						
· Coordinadores, Asistent. de campo y secret:						
- Guatemala	11381.19	45882.73	66587.83	60724.00	76000.00	280655.75
- Honduras	0.00	44.00	51299.77	72500.00	87000.00	210933.84
- Nicaragua	0.00	0.00	40929.25	57713.00	75000.00	173642.25
- El Salvador	0.00	0.00	13464.33	91965.00	100000.00	205429.33
· Vehiculos - Adquisición y mantenim.	109428.89	14412.05	141863.68	24780.00	25000.00	315484.62
· Otros gastos de oficina local	0.00	13088.80	45274.79	14000.00	15000.00	87363.59
· Entrenamiento de campo	0.00	0.00	31891.76	15000.00	6000.00	52891.76
<b>Total Parcial.....</b>	<b>120810.08</b>	<b>73507.67</b>	<b>391311.41</b>	<b>336772.00</b>	<b>384000.00</b>	<b>1306401.16</b>
<b>2.0 CAPACITACION (TALLERES Y SEMINARIOS)</b>						
· Entrenamiento en Costa Rica	0.00	0.00	10410.40	10000.00	0.00	20410.40
· Entrenamiento fuera de Costa Rica	1964.23	18654.83	61322.07	35000.00	10000.00	126941.13
· Material didáctico	4028.43	3030.81	20298.34	12000.00	15000.00	54357.58
· Entrenamiento en Canadá	0.00	0.00	0.00	0.00	0.00	0.00
· Estudios de posgrado en CATIE	0.00	0.00	0.00	18000.00	10000.00	28000.00
<b>Total Parcial.....</b>	<b>5992.66</b>	<b>21685.64</b>	<b>92030.81</b>	<b>75000.00</b>	<b>35000.00</b>	<b>229709.11</b>
<b>3.0 SERVICIO DE APOYO A INVESTIGACION</b>						
· Costos de operación y servicio	0.00	11937.51	106056.00	77000.00	70183.23	265178.74
· Herramientas y equipos menores	0.00	193.13	16144.99	18000.00	6000.00	41138.12
· Consultores	0.00	0.00	22307.29	37760.00	18000.00	78067.29
· Santos de laboratorios	0.00	0.00	14248.22	18000.00	4000.00	37048.22
· Operaciones Centralizadas	0.00	0.00	17453.02	71790.00	60000.00	149243.02
<b>Total Parcial.....</b>	<b>0.00</b>	<b>12130.64</b>	<b>176209.52</b>	<b>224150.00</b>	<b>158183.23</b>	<b>570673.39</b>
<b>4.0 SERVICIOS - CATIE</b>						
· Gastos de Administración	87768.31	72440.03	169836.00	169836.00	169836.00	689716.34
· Expertos Técnicos de Canadá	0.00	0.00	0.00	12500.00	0.00	12500.00
· Viajes Internacionales	0.00	0.00	0.00	8000.00	3000.00	11000.00
<b>Total Parcial.....</b>	<b>87768.31</b>	<b>72440.03</b>	<b>169836.00</b>	<b>190336.00</b>	<b>172836.00</b>	<b>683216.34</b>
<b>TOTAL.....</b>	<b>214571.05</b>	<b>179763.98</b>	<b>829387.74</b>	<b>826258.00</b>	<b>750019.23</b>	<b>2800000.00</b>

and pegged at CDN\$626,687 for the remainder of the Project. The estimated total in Table 3.1 of CDN\$693,216 is 11% over budget due to the proposed extension of the Project to March 1994. The other major budget item directly under headquarters control is Centralized Operations, consisting primarily of consultancies, travel and some equipment. For FY 1992/93 this item is estimated to increase to CDN\$72,000 due to increased consultancies. There is no budget item for the Steering Committee meeting, requiring annual authorization of budget line changes to accommodate it.

**Flow of Project Funds.** The Project submits quarterly financial reports to CIDA and requests advances based on disbursements. Advances are deposited in a general CATIE account in the American Security Bank in Washington and drawn down as necessary. Appendix 3.4.C shows dates and volumes of disbursement reports to CIDA and of CIDA cash advances to the Project. The Project has maintained a comfortable margin of funds with the exception of mid 1992, when the Project had overspent by CDN\$45,000 before the CIDA advance arrived.

The flow of funds between headquarters and country project offices is complex and has resulted in considerable delay, especially in the case of Guatemala. Requests for funds are sent monthly to headquarters. After processing, the Project must request the CATIE accounting department to draw down dollars in Washington and transmit them through IICA offices in San Jose and the country requesting funds, before it reaches the project office, taking from 20-25 days in the case of Guatemala. The Project has attempted to overcome this problem by making a one-time advance for three months, thus creating a buffer to allow for monthly processing.

**Inventory.** An updated copy of the inventory of project property was provided by headquarters staff (Appendix 3.5). This consists of 13 vehicles, 15 computers, 10 printers and other office equipment. There is no systematic practice of making an annual project inventory. There is also no clear understanding, between CATIE and CIDA or CATIE and the participating country governments, regarding the disposition of property when the Project ends. The issue is not covered in the MOU or its amendment, and is absent or vague in several of the CATIE-country agreements. The inventory items are presently registered in CATIE's name.

**Recommendation:** CIDA and CATIE should agree on project property disposition before the Project terminates.

#### 3.3.4. Role of CIDA in Project Monitoring

CIDA has taken an active role in project monitoring, partly through decentralized staff in San Jose and partly through the Canada-based CIDA project monitor. Until August 1991 the CIDA Agriculture Specialist in San Jose was also the CIDA Project Team Leader, participating on the PSC as its vice-president. The CIDA Project Monitor was contracted immediately after project approval and made his first visit to the Project in August 1989 and twice-yearly thereafter. When budget and reporting problems became obvious, CIDA contracted a consulting firm to prepare a reporting package and specialized CIDA staff worked with the Project in re-working the budget and formulating the MOU amendment. Since August 1991 CIDA staff in San Jose have systematically replied to project reporting, communicating reporting shortfalls and CIDA decisions based on Project requests in the reports.

A Project Monitor acts as the "eyes and ears" of CIDA, advising of changes that are necessary to ensure the Project attains its objectives and alerting CIDA to changes in the socio/political/economic milieu that might endanger project success. In the present case the Monitor has an agricultural research background, facilitating his understanding of project objectives, but also encouraging the Project to involve him directly in Project discussions/decisions. While the monitor has identified a number project weaknesses in his reports, no action has been taken on several important ones (eg. reduction in number of technologies, debate on farm sizes, sustainability indicators) and CIDA has not followed up with the Project on these. On the other hand, a number of early project weaknesses such as deficient project management input, a totally inadequate Inception Report, lack of methodological development of the Project and lack of direction and control of activities in Guatemala were not flagged by the Monitor and still represent major stumbling blocks for the Project today, despite the changes that have taken place.

## CHAPTER 4. PROJECT IMPLEMENTATION

### 4.1. PROJECT ACTIVITIES

The project has as its focus the validation of technologies, and the main emphasis of the evaluation was on this aspect. It has however four other activities which are considered as complementary, but integral components to the main activity. These are:

- Adaptive Research (Investigación Adaptiva)
- Special Studies (Estudios Especiales)
- Training (Capacitación)
- Information Dissemination (Difusión)

In the field each project has its own headquarters, where a Country Director is in charge of operations. Under him are three to four technical assistants carry out the day-to-day operations. Each county project has assigned to it a number of counterparts from Government Ministries, some on a full time basis, but most on a percentage of time, commonly fifty percent. In addition the Project works with a number of Non-Government Organizations with specific mandates, such as nutrition.

#### 4.1.1. Validation of Technologies

The traditional agricultural research approach has tended to concentrate on technical innovation, with a focus on the laboratory and the experimental farm. The results were then handed over to the extension system for implementation. This process has shown to have serious shortcomings, as the usefulness of such results was often limited. A main cause of this problem was a lack of testing the technology in the real farm environment, and a general neglect of economic and social parameters. Under these circumstances adoption was often slow, limited or totally lacking.

This problem has been generally recognized, and on-farm research and a thorough economic analysis of a technology are now standard practices. This improvement, however, has not eliminated all the flaws, as the focus remains on the technical. Social parameters especially are not usually considered.

To overcome these shortcomings, a process of validation is now becoming increasingly accepted as a necessary step taking a new technology from the lab to the farm. For the validation process outside influence needs to be minimal and the technology has to be integrated into normal farming practices. The validation process records activities and results, paying special attention to economic and social parameters. These may be a cost-benefit analysis of an alternative technology, or the opinion of the farmer and his wife on the cooking qualities and taste of a new bean variety.

A comprehensive validation process is expected to produce clear results on the usefulness and desirability of a technology. If the results are negative, the

understanding generated should be useful in the redesign and, if found successful, careful documentation will help the extension service promote these.

Given the past neglect of economic and social parameters in the research system, validation must thus be considered a most valuable component in testing the usefulness of new technologies and producing information to make later adoption easier. The present project has fully recognized the importance of validation and has made considerable progress in establishing a workable validation system.

#### 4.1.2. The GIT (Grupo Interdisciplinario de Trabajo)

One of the inherent strengths of CATIE to implement this project was the high calibre of its staff. The Project made good use of this potential by forming an advisory group of highly qualified CATIE staff, the GIT. This group had a considerable impact on the early direction of the project, and was actively involved in the "sondeos" (surveys), the technology choices and training. It is especially in the latter that the GIT has continued to make a major input to date, and the results of this effort are clearly visible in the field. However in other areas the early enthusiasm seems to have decreased, and during the past year the GIT has no longer contributed to its full potential.

The activities of the GIT members up to June 1992 are presented in Appendix 4.1. There may be some inherent weaknesses in the Project's approach to the GIT. It seems that the considerable number of people involved (as high as sixteen) has made the management of the group unwieldy. It might be better to have one member from each "subsistema" (subject area), with the understanding that other faculty members could become involved as necessary. The other question is incentive. The GIT members have a number of major responsibilities within CATIE, and thus their participation had to take a back-seat over other duties more often than desirable. Here the project should consider means of either providing certain incentives, or gaining a firm commitment from CATIE to a given level of involvement of GIT members in the Project.

Although the needs of the Project are continually changing, it is essential that it has the full support of such a back-up group in its difficult endeavour to complete the project, and especially needs support to analyze, interpret and publish the results.

#### 4.1.3. The Prevalent Farming Environment

The project set out to define its specific environment as the dry areas of Central America, and the specific situation of hillside farming. Within this the choice of Coejecutores (cooperating farmers) was defined as farmers possessing a defined range of land and cattle. While these specific definitions presume a certain minimum level of resources, a large percentage of farmers chosen seem little above subsistence level. This means that some crops are sold (the surplus), that some milk may reach the market and that surplus livestock is sold periodically. These modest sales barely cover the basic needs for cash to purchase outside goods.

The farming system is characterized by making optimum use of the very limited

resources of cropland, pasture and forest, on sloping to very steep land. Soil fertility, however, is generally quite high and although rainfall is low and concentrated in a few months, it's level is adequate to grow beans and maize in an average year. The generally higher altitudes afford a fairly mild climate, but the short rainy season and the irregularity of the rains are the main constraint to agricultural production.

One of the major determining characteristics of these farms is the composition of the family. Where there is a young couple with small children, the burden of providing all labour lies with the husband-wife team. The husband is generally responsible for collecting firewood and water, particularly if it is at a distance from the home (with the help of a horse or mule). On the other hand, an older farming couple may have several sons and their families living on the same farm, and this allows a division of labour, where close cooperation makes work more efficient.

Because the project tended to select more progressive farmers, such an attitude also reflected in these being more enterprising, and generate additional income from non-traditional activities, be it producing onions, holding a market on their land, working for the local co-op, or selling medicines. These activities may make them less typical than the average farmer, but are also indications of a more progressive attitude towards change.

#### 4.1.4. The Principal Technologies being Validated

The description of technologies introduced for validation follows Figure 4.1, and is here limited to a short description. In Appendix 4.2 individual technologies are discussed in more detail. The overview here is not intended to be comprehensive, as the programs vary between countries and as technologies have changed over time.

#### Household Technologies (Hogar)

The Home Subsystem is the Project's response to the WID mandates in the POP. This subsystem does not have specific objectives. The objectives are only presented within seven technologies that are to be validated. The objectives of the technologies generally focus on the improvement of family living and economic conditions. Women's specific needs are only mentioned in the objective of one technology, vegetable gardens. The objectives generally treat women as a conduit for family's improvement, rather than considering her specific needs and constraints as an individual.

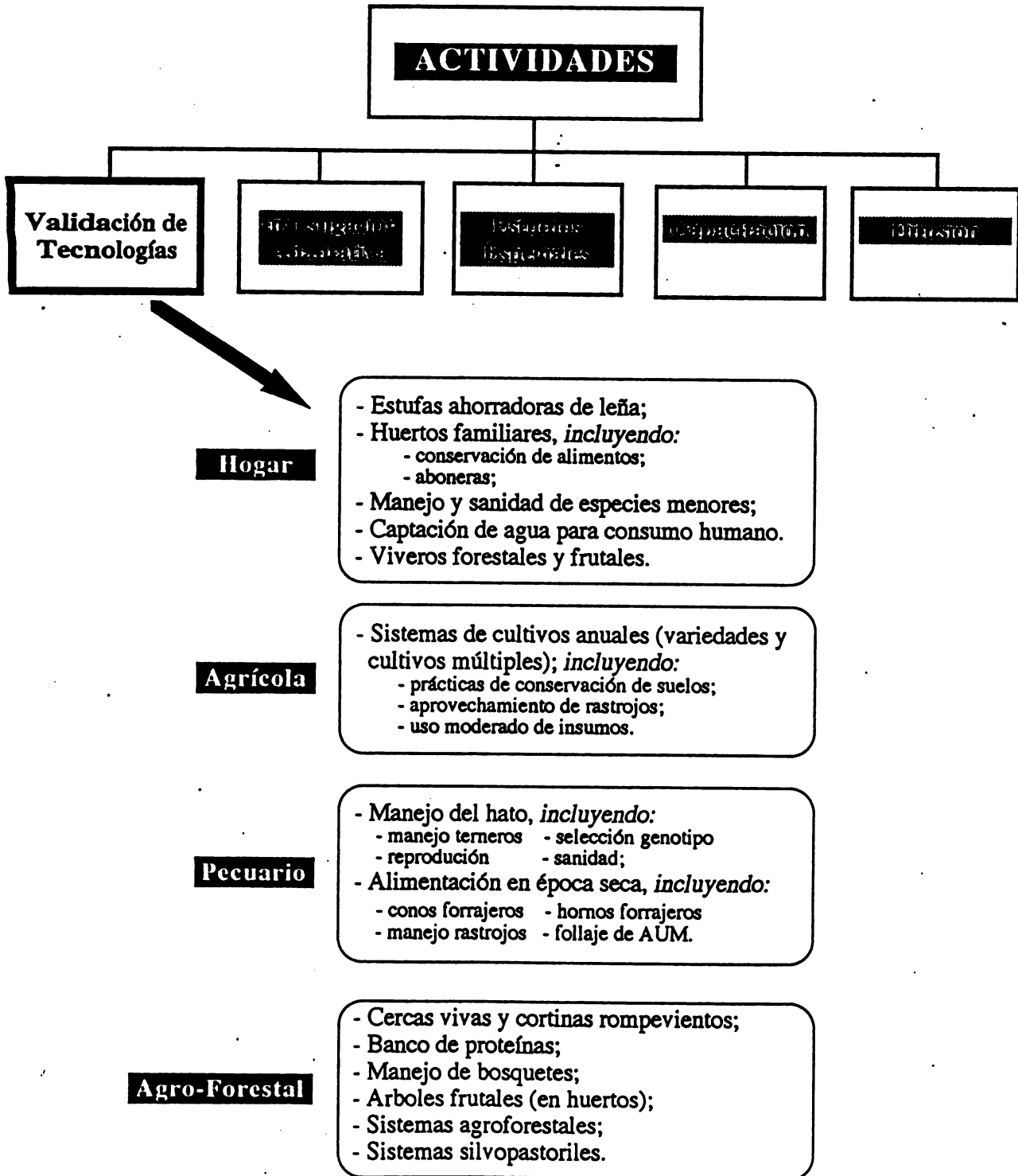
- Improved Wood Stoves (Estufas ahorradoras de leña)

Instead of using an open fire with one pot, the new wood-stove is a long narrow stove with three cooking spaces, a fire ?? on one end and a chimney at the other. Their advantages are not only a drastic reduction in firewood use, but also being able to cook three pots at a time, no smoke and safer operation.



**FIGURE 4.1. PROJECT ACTIVITIES**

**Proyecto CATIE/ACDI  
Mayo 1992**



- **Family Vegetable Gardens**

The growing of a wide variety of vegetables is not traditional in the project areas, and the introduction of kitchen gardens is aimed at improving the diet of rural families. The implementation of this technology is probably the weakest in the project and the gardens visited were of rather low quality.

- **Management and Health of Minor Animal Species**

This technology is integrated with the bovine health activities, but is fairly new and not yet well established. None of these activities were discussed during the farm visits.

- **Water Systems (Honduras and Nicaragua only)**

Having as the target area the dry zone of Central America implies a severe seasonal shortage of water, not only for crops, but also for livestock and human consumption. By validating technologies for drinking water collection, this problem can hopefully be overcome. The roof water collection tanks, which the project concentrates on, are often the only viable option in mountain areas.

#### **Field Crop Technologies (Agricola)**

- **Variety Testing**

The project has introduced new varieties of beans and maize, developed by plant breeding research establishments of the region, into the validation process. The disease resistant bean varieties have met with particular success, because a mosaic-type disease is spreading throughout the region seriously affecting yields. The impact of new maize varieties is less obvious, because the new varieties have not been specifically bred for the poor, upland soils and the dry areas of the region.

- **Soil Erosion Control Measures**

Given the steep slopes, the increasing use of marginal land and the often heavy, but seasonal rainfall, soil conservation is one of the most important areas of involvement for the Project. The Project uses a number of technologies, from maize straw barriers on the contour and live contour barriers of sorghum or sugar cane, to stone contour walls. These technologies seem to greatly reduce soil losses, thus helping to maintain the fertility and productivity of the soils.

#### **Livestock Technologies (Pecuaria)**

- **In-ground Silos and Forage Cones**

The prolonged dry season imposes considerable hardship on cattle, as during this time milk production ceases, and the animals lose weight.

Technologies which provide fodder in the dry season are thus of considerable value. In-ground silos allow stover and other feed to be stored for feeding during the dry season. This can either provide a minimum feed supplement for the whole season, or prolong the milking period.

- **Cattle Health Care**

As the cattle grazed far from the farm at the time of the evaluation, little direct observation was possible. This technology, which basically consists of a vaccination program, has been made mandatory by the project. The veterinary system of the countries has its own vaccination and health program, and thus no new technology is being tested here. Farmers generally do not need to be persuaded re the usefulness of vaccinations, but the normal veterinary service has, due to financial and logistical limitations, only been able to provide limited coverage.

- **Cattle Herd Management**

Little evidence of such technologies was found during the visits, and indications are that improved reproduction management and cross-breeding with better genotypes has not been considered important. The initial "dual purpose cattle" orientation has disappeared, and indeed the traditional "criollo" breed has been largely been changed into zebu type beef cattle, in the process likely reducing the milk production potential. Despite this, lack of feed was considered a more important limitation to address than genetic improvement.

## **Agro-Forestry Technologies (Agro-Forestal)**

- **Live Fences and Wind Breaks**

There is a long tradition of using live trees as fences in the project areas, and the technology being introduced by the Project is merely changing the type of tree into a multi-purpose ones, which will also produce fodder. The Coejecutores have generally not built new fences, but have filled gaps and strengthened existing fences with new trees. Windbreaks, on the other hand, have not been a successful intervention.

- **Fruit Trees**

The Ministry of Agriculture in several of the countries visited is heavily promoting fruit trees and the technologies promoted by the Project appear to be an extension of general Government initiatives, especially in Guatemala. Validation of these technologies does not seem to add to the process, since the farmers have grown fruit for a long time and the new varieties promoted have been well tested.

- **Small Forests/Tree Pasture**

This topic was an important part of the original concept of the project, but has been reduced to small forest lots with eucalyptus, casuarina, neem and

other fast growing species used as a cash crop (sale for construction timber). These forest activities have generally not been integrated into pasture management.

Overall, the families visited during field work were pleased with the activities undertaken with the Project. Both women and men explained the merits of the stoves, the vegetables recently planted or harvested the previous season, and how good the fruit marmalades bottled with project support were. Most families seemed to see the Project as an improved extension service, but with an inordinate demand for data.

#### **4.1.5. Adaptive Research and Special Studies**

The evaluation in the field did not focus on the research activities, as they were understood as peripheral to the project, and could not be observed easily. One of the problems with this activity is the lack of clear relationship between validation process and the various research activities, especially the "Adaptive Research." The impression of the Evaluation Team was that validation and research were frequently intermixed, and that when separate, research activities were really simplified on-farm trials lacking a clear research methodology. These technical research topics seem to be of limited use to the project and to the validation process. They frequently appear to be add-ons to the project, and distract and diffuse the effort, rather than supporting the project.

Studies focusing on social topics have produced a wealth of information most useful to further the understanding of the farmer, his family and his production system. This research aspect concentrated on the gathering of background data on social parameters, such as nutrition studies, baseline data collection, and other population census type information. While this type of data is very useful, the tendency has been to collect large amounts of data of questionable value. The project needs to focus on specific purposes.

Most of the social data collection should also have been carried out in the initial stages of the project, in order to set the stage for actual project activities. At the halfway mark of the project these information gathering activities should be near completion, and no new information collection activities should be started.

## **4.2. Specific Project Strengths**

### **4.2.1. The Soundness of Project Design**

An analysis of the project shows that it is built on a very sound and useful overall concept, where a number of solid strengths make the approach taken by the project both useful and desirable. These are based on the recognition of a need, and a progressive and forward looking mind-set are evident in the project design.

The foremost strength lies in the recognition that research results generated can not directly be implemented on the farm, and some essential intermediate steps are necessary. Here on-farm research and technology validation are useful as they put

a new technology into the context of farm use. In the past research has tended to neglect economic and social facets, and it is here where validation is a most important tool to fit a technology into the farm. The project has recognized this and has addressed these issues.

A second strength is the regional focus of the project. The similarities of environment, farming system and needs are obvious across the four nations, and a regional focus thus makes much sense. The project's ability to establish good working relationships with four different agricultural ministries and extension systems has been a major achievement and should be recognized as an example for future regional cooperation, which in the present world economic climate will become more important.

A further strength has been the presence of a research and training institution (CATIE) at the centre of the project. This has allowed a strong backup system for the field operations through technical advice, training and support. Especially useful here is the concept of the GIT advisory body specifically formed to fulfil these functions. If the GIT has not always functioned at an optimum level, this should not distract from the validity of the general concept. Rather, it calls for a new definition of its mandate, and a reorganization and strengthening, so that it can become the support and guidance body it was designed to be.

A last strength which needs recognition is the inclusion of elements of environmental protection and agro-forestry technologies into traditional crop and livestock practices. Both have considerable potential to put fragile farming systems on a more sustainable foundation and at the same time produce short term benefits for the farmer. The combination of enhanced production technologies with practices which help the systems maintain their long-term productivity, especially crucial for the project area.

#### 4.2.2. Project Implementation Accomplishments

In the field there were also some obvious and very valuable strengths observed. Foremost was the enthusiastic spirit of all staff encountered and their interested and keen attitude, in marked contrast to staff morale often found in Ministries of Agriculture. This positive attitude is a fundamental requirement for a successful project and staff at all levels should be congratulated for having built such strong morale. One of the contributing factors to this achievement has been the training function. Staff see this not only as an incentive, but are eager to expand their knowledge. The project has a strong program in this area, and the visits of GIT members, the various courses, and the in-house training among extension staff have been a boon to the project, both in increasing the knowledge of staff and in establishing a high level of motivation (Appendix 6.2).

Such a positive attitude quickly reflects in the execution of the work. Especially impressive was the degree of interaction and cooperation among different sectors of a Ministry, between different Ministries, and with numerous other organizations. A positive attitude was also evident in the interaction extensionist - farmer. Here a close cordial relationship was found throughout, built on cooperation, respect and trust. This is obviously related to the frequency of visits and to the benefits that the project can bring to the farmer.

Nevertheless, it is an important prerequisite for the success of the project.

And lastly, the success of the project depends on the benefits it is able to create for the farmers. Here it was obvious that the farmers have benefited in considerable measure from a number of the technologies introduced. Highlighted may be the improved wood stoves which are greatly appreciated, not only for wood saving, but for health and efficiency reasons. Similarly the new mosaic-resistant bean varieties have been most welcome at a time when the disease has been spreading and intensifying. Other technologies may have less evident benefits or are long-term investments, but the trust which project staff have established with the farmers has made them believe that the advice is sound and the technologies beneficial.

### 4.3. Project Methodology

#### 4.3.1. Definition of Objectives

In the normal CIDA project implementation project one of the first and most important activities is the writing of an Inception Report, a detailed and accurate plan of operation of the execution of the project. For this CATIE/ACDI project, the "Plan Operativo" is this document, which sets out the implementation parameters.

However, and quite legitimately, the implementation of a project may change, as circumstances change, and wise project management adapts to these changes. This project in particular has seen a number of important changes between its beginnings in 1989 and the mid-term evaluation in July 1992. Its initial foci were on "silvo" and on "pastoril", ie. on forestry and pasture, as well as on dual purpose cattle. Over the course of the first half of the project this focus has dropped some areas of focus, and broadened out to cover a much wider range of subjects. The project presently shows little work on pasture aspects and no longer considers dual purpose cattle important. Even the agro-forestry aspects seem to have declined in importance in favour of crop production and home technologies. These are clear indications of major changes in the project's orientation and objectives.

From the point of view of an evaluation, this complicates the task. Since an evaluation needs to look at the set goals and objectives, in order to measure the level of achievement, it is crucial that the project's objectives are clearly understood. If these objectives change, and if these changes are not explicit, the evaluation task becomes difficult.

Here it has been uncommonly difficult to identify the changes in direction of the project, because these changes have not been clearly recorded, and are not presented in a clear and explicit manner. Some of the changes have been decided on by steering committee meetings, and are recorded in its minutes, but for others there is no record. It is thus far from clear what the present project objectives are, and the documentation available can do no more than provide a rather hazy baseline against which to evaluate.

More important, lack of clear definition of objectives has been evident in the field. Although staff are quick to outline project objectives, and they are listed in all the reports, they seem to lack the deeper understanding. At different levels and in different countries, explanations of project objectives thus differed significantly. It was thus clear that the proper implementation of the project is hindered, because staff at all levels of implementation do not have a full, clear and detailed understanding of the objectives of their work.

**Recommendation:** Important changes in project objectives should be made through a clear decision-making process at the appropriate level and recorded as amendments to the Inception Report.

#### 4.3.2. The Validation Focus

In the process of developing a new technology, some intermediate steps are needed between research, and its widespread application the field through the extension system. "Validation" is thus the last research activity, where the technology is tested under actual farm conditions, with minimal interference of the researcher. It was thus expected that the CATIE/ACDI project would take a number of new and promising technologies, largely developed by CATIE or sister organizations in the region, and validate these.

It was thus surprising to find in the field that most technologies were neither new, nor had they been developed by CATIE. For example, improved wood stoves and kitchen gardens had been introduced by a number of extension agencies and NGOs many years ago. Similarly, cattle vaccination programs did not need validation and the introduction of new varieties of maize and beans is an ongoing program of all Ministries of Agriculture. Even the agro-forestry technologies of live fences and eucalyptus/neem woodlots had been used in the project areas for some time.

Thus many of the technologies had been around, but they frequently had not been a success in their introduction to poor rural farmers. The question thus poses itself: Is this program really involved in the technical validation of new technologies, or is it principally working with technologies that have been offered to farmers, but not been widely adopted?

In order for a technology to be widely adopted, it must not only be technically feasible, but it must fit into the social system and provide a tangible benefit to the farmer and his family. It was thus explained that "Validation" is not focusing on technical aspects only, but also on the social fit and economic feasibility. In the field it is evident that a recent effort is being made to measure economic benefit, and interactions with farmer families cover aspects of social understanding.

Nevertheless, the question is far from clear for some project staff as to why these technologies need to be validated and what emphasis should be given to economic benefit and social fit as compared to technical performance. While project management emphasise the social and economic aspects of validation, most field staff are focusing on technical feasibility. This orientation is evident in data collection, where most information recorded is on technical aspects, while social aspects are not well covered.

Project management has recognized this inherent weakness, and during the last year have made a considerable effort correcting it. Over the past twelve months a number of useful training courses were held, and more recently very solid documentation on the topic has been produced. As this complex training aspect obviously will need time, it is difficult to understand why these efforts came so late. At the same time it is clear that more work is needed. There is, for example, no record of the frequency and intensity of farm visits by project staff, which obviously will influence the response by the farmer.

Project Management has recently reviewed the concept of "Validation", and produced two most useful documents on the topic. Based on these some training has been undertaken with project staff. It should nevertheless be questioned why such important topics has not been addressed earlier. In the field this new initiative has not had time to sink in, and staff in general do not clearly understand the implications.

**Recommendation:** Training of project and counterpart staff on validation methodology must continue. At the same time there needs to be a system of supervision and quality control to ensure that the implementation of technologies follows this orientation.

#### 4.3.3. Research versus Validation versus Extension

Parallel to the unclear concept of validation, a second, and similarly un-focused understanding of the project methodology found during field visits concerned the distinction between "Validation" on one hand, and "Research" and "Extension" on the other. While there is a superficial knowledge by staff that this is primarily a validation project, deeper probing shows considerable confusion in the way it is implemented.

The majority of counterpart staff has been recruited from the extension system of the local Ministries of Agriculture. It is not easy for them to change their mindset of former extension work to validation, something they do not perceive as all that different. As a result, many counterpart extensionists see their new work within the project largely as extension, but with a few record-keeping activities added. In other words they carry on the same tasks, with the same approach, only with fewer farmers and better support, especially transport. This does not do the "Validation" focus justice, and in fact makes the project look more like an "Integrated Rural Development" Project, with careful record keeping. Is this consistent with the objectives of Validation? By the definition of Validation it is a process which generates information to be handed over later to the extension system for implementation.

A similar distraction was evident on the other end of the spectrum, where many of the project activities move away from validation and slip into "on-farm" research. On occasion a farmer's field was presented as being divided into three varieties of maize or beans, with two levels of fertilizer application. Is this validation? It seems that within the validation project a number of research activities were undertaken which do not belong there.

This situation is made worse because the project also carries out specific



research activities. One of the few research activities observed was basically simple on-farm research, with different fertilizer treatments for different crops. It seemed to be carried out by the extension staff, and there was evidence of a lack of professional input. The results are thus likely to be of limited use.

If validation is defined as a distinct step of a technology moving from the lab to the farm, then these research activities are clearly earlier steps in the process. They should thus not be undertaken by a validation project, but should be referred back to the research system. This should also happen with new ideas for useful technologies, and with technologies which are not ready for validation. The project is in the fortunate position to have in CATIE a sound research backup, and these research tasks should thus be put back into the CATIE research system. Here they would get the technical competence they need, and would produce more reliable results, which at a later stage could enter the validation process.

The project is thus in danger of having lost its validation focus by slipping simultaneously into both extension and research activities.

**Recommendation:** The project focus requires sharpening. It is recommended that activities concentrate on a set of technology validations that permit the Project to attain its objectives, dropping some technologies and resisting the introduction of new ones. Present research activities should be phased out in 1992/93, transferring promising activities to CATIE other research institutions.

#### 4.3.4. A Farming System Focus

CATIE is renowned in the region as a research institution which had made an outstanding contribution in the area of cropping systems and farming system research. It was therefore somewhat surprising to find that the present validation project does not seem to reflect this strength. Instead, each technology is basically treated as free standing, and the farmer chooses those he would like to use. As a result he may pick only given aspects of agro-forestry or feed production, rather than an integrated package of inter-related and often mutually re-enforcing technologies. He may for example choose the "horno foragero", the in-ground silo, but not grow sugar cane, sorghum or leucaena trees as additional feed sources. This silo can then only feed his cattle for an extra two weeks, and the impact is limited. Many other technologies also have the potential for a multiple impact (for example sugar cane rows serve as soil erosion control, wind break and cattle feed), yet these uses is not fully integrated into a system.

A further complicating factor is that technologies have been chosen in response to the results of the base-line study (sondeo), which identified a large number of diverse needs. This has led to a fairly random choice of technologies, from drinking water and food preservation to salt blocks for cattle, which had the effect of dissipating the early focus of the project. The temptation to respond to an increasing number of genuine needs will continue to cause a diffusion of effort, a trend which should be resisted. At the same time some technologies have not been included, which would form an essential part of a given production system. Mentioned here could be the genetic improvement of cattle or pasture management.

In the initial project design one of the objectives was clearly to integrate individual technologies into systems, and to use the information in a modelling approach. Since then the Systems Unit at CATIE is no longer present in its former strength, and it may be difficult to find suitable outside help with this complex task. This aspect of the project may therefore be too ambitious, and too demanding on the resources of the project. To fully complete the validation aspect might be as much as the project can accomplish in the time allocated, and with the remaining budget, and the modelling task may have to be carried out later.

In any future project of this type it would however be wise to incorporate a systems-oriented approach into the project. This should start with a farm resource diagnosis, and a priority setting exercise with the farmer, ie. to decide "what he has and what he wants". Based on this goal setting exercise, an integrated package of technologies can then be designed between the farmer and the extensionist. Thus if, for example, the farmer's top priority is milk production, then a dry season feeding strategy could be devised which will allow him to maintain a level of milk production for the full dry season. The choice of suitable technologies would then consider the quantity and quality of feed needed, and the resources available. This goal-oriented approach would lead to a number of packages of suitable technologies, and the system could be custom designed to fit the goals of different farmers.

#### 4.3.5. Stratification of Coejecutores

The original Project plan foresaw a stratification of Coejecutores into groups with different characteristics, into strata or "Dominios de Recomendacion." Guatemala has continued to use this concept, including it in the 1992/93 annual plan. While there is some justification in using this approach, it also has a tendency to further complicate what is already a very complicated Project. This seems to be the rationale for the Project Management decision to discourage the use of this concept in the other three countries.

### 4.4. Project Implementation

#### 4.4.1. Choosing the Coejecutores

The CATIE/ACDI project has made a systematic effort to define the specific project environment. It clearly defined the areas of action as the dry tropics and hillside farm land. This was then narrowed to specifically defined sub-regions, using information from well executed "sondeos" (surveys and baseline studies). This information in turn formed the foundation for the selection of the Coejecutores (the participating farmers). For the farming families themselves a number of well defined selection criteria were set out, and the actual families were chosen on the basis of these. Thus a farmer, among other criteria, needed to own cattle, crop land and pastures/forest. The farmer was also characterized as having to be willing to cooperate with the project. This intensive selection process however has led to the choice of a rather narrow type of Coejecutor:

- A considerable segment of the farming population in these dry hill areas are not likely to have cattle, or only limited land, and a number will have neither. In social strata terms, these farmers would thus belong to relatively well off segment of the whole population, and the Evaluation Team thinks that this may represent a group as small as 20% of the region's overall population, judging from the observations of the many farm visits. Available information has not been able to place the specific farmer group within the context of the overall community.
- Since the selection was carried out with the help of extension staff, many of the farmers were known to them before. Especially those farmers most interested in new technologies would have worked with extension staff in the past. In terms of social characterization these farmers could be considered as opinion leaders, early adopters or progressive farmers. They thus represent a very specific type of farmer within their community, and are not representative of the majority of farmers in a typical community.

Inherently there is good reason to have selected farmers with these attributes, as these qualities may well be a prerequisite for the success of the Validation process. They may, however, also contribute to reducing the long-term usefulness of the project. The better-off farmer has two main advantages over his neighbour: he has the resources to purchase necessary inputs and he can afford to take more risk. For example, validations of some new maize or bean varieties have shown lower yields than the traditional (criollo) varieties under local conditions. The poor neighbour might have a starving family if this happened to him. Similarly, in one community it was found that the Coejecutor family had a new wood stove, which was greatly admired by the community. Although everybody wanted one, it was stated that none of the other families could afford the materials.

The later usefulness of the technologies can not help but be influenced by these selection factors. Technologies which involve cattle production will be appropriate to most other cattle farmers, and thus applicable for the whole of that sub-sector of the community. Crop and home technologies on the other hand should have much wider application, and could well benefit the whole community. Having validated these technologies in the narrow social segment defined by the project may make them not applicable to these poorer strata of the community. The project has recognized this, and during the last year had discontinued working with the wealthiest Coejecutores, particularly in Guatemala.

By designing the project specifically so that it works with better off farmers and progressive producers, the dissemination process will then have to rely on the "Trickle Down Effect" to spread the adoption of these technologies, a process which been discredited. As this parameter must be considered a built-in shortcoming in the project design, this can not be corrected now. However, in case of future similar projects, this aspect will need to be carefully considered. Since the problems with technology adoption are largely of a social and economic nature, a new project focus may shift more to this area, and may well consider a process of validating technologies with uneducated, poor farmers, which would provide better assurances that successful technologies could be adapted by the majority of the rural population.

The experiences gained here may be useful in future, where a validation process could be redesigned in such a way that a wider target group is involved, and future parameters for choosing Coejecutores may need to be changed.

#### 4.4.2. The Project's Choice of Technologies

The CATIE/ACDI project was based on an initial assumption that CATIE, as a research organisation, had developed a number of new and useful technologies which were at the stage to be validated before being made widely available to farmers. Many presumably suited the specific requirements of the dry hillside farms of western Central America. This was a major assumption of this project.

However, during the evaluation it became clear that few of the technologies chosen had been developed by CATIE, and indeed few were new. Thus vegetable gardens and improved stoves had been promoted for years, and feed preservation practices had been taught by local extension staff for many years. Similarly wood lots, fruit trees and live fences had been around for many years, and cattle vaccinations and seed trials were standard activities of all Ministries of Agriculture. Why were they chosen for validation by the Project? It seems that no clear criteria were established for the choice of technologies.

Many valid information collection activities were carried out on farmer selection and social parameters, and yet a lack of the equivalent effort in technology selection is evident. There was no formal search of new technologies undertaken to cover the regional research institutes, nor was there a clear and detailed documented description of the existing technologies. Yet it seems a logical approach would have been to identify farmer's needs on one hand, and parallel to this document the potential technologies available. Based on detailed information on both aspects, the choice of technologies could then have been matched to the identified needs of the farmers.

The technologies chosen were thus to a considerable extent those already used by the extension system, and in many cases technologies that had not been adopted widely. An alternative to "recycling" these technologies would have been to ask why these were not adopted by farmers in the first place.

The type of technology presented to Coejecutores also reflects a preference in an other direction. Here a distinction may be made between "hard" technologies and "soft" technologies, where the former relates to tangible goods, such as stoves, silos and trees, while the latter is more training, teaching and management oriented, ie. focuses on knowledge. The obvious bias of the project has been on "hard" technologies, at the expense of such management aspects as cattle reproductive control, or woodlot and pasture management. It is felt that this orientation deprives the project of an important aspect of farm improvement, and in a future project an effort should be made to establish a number of "knowledge packages", parallel to the technology packages.

#### 4.4.3. Choice of Technologies by Farmers

The project has an overall portfolio of some twenty basic technologies for

validation, some with a number of distinct variations. Appendix 4.3 provides a list of these technologies by country, along with other key activities of the Project. A farmer can not use all of the technologies, and project staff have shown good cooperation with the Coejecutores to help them choose the most suitable technologies. The question nevertheless remains as to how much of this choice was the farmers, and how much it was persuasion by the extension officer. Here it seems that especially in Nicaragua approximately the same percentage of farmers have chosen the different technologies, an unlikely occurrence with free choice.

However even if the farmers had a free choice, the ability to understand the choices may not be present, and the choices may not reflect their most important needs. And the number of chosen technologies will have an impact on the validation process. Some of the farms visited were able to show almost the whole portfolio of technologies.

In a brief analysis it became apparent that the animal health technologies were not a choice, but were compulsory. A clear preference by farmers has been the new bean varieties, due to the disease problem which the new varieties overcome (mosaic is less of a problem in Nicaragua). Vegetable gardens also have their appeal, as have the silos. Maize seems less popular, possibly because farmers know already that the new varieties are not useful in their environment.

The forestry projects on the other hand seem to meet with a rather lukewarm response, and several of the technologies not listed have even lower interest rates, such as the "Protein Bank", soil conservation with trees and food preservation.

One of the built-in problem areas of this type of project is in its very orientation. The "Agricultural System" (ie. the established research and extension system) has some technologies which it wants to test for dissemination. This automatically makes the approach input-oriented, as the technologies were pre-selected for validation. This represents the traditional, top-down focus, which has in the past been shown to have serious limitations.

The project has generated considerable knowledge of the farming situation, both in the technical sphere and at the social level, and is therefore now in a good position to understand farmers needs and aspirations. It is from this type of close contact that problems on the farm must be identified and addressed. Instead of imposing these from the outside, the process needs to be reversed, and technologies should be chosen to overcome a specific problem as defined by the farmer. Instead the present approach is quite random, and lacks sound planning and an analytical methodology. Rather than starting with the technology, and looking for takers, it might be a better approach to start with the farmers and his needs, and then offer a package of technologies to address these needs.

#### 4.4.4. The Project Implementation Effort

The process of validation in on-farm situations demands that certain standard inputs were necessary to make the validation process a success. Two major ones are a given level of project staffing, and the necessary means of transport. The counterpart organizations allocated a number of extension staff out of its own

system to the project. The project itself provided adequate vehicles, as well as covering their operational and maintenance costs.

Although the project has different counterpart organizations in each country, the level of effort by each individual project is quite similar. In Honduras, for example, the Project has three fulltime staff, while the counterpart organization provided four full-time and a further nine part-time extension counterparts. From this data it is possible to calculate a level of effort:

**TABLE 4.1. INTENSITY OF PROJECT EFFORT**

Country	Person-Years (tech. staff)	Coejecutores (number of)	Farmers/Staff
El Salvador	17.4	40	2.3
Guatemala	22.1	28	1.3
Honduras	9.4	24	2.5
Nicaragua	10.8	28	2.6
Total/Average	59.7	120	2.0

Source: Data provided to the Team by the four Project leaders

Table 4.1. shows that on average about one half a person year of project staff time is spent per Coejecutor. This may well be necessary for data collection purposes, but indications from farm visits and interviews with extension staff are that this staffing level results in each participating family being visited at least once per week. In fact the main praise received from farmers about the project is the frequent and close contact and the time extension staff spend teaching the farmer and his wife.

Here the concept of minimum intervention needs to be addressed. The assumption in the field has been that this refers to minimum changes in agricultural practices associated with a new technology. This would mean an approach of letting the farmer use the new technology very much the same way as he has done traditionally. This is evident where a new bean variety is used under exactly the same field conditions as the old ones he used earlier. This is a valid approach to measure fit and acceptability of a technology by a farmer, under his own specific conditions.

However, a different interpretation of minimum intervention exists in project documents, concerning the level and intensity of extension contact. Under this

definition minimum intervention would refer to a low level of extension effort, at a level which can be replicated by extension staff of the typical Ministry of Agriculture. This difference in understanding seems to have created a contradiction at the management level, while in the field the situation is quite clear. Here the extension effort is considerable, but some of the technologies are used in the context of the farmer's usual practices.

This intensity of contact introduces a problematic new factor into the validation process. It is quite possible that some of these technologies only work based on intensive interaction with the farmer, with long training sessions, close supervision and frequent visits. It is clear that while the project can afford this, the Counterpart Ministry can not. And since the assumption is that successful technologies will be handed over to the Ministry for implementation, it should also be understood that this level of coverage can not be maintained. Ministries of Agriculture are notoriously short of funds, staff and transport, and some new government policies in Central America now aim to further reduce public expenditure and cut back on staffing and funding for all government agencies, but especially for agriculture.

Under these circumstances, a technology that has been shown to be highly successful in the validation process may fail when it has to be implemented with only a fraction of the extension effort of this project. The level of extension effort could thus put the success of some of the validated technologies in serious doubt.

#### 4.4.5. Quality of Implementation

One of the many uncontrolled variables that have crept into the validation process is the quality of implementation and the comparability of results. A given technology may be excellent and a farmer may be eager to adopt it, assuming that he can be shown that it works. However, if the implementation of the validation is of low quality, it may not work. This convinces the farmer that it is no use. During farm visits, considerable evidence was found that some of the technologies are not implemented with the necessary knowledge and care. For example, several improved stoves were found without a chimney, and in some cases contour barriers were not horizontal, thus forming rivers instead of preventing them. Similarly, a corn field visited had a heavy infestation of corn borer, and the quality of home gardens was poor throughout.

Although the level of dedication of the project's extension staff was found to be high, evidence in the field shows that improvements need to be made to the quality of specific technology implementation. The quality of execution will have a strong bearing on the outcome of the validation results, and needs to be of a high standard. Here a detailed implementation manual to which extension staff could refer to for all technologies do not seem to exist. Such manuals would help not only to ensure a better quality of technology implementation, but also a higher level of uniformity between areas and countries.

In order to draw sound conclusions from the validation process, it is necessary to standardize the technologies as much as possible, while leaving some flexibility for local adaptation. Thus even if a new and better stove design is suddenly

found, the validation process should not change to the new one, as seems to have happened in one country. This is the area where the GIT could play a much stronger role, in helping to carefully document the technologies, in the training of staff on each individual technology, and in supervision and quality control. Such increased emphasis on a high level of input quality would be an important step towards making the validation results more reliable.

**Recommendation:** In order to fully utilize validation results, it will be necessary to document the process of validation in each case, for use by both management and field staff, and then establish a clear monitoring system to ensure that implementation is of a high standard of quality.

#### 4.4.6. Data Collection, Analysis and Interpretation

Recent efforts by project management have made useful and important steps towards the establishment of a system of data collection on the technologies, which is fundamental to the validation process. A number of forms have been designed to capture detailed information, extension staff have been trained in their use, and a computer data recording system has been set up.

Project staff at Headquarters designed 22 formats to use in technology validation. This is an important step, however, these necessary instruments were implemented two years after the beginning of the Project. There is some question as to whether these formats were tested before the country teams began using them, yet no problems have been reported so far. Some formats however are still incomplete. For example, the format for the wood saving stove does not include a cell to register the number of people who ate in the house during the period being measured. The amount of fire wood used would vary depending on the amount of cooking relative to the amount of people being served. Another possible problem is in the measurement of labour, particularly in regards to women and children. It is a widely accepted problem that women and children's contribution to farm related activities is unrecognized or undervalued. Consequently, those collecting data need to be well trained and understand the issue of under reporting.

In research it is the rule that the data collection system be set up before the experiment starts and it seems surprising that this is only taking place now. Much of the earlier work, especially in Guatemala, can now be analyzed using the new system only with great difficulty. One of the possible negative outcomes of this belated data collection process is the type of data collected, as it seems that there has been a lack of clear definition as to exactly what data is essential, and the project seems to have taken the approach of collecting as much information as possible. But more data is not necessarily better than less data. Rather there is a trade-off between the amount of data to be collected, and the difficulty and complexity and cost of the collection task. Inadequate prioritizing of the need for data being collected may cause an excess of data in some areas, which will not significantly add to knowledge, and may in the end be discarded.

Another data problem became manifest with preliminary maize yield analysis in Honduras. Here the results of validation of two new varieties showed that on each of the three farms a different variety out-yielded the two others. This brings up



a fundamental question. In classic research independent variables are kept to a minimum, in order to get reliable results. In validation the execution is purposely fitted into a realistic farm situation, but this also means that a large number of undefined and unidentified factors will influence the results. After three years the validation process is expected to yield solid answers as to the usefulness of a technology. What if the sample is too small, the data is contradictory, the analysis too complex, and the results inconclusive? What will the recommendations by the CATIE/ACDI project to local Ministries of Agriculture be under these circumstances?

Project leadership over the past year has made great strides towards setting up a data system, which is an integral part of validation. It is now essential to set clear goals for the end of the project in terms of data analysis and publication. To reach these goals the Project will need to concentrate all its efforts towards the essential. It will need to cancel any new activities, it will have to reduce present work to the essential, and foremost it will have to concentrate on the information collection and analysis task.

#### 4.4.7. Environmental Aspects of the Validation Technologies

One of the fundamental development aspects of this project is the protection of the environment, even though this topic is only covered as an appendix to the project agreement. The choice of the dry tropics and hill farms clearly represents a fragile environment, which demands that the project focus must deal with environmental topics.

A considerable number of technologies introduced by the project have an environmental aspect, while several others are fully environment oriented. Of particular importance here are the soil conservation technologies for crop production on steep slopes, and the wood production technologies reducing deforestation. Both types of project have had a major impact, where especially the "barrieras", the contour erosion control barriers, have an immediate and visible effect, which is clearly appreciated by the farmers.

Despite these successes, the technologies and their management do not do the environmental concerns full justice. The implicit problem with environmental technologies is that many results are not immediately visible or tangible, and their impact time horizon may be measured in decades rather than growing seasons. As a result, the cost-benefit analysis which every farmer carries out will give such activities a low priority. For example building a stone contour terrace demands time and effort which could be allocated elsewhere with more useful results.

The success of environmental technologies is thus closely linked with the type of farmer chosen. These are farmers who can afford to divert resources away from immediate food production towards long-term investments, something his poorer neighbour, living hand to mouth, can not do. It is thus clear that environmental type technologies will be difficult to disseminate, especially if they are introduced as free standing activities. In order to assure their use, it may well be necessary to provide incentives. This has been done well by the project, especially in its recent change away from simple new seed introduction to a

cropping approach combining new seeds with improved soil conservation activities. This experience can now be built on by combining other present free standing technologies into integrated packages. This could be a combination of agro-forestry and pasture management practices, and more emphasis on cropping systems on steep slopes with integrated soil conservation practices.

#### 4.5. Assessment of Impact to Date

The validation process is assumed to produce a clear answer as to the usefulness of a technology, and the successful ones should be documented with simple guidelines of how to implement a technology. This information would be used by the extension system, and would be the key to its wider dissemination. Earlier sections have raised doubts as to both the reliability of the validation results, and on the potential future usefulness of these results as the basis for the widespread introduction of new technologies. These potential problems need to be taken into consideration, as the impact of the project will depend on them.

Much of the usefulness of the project will however depend on the implementing agencies, which is expected to take over. Within the project extension and research staff have shown a high level of dedication and hard work, which have helped making the project a success. This may not necessarily be the case with the Government Ministries of Agriculture, especially with the recent further funding cuts, their ability to utilize these technologies could be seriously hampered.

One of the main validation measures defined is economic impact. Only Guatemala is at a stage in the process to start the analysis of the technologies, including economic benefits. A sound first attempt has been made, but the sample size has been small, and many results contradictory. Once the results of the present season are in, information will allow more solid conclusions.

To a degree impact could also be assessed by the level of spontaneous dissemination from Coejecutores to their neighbours. This is however not a goal of the validation process, and should not necessarily be used as an indicator. At several occasions on farm visits hindrances to dissemination were encountered, and have been mentioned. There has nevertheless been an informal dissemination process, especially with the disease resistant bean varieties, which are distributed quite freely as seed material, particularly to family members.

Impact of a technology primarily needs to be measured in terms of how it will enhance the farmer's income, well-being and standard of living. At the scale of these technologies the opportunities for increasing production to lift the small producer from subsistence to cash income producers do not seem promising. Instead it was evident that the increased production will largely be used within the subsistence system. For example a small silo will provide some four weeks of additional milk production for two cows, but this extra milk is then used by the family. To increase nutrition and well-being of a family may be an adequate goal for the project, and could have a considerable impact, especially on children.

The goal of enhancing a subsistence system however causes a problem. Although the project chose low-cost technologies, these will still need specific inputs to be

purchased, while the additional output will not generate any cash to purchase these inputs. This cash will then have to come from somewhere else, and if it is not there, the use of the new technology will have to be discontinued. It is therefore useful to include technologies which are money earners, so that the higher level of wellbeing can be financed, which will put the improved system on a sustainable footing. Fruit trees and small forest plots have already been built into the project, but these should be specifically defined as cash earners, to enable the farmer to purchase inputs for other technologies.

Lastly the environmental impact of project technologies may be less visible, but will no doubt have a longer lasting positive effect. The earlier suggestions promoting conservation and environmental protection will lead to the maintenance of the productive potential of the land, be it cropping area, pasture or forest, and will put the fragile production system on a sustainable basis.

## CHAPTER 5. SOCIAL DYNAMICS OF THE PROJECT

This chapter complies with the Women in Development (WID) section of the Evaluation TORs. During the evaluation process it became apparent that the WID component had come to represent almost all the social aspects of the Project. WID is a marginal component to the overall project, however it now serves as the primary vehicle for all the social issues within the Project.

As will be discussed further on, CATIE is beginning to untangle WID and other social issues of the Project. To contribute to this process of clarification, this chapter addresses the social dynamics of the Project. The first five sections review specific WID issues, emphasizing the role of women as participants in the Project. The last section examines the social focus of the Project, particularly its recent orientation to social research, training in the social dimensions of the Project, and the issue of social validation.

### 5.1 The Role of Women in the Farming System

Women play a crucial role in food security within the farm system in most parts of the world. The degree of participation is greatly influenced by family composition and structure, the women's life cycle, and economic conditions the family must share. This fact, although documented in several studies, is not always recognized by development planners. For the most part, women's contribution to the farm system, particularly subsistence farming, is not valued as work or as having any economic worth.

A number of false assumptions contribute to undermine the participation of women in the farming system and are often the basis for project designs, including extension services: a) rural women do not work, they are "homemakers"; b) women like to participate only in development projects dealing with health and related home activities; c) since rural families are headed by men, projects must focus activities around them; d) rural women are homogeneous; e) women are house-bound thus play a passive role in community development activities (Aguilar, 1992).

#### 5.1.1. Pre-Project Role of Women in Agriculture

The understanding of the pre-Project role of women in the farm productive system was based entirely on Characterization Studies (Sondeos). In all four countries a characterization study in the potential project areas was carried out. The data and analysis these studies provided were insufficient to define project strategy for involving women. There was no review of existing literature pertaining to WID.

The characterization studies reported the following: women (referring to them as farmer's wives) are responsible for the raising of small livestock, growing vegetable gardens and processing milk; in different degrees, women have decision-making power over these farm activities including any cash income generated by them; wives have sole decision power over family food consumption products, and

most of them (singly or jointly with the husband) make decisions regarding health and education.

From the outset the characterization studies separate Project activities by gender. Two of the reports address management practices of small livestock and vegetable production as part of the Livestock (Cattle) or Agriculture Sub-systems, which are male-oriented, instead of the Home Sub-system, the WID component. Although these are defined within the Agriculture and Livestock (cattle) Sub-systems, when it comes time to define solutions these solutions are analyzed in the Home Sub-system.

None of the characterization studies provide data regarding women as head-of-household. The Nicaragua report indicates that there are women-headed households responsible for farm activities. The report, however, does not specify number of interviewed farmers by gender. In El Salvador no mention is made of women-headed households even though the Team later decided to include women farmers as direct project participants.

The underlying assumption in the characterization studies is that the project activities would be with women as homemakers and overseers of family welfare and not with women's specific needs and constraints within the farm system. One of the selection criteria of participants in Guatemala was the existence of "an integrated family" (husband and wife), ignoring the changes in family structure brought about in Central American countries because of war and guerilla activities. The characterization studies also lacked a review of existing literature. For example, in 1990 CIDA published a profile of the women in Nicaragua still unknown by the Project staff.

There was an inadequate analysis or concept of the role of women in a farm system, leading to their under representation. Additionally, the WID issues were diluted because this mandate was used as a catch-all for all social issues relating to family living conditions. Presently, the limited understanding by project staff is apparent and efforts are being made to expand the staff's knowledge on the role of women within the farming system (Section 5.5).

#### 5.1.2. Women in the Project Areas

The findings indicate that there is scattered but rich information among some Project staff and counterpart members with regards to the role of women in the farm system. This knowledge, however, has not been systematized and channelled in the Project. Individual awareness of gender issues often seems divorced from project activities.

Project staff and counterparts, both men and women, seem to be aware of the active participation of women in the farm and their influence in decisions related to farm production activities. The home educators in Guatemala, who have been functioning as such for at least ten years, explained that "besides domestic activities, women care for the vegetable garden and small animals. They also sell herbs such as coriander and work during the corn harvest."

There are differences in women's participation which is related to family

composition (i.e. number of males) and family economic conditions (Urueta 1992). If there is enough male family labour and or enough resources to hire labour there is less need for women to directly work in planting and harvesting activities. Even when women do not physically work in the agricultural plot, they do contribute to farm production activities. In the case of a participating family in Honduras, for example, the wife and older daughter are responsible for preparing and serving the meals for the hired labour. In these cases, part of the payment for labour is in meals.

The Project has artificially divided the technologies by gender, yet in actuality the families distribute the labour as it suits them best. One of the key examples is the construction of pit silos for cattle, a technology geared to male farmers under the Livestock Sub-system. In some of the families the woman and children built the silo. In at least two of the countries there was evidence of direct women participation in the Livestock Subsystem, particularly in milking cows and giving cattle water.

Men also participate in activities of the Home Sub-system. In some cases men have planted the vegetable garden or the trees which the women later cared for. Even water-harvesting and wood-saving stoves are not always the exclusive domain of the women. In a Honduran family, for example, both husband and wife explained that it was the man who selected the water-harvesting technology because hauling water was so time consuming and costly for him. He was also interested in the wood-saving stove because he was responsible for getting the firewood.

Agriculture production is also a shared activity in many rural families. In a Guatemalan community women explained how they and their daughters assist the husbands in agriculture activities when necessary. Women, often times indirectly, influence farming decisions. A recent study by the Project (Urueta, 1992) indicates that women in the participant families use subtle strategies to influence their partners. Women's likes or dislikes of selected grain seeds will undoubtedly be important in whether that same variety is adopted by the farmer. One of the women interviewed for this Evaluation explained that "the beans that he (referring to her husband) planted with the Project cook very fast". Although she did not outwardly express it, the implication was that if the beans took longer to cook most probably he will not plant them again next year.

There is a production partnership among several of the families in the Project areas. In some cases the men openly explained how they consult with their wives regarding decisions pertaining to production. Referring to the acceptance of technologies offered by the Project a male farmer explained, "I always ask her because if things don't work out I don't want to carry all the blame." In another family a woman explained how her husband makes the decisions regarding what he will plant and when he will sell the products. However, she relates, "now he always consults with me. Before he did not pay attention to my suggestions and had several failures; now he always wants my opinion."

There are some cases when women, even if they do have a partner, make decisions which seem to trespass into the traditional male domain. In a Nicaraguan family, for example, the woman decided that her son instead of her husband should be the project participant. This is an extended family and the son lives in a separate house with his wife and child. The mother though, decided that she would do the

vegetable garden (which the husband actually planted). This scattered information regarding the role of women in the farm unit needs to be systematized and channelled into the Project.

**Recommendation:** It is recommended that the Project design mechanisms to discuss and apply findings and existing knowledge regarding women in the farming system among Project staff and counterparts.

With the assistance of the regional WID consultant, in-country WID specialists could plan a series of short but systematic sessions with staff and counterparts to discuss available data, decode and organize the diverse information regarding gender issues, and decide how to use this knowledge in the Project.

## 5.2. WID Policies

For the most part, project implementing agencies such as CATIE, national governments and other support agencies lack clearly defined WID policies. This pre-Project condition was a short-coming in complying with CIDA's WID policy which requires strategies to ensure the inclusion of Third World women as agents and beneficiaries of the development process.

At the inception of this Project CATIE did not have, and still does not have, a WID policy. As was expressed by an interviewee at CATIE, "WID is of concern to all donors but nobody knows what to do or how to do it." CATIE is an agriculture training and research institution and as such has few resources to draw upon in the social areas of development which include WID issues.

National governments, through their Ministries of Agriculture, have been voicing the importance of including women in the development process. However, these programs are often merely contributing to foster traditional roles. The social promoters and home educators of these institutions have been promoting traditional activities such as sewing, embroidery, vegetable gardens and cooking for many years. For the most part, national projects to incorporate women are not based on a WID policy much less on a clear understanding of gender issues.

There is an indication that some of the governments, El Salvador in particular, will be emphasizing gender issues. For example, CENTA in El Salvador has negotiated funds with the World Bank for a study on the conditions of women in the agriculture sector and to implement approximately 30 courses in gender concept training.

The absence of a WID policy at CATIE and the national implementing institutions was a major constraint to design and execute an appropriate strategy for the participation of women. Without adequate guidelines the Project has been struggling to deal with WID issues.

**Recommendation:** At the institutional level, it is recommended that CATIE analyze its limitations in handling the social dynamics, such as gender issues, when researching and validating technologies.

To undertake this task CATIE will probably need systematic support from social

scientists with sufficient experience in gender analysis. If these efforts are undertaken, the results will not necessarily have a significant effect on this Project but it will be of great importance for all other CATIE projects which are in the technology research stage or ready for technology transference.

### 5.3. Project Management Support for WID

The concept of WID has not been sufficiently supported by Project management. There are two pre-Project conditions which explain this. CATIE's limited experience in social and WID issues, discussed above (Section 5.2), and the treatment of WID in the POP (1989). As the Project evolved management support of WID issues has improved.

#### 5.3.1. Project Beginnings

WID issues were a marginal component discussed in a Special Considerations section at the end of the 1989 POP. The underlying assumption is that men are the farmers and that women and youth "play a key role in the productive system." This relegates women, from the inception of the Project, to a secondary position even if the POP states that women should be properly represented in management activities within the Project.

At this early stage, the social aspects of the Project were not identified or recognized. The integrated Project focus is limited to the technical productive agro-silvopastoral domain: agriculture, cattle raising, and agro-forestry through environmentally sound practices such as soil conservation.

In the POP, expected results regarding improvement of family living conditions are identified as part of WID. These include: additional family income from selling seedlings; processed dairy products and small livestock and their products; improvement of nutritional standard of the whole family especially by increasing the protein intake of the daily diet. Results thus as expressed clearly limit women's participation to the domestic sphere. Even though the POP makes reference to gender-specific training, all women's activities are geared to serve the family.

The participant during the early stages of the Project was the male farmer who received some support from the rest of the family. In its evolution, the Project has taken more of a family focus.

#### 5.3.2. Project Evolution

In spite of the struggle to decipher the project mandate regarding WID and perhaps a subtle resistance to deal with issues, changes in Project orientation with regards to WID and gender are beginning to surface. As the Project evolved, social considerations began to emerge and became part of the WID activities. Family nutrition, distribution and use of time by family members and acceptance of technologies became project concerns. Staff training in participatory data collection methodologies to be used in its validation process, and the design of



research validation formats became a priority. The Project is merging family issues, methodologies and the WID mandate as expressed in the POP, into the Home Sub-system.

Activities geared to women though, are still somewhat marginal to the Project. The Project, both at Headquarters and in the four countries, now voices that the participant is the family unit, and not only the male farmer. Recent flow charts and project discussions place the home as the centre. This is indicative of the recently discovered importance of social issues to ensure project success. Women-related activities, however, are only part of Project's concern for overall family development, yet in that context women continue to be perceived as an extension of the family and not as individuals.

In conclusion, although the Project began fostering activities geared to women, there has been little or no support for them. These activities began without adequate knowledge of women's role in agriculture, the decision making process in the household and an analysis of gender issues. Presently though, the Project is making efforts to solve some these limitations.

#### **5.4. Women as Participants in the Project**

The women who participate in the Project can be classified into three groups. The majority of participants are wives of farmers for whom the Project offers technologies geared to improve family living conditions. The second group is a small number of women farmers who are heads of household. The third group are all the women who work as Project staff and counterparts.

##### **5.4.1. Women as "Homemakers"**

Women as "homemakers", either as wives or daughters of participating farmers, have the greatest representation among the women in the Project. The 107 women in this category participate in the Project through the Home Subsystem. These women, are responsible for not only domestic chores but many other farm related activities. As the Project itself recognized, most of the women categorized as "homemakers" care for small livestock, process milk and grow vegetable gardens, all income generating activities whether in kind or in cash.

Project rationale for separating agriculture and cattle raising activities by gender is not clear. Project staff often mentioned that women's productive activities are mainly for family consumption thus their subsequent placement under the Home Subsystem. The same rationale could be applied to milk production in the farms as most of the families visited during the Evaluation used the milk for family consumption, yet milk production is part of the Livestock (cattle) Sub-system.

The above analysis indicates a confusion in project design and implementation, and even more clearly an underestimation of those activities carried out by women.

#### 5.4.2. Women as Farmers

In two of the countries the Project is including women farmers as direct Project participants. The number of women farmers head of household in Central America has been on the rise. The Project has come to recognize this fact, and when Nicaragua and El Salvador selected participants, the presence of women farmers could not be ignored.

Two of the participants in Nicaragua are women farmers. In one case, a women's husband was in a refugee camp in Honduras and has recently returned. According to Project staff his return has hindered the work and it might be necessary to substitute that family for another one. The other woman farmer in Nicaragua has recently been included in the Project. In El Salvador, of the 41 Project families selected, seven (17%) are headed by widowed women, most with young children. These women are responsible for all agriculture and cattle raising activities in their farms and when family labour is insufficient, they hire workers for certain farm tasks.

In these single parent households the burden is greater than when productive and domestic activities are shared by the couple. One of the women farmers in El Salvador, for example, has a full-time job in a local government agency, works on her farm during week-ends, and supervises one full-time worker. Before she goes to work in the morning, and when she returns home in the afternoon, she must care for the children and oversee the cattle and chickens which are kept in the yard.

In conclusion, the selection of women farmers as Project participants, albeit somewhat overdue, is complying with Project mandate to include women who play a key role in farm management activities. The findings from technology validation in farm productive units headed by women where they are both farmers and "homemakers" could help to design extension programs geared to serve women farmers.

Special support should be given to ensure the quality of the data collected and that the analysis of women-headed households considers all the social variables, including gender issues. In that manner lessons learned from the experience could be translated into action programs.

#### 5.4.3. Women as Project and Counterpart Staff

The Project was designed and began operations without any technical staff with expertise in gender issues at Headquarters or in any of the countries. The Home Sub-system started in three of the countries before a person to manage it was hired. The counterparts of each Ministry of Agriculture were responsible for the Home Subsystem.

The absence of a WID specialist at Headquarters was a constraint identified at the beginning of the Project. In early 1991 the Monitor Report (Feb.16-March 9) indicated the need to hire a regional consultant on gender issues to provide continuous support. The Project hired a male anthropologist at the end of 1991 who began supporting the social aspects of the Project. At the end of April of this year the Project also hired a woman anthropologist as the WID specialist for a six-month period.

Until recently, Home Sub-system activities were entirely in the hands of counterpart staff. At the country level, with the exception of El Salvador, women staff members were hired at least a year after Project initiation even though the need to strengthen WID was mentioned in several early Project documents (Bazinet, 1990, and the October 1991 Monitor Report).

There are two main explanations for the delay in hiring staff for WID and the Home Sub-system. First of all, in the early stages of the Project it seems that counterparts were expected to solely manage WID-related activities. In Guatemala, for example, the Country Director at the time recognized the weakness of this traditional approach to WID (Bazinet, 1990). Secondly, when the Project decided to hire technicians for WID issues and the Home Sub-system, the staff claimed that it was difficult to find women willing to live in Project areas.

Presently there are five women technicians for the Home Subsystem at the country level, two in El Salvador and one in each of the other countries. These women technicians are an important asset to the Project. They come from different educational backgrounds and field experiences. All of them are interested in the participation of women in the Project and they have the potential to strengthen the WID component. However, they have had little training in gender issues and for the most part are not aware of country specific data pertaining to women.

Counterpart support varies in the four countries. In Guatemala one of the counterpart supervisors has been the key person of the Home Sub-system. DIGESA assigned two supervisors and five home educators to the Project. Honduras, on the other hand, has no counterparts for the home subsystem. LUPB collaborates with the Project and provides specific support when required, but nothing systematically.

Without appropriate WID support staff, counterparts have relied on their own experience. This experience, while extensive, often emphasized technology transference while the Project goal is technology validation. In Guatemala, for example, during most of the first two years the Home Sub-system had this conflict.

The project has made efforts to rectify this situation. Counterparts now have a better understanding of the difference between validation and transference. The recent Project publication on validation (July, 1992), once it is disseminated and discussed at country level, will standardize and strengthen the concept of validation in the Project.

In summary, the weak beginnings of WID Project management support is due mainly to the absence of adequate technical assistance in gender issues. Experience and understanding of WID issues among staff and counterparts has, and will continue to, affect the evolution of the subsystem and the treatment that each country gives to gender issues.

Staff members have the potential to grow in their understanding of gender issues and, with proper technical support, could ensure active participation by women in project management and decision-making.

It is suggested that, with the assistance of a WID specialist, the Project analyze the strengths and weakness in each country team (Project staff and counterparts), and design mechanisms to strengthen the WID focus.

In those countries where counterpart support for women's issues is non-existent, the Project may have to consider hiring a full-time assistant for this sub-system.

## 5.5. Social Focus of the Project

The Project is changing from a purely productive focus to one that centres on the family. Under this new approach, technologies are analyzed in relation to their socioeconomic impact. The family focus of the Project has increased the need to understand a series of social influences. Thus, social research, training, and integrative research validation are becoming important Project concerns.

### 5.5.1. Social Research

The presence of two social scientists at Headquarters has brought to light the need for systematic social research, including gender analysis. Originally, social research concentrated on family nutrition. Presently, the spectrum has expanded to include the overall social dynamics of participant families, which now include nutrition, living conditions, distribution of labour and resources, and gender analysis.

Human nutrition studies were an early Project concern. INCAP carried out a human nutrition study in Guatemala and expected, with some encouragement from the Project, to be responsible for the human nutrition studies in all four countries. INCAP sent a proposal to CATIE but up to now no response has been received.

This year, at the beginning of the rainy season, nutrition data from participant families was collected in the other three countries. A nutrition consultant designed the research instruments and will analyze the data in Costa Rica. For comparative purposes there will be two more surveys: at the end of the rainy season and during the dry season. Staff members and counterparts received some in-country training in anthropometric measurements. In Honduras, for example, the Project received assistance from the Ministry of Health personnel stationed in Choluteca.

The Project plans to carry out anthropological studies to learn about family life in each of the four countries. Early this year an anthropologist lived a few days with three participant families in Guatemala to learn about family living conditions. The study offers valuable information pertaining to family labour distribution, decision-making, nutrition, perception and management of natural resources, and other important topics of family life (Urueta, 1992).

Similar studies will also be done in the other three countries. While this Evaluation was taking place, a Dutch nutrition student was about to begin a similar study in Nicaragua and Honduras. Most probably, these studies will focus on nutrition patterns rather than distribution of labour, use of time and other variables addressed in the Guatemala study. For the El Salvador study another person will be hired, and that person's study will include both women- and men-headed households.

Gender analysis is another project research goal. During two recent workshops on

the role of women (Section 5.5.2), participants discussed and agreed on variables to use for gender analysis. The gender analysis research undertaking will draw upon other project research efforts such as the nutrition studies of each country, which already collected data on family composition and structure. Each country will design its own format to collect specific data pertaining to the use of time by women and women's access to resources. For comparison purposes this could be a limitation. It is essential that the WID specialist carefully review each format and develop clear instructions to ensure uniformity of data collection.

In the last few months the Project has advanced considerably in the area of social research. The body of knowledge regarding family living conditions and women's participation in decision making could be most valuable to make adjustments and analyze Project impact. This capacity to generate data must be accompanied by a feedback mechanism to permit revision of the project.

**Recommendation:** The Project should ensure uniformity of gender and other social variable data collection, and establish how this data will be used, both within the Project and as final project outputs.

As a starting point, consideration should be given as to how to communicate the information produced by the anthropological study in Guatemala.

#### 5.5.2. Training

The Project offers formal and hands-on field training for staff, counterparts and participant families. General aspects of training are discussed in Chapter 6 of this Report. This section addresses women's participation in technical training events and Project efforts to train staff and counterparts in social issues.

Training events are for the most part gender specific. Men participate in agriculture, cattle and agro-forestry training while women do so in food conservation, construction of wood saving stoves and management of small livestock. In spite of this separation, women of their own initiative participated in male-oriented events just as some men have gone to women-oriented training events. In Nicaragua, women indicated their interest to be informed about all the technologies being introduced because that way they could influence whether the husband accepts or rejects the technology.

It is suggested that the Project systematically invite both men and women to all training events, thus expanding on initiatives already being taken in some countries. In the beginning, special efforts may be necessary to foster intra-gender participation. However, existing project experience in this area and observations by the Evaluation Team suggest that broad-based participation is possible.

Although staff and counterpart training on social and gender issues started early on the Project, only recently has it gained importance. Of the 18 training events organized by Headquarters from the beginning of the Project until June of this year, only five (four of which were held in 1992) had a social focus (Table 5.1).

**TABLE 5.1. WORKSHOPS AND COURSES ON SOCIAL ISSUES, 1990 TO JUNE 1992**

Event	# of Participants			Date	Place
	Men	Women	Total		
1.	-	9	9	Dec. 2-9/90	Costa Rica
2.	22	9	31	Feb.3-7/92	Guatemala
2.	-	-	16	Apr.20-22/92	Honduras
3.	10	20	30	June 29-30/92	Nicaragua
4.	18	9	22	June 8-12-92	Honduras

- 1= The strengthening of the role of women in rural development
- 2= Interviewing techniques and participatory methodology
- 3= The role of women
- 4= Farm system focus

A second workshop on the role of women was held in Guatemala early in July/92. The Evaluation Team had the opportunity to observe this event. Approximately 30 staff and counterpart men and women from El Salvador and Guatemala participated in the workshop.

The two recent workshops on the role of women have been very well received, both by men and women participants. A participant in Guatemala stated that "this is the only project (referring to the ones in which she has worked) which considers the participation of women as necessary." Male participants were particularly pleased to have participated in the workshop. One of the extensionist explained that "before he did not pay attention to the women in the farm." In Nicaragua the number of applications from counterpart institutions to participate in the workshop was so high that more participants than planned were accepted.

To make up for loss time, workshops on the role of women often try to cover too much or are too inclusive of the various groups in the Project. For example, WID training, social research and social methodology were all treated in a two day workshop.

The purpose for including project farm family participants in the recently held workshops is not sufficiently clear. For example, 10 women project participants assisted the workshop in Guatemala during the second day, when variable for gender analysis and group dynamics techniques were discussed. It was never explained why these women were being exposed to this training or how they will use the information.

Inviting women participants to training events to discuss gender issues, such as in the recently held workshops, could contribute to improve their self-image and worth. However, it is important to define the purpose of their participation. The degree to which women project participants are exposed to conscious-raising events regarding their role in the productive system could influence the validation of technologies. These recent training events efforts are commendable.

**Recommendation:** The Project should continue offering training on gender issues to staff and counterpart members, both male and female, and systematize these through a formal training plan.

### 5.5.3. The Social Dimension of Research Validation

Research validation has technical and social dimensions which are not always sufficiently clear at each country level. Project Headquarters released a document treating this issue in July of this year but it has not yet been disseminated in the countries.

Although all project technologies are going through a validation process, staff and counterparts often cannot explain the level of validation each technology requires. There is confusion between the technical and the social aspects that are being validated. Not all technologies require both technical and social validation. For example, small livestock vaccinations have been validated technologically when the vaccinations were shown to be effective. It still requires social validation to determine the level of effort necessary for families to learn, apply, accept, and adopt the technology.

It is important to separate the two types of validation so that the data-gathering instruments, collection process, and analysis are carried out in an efficient and reliable manner. For example, each country is introducing some variety of wood saving stove but the selection and analytical criteria for introducing it are vague. In the implementation stages some stoves have undergone changes. However, the change can be due to technical or social reasons: to improve cooking efficiency or because of family preferences. Although not always sufficiently clear, the Project is validating both the technical and social dimensions of wood saving stoves. Technologically, the stoves have not been sufficiently tested to determine efficiency and durability, and socially, there is a need to validate the extension methodology used to introduce the technology and family preferences according to size and type.

Headquarters staff has recently documented the complexities of research validation (Radulovich et.al., 1992). This publication on integrative validation of technologies, known to the Evaluation Team at the end of field work, responds to many of the questions above. According to this document the family is the integrative axis and farm activities should be studied in relation to the physical, biological, economic and socio-cultural context. Under this social approach the Project should select, design, adapt and validate technological options jointly with the families.

The document acknowledges that studies of the rural family and the effects of the technologies on the family unit are components of the validation process. Through this it recognizes that research validation also includes the measurement of changes in the relationships of the rural family brought about by the introduction of new technologies. It is strongly suggested that a matrix classifying technologies in terms of technical and social validation be designed, in order to clarify where team effort and data is required to complete the validation process.

## CHAPTER 6. INSTITUTIONAL STRENGTHENING

While institutional strengthening was not a specified objective of the Project, it was mentioned as a by-product in several documents. This chapter will analyze aspects of institutional strengthening: organizational interaction, project training and information management and dissemination.

### 6.1. Organizational Interaction

A list of the agencies, organizations and projects that the Project cooperates with in each country is given in Appendix 6.1. Headquarters staff have established a study relationship with the University of Wageningen, Holland (Master's thesis). A plan to acquire data analysis and modelling assistance from the University of Guelph was part of initial project planning, but is still at the discussion stage.

At the country level, the Project has established contacts with a number of private/non-governmental organizations, but it is the Ministries of Agriculture in each country that act as the formal counterpart. The level of success of this relationship has been mentioned above as a strength of the Project. The Ministries have uniformly expressed interest in the Project and have seconded a number of extension staff to it. In Honduras a Project Monitoring Commission was recently created with Ministry officials. Despite this level of interest, a number of factors have reduced the effectiveness of this relationship:

- Due to the re-structuring and privatization policies of governments in the region, Ministries of Agriculture are facing budget and staff cut-backs which have impacted negatively at all levels, including agricultural extension support;
- Changes in management and field staff have resulted in the Project losing strong supporters and trained staff in several countries;
- Budget cuts have meant that staff seconded to the Project rarely have transportation budgets or adequate salaries, forcing the Project to supplement these areas with fuel allotments, per diems, etc.
- In the longer run, there is a serious question as to whether the Ministries will have the necessary resources to fully use project results or to incorporate the validation methodology into its research efforts.

**Recommendation:** Given the financial and structural problems facing many government agencies, the Project should expand its contacts with farmer and non-governmental organizations, as another option for ensuring sustainability of key Project activities and findings.

### 6.2. Project Training

Training has been one of the more obvious strengths of this Project, with a great deal of effort and resources assigned to it. It is one of the more important ways to ensure that Ministry staff understand project rationale and methodology, thus



increasing the chances of sustainability over time. Training activities from 1990/91 to 1992/93 are given in Appendix 6.2. This appendix show that in this three-year period the following training activities have taken place or are planned: 29 formal in-country courses; 18 courses managed directly by headquarters, and; 54 workshops or field training opportunities. Of these 101 training activities, 21 were topics relating to the Home Sub-system and three of these dealt with the role of women in the Project areas. Only three training sessions have focused on the methodology of research validation per se, all in 1992. Emphasis on project methodology and management training is recent. Although training in Production Systems took place as early as July 1990, the integration of technologies within subsystems has still to take place. Evaluation of training needs to be built into Project activities, a critical aspect when attempting to ensure uniformity of methodology and quality of fieldwork.

**Long-Term Training.** Advanced training was part of early project planning. The budget for this has been modified over time, but CDN\$28,000 is still in the budget for postgraduate training at CATIE and CDN\$25,000 for training in Canada. Study at CATIE presents two problems: Because this decision has been delayed so long, the person chosen will provide little if any assistance to the Project, and; the areas of expertise most needed by the Project (gender studies, systems analysis) are not available at CATIE.

**Recommendation:** The plan to grant a scholarship for postgraduate studies at CATIE no longer has great significance for the Project and should be reviewed.

Potential candidates for such studies might be helped by the Project to locate alternative funding. Planned training in Canada, probably in systems analysis at the University of Guelph, should be preceded by correspondence and careful planning to ensure that relevant training opportunities exist there.

**Training Impact on the Field Level.** The training sub-activity of the Project has had a noticeable impact in the field. Foremost it has been a valuable motivator. Staff at all levels have a high morale and considerable dedication to the project, which they attribute to the training opportunities provided. This may not be the main purpose of a training program, but the degree of success of the project has to a large extent been made possible through the high motivation of its staff.

Training has also had a considerable impact in bringing staff of the four countries in contact with the experts of CATIE, especially with the GIT members, who carried out a large number of training activities (Appendix 4.1). But equally important were the opportunities of project staff to interact with their counterparts in the other participating countries, and indications are that this type of contact is most useful.

Maybe the most interesting training topic was on the participation of women. The Project is not alone in finding the topic difficult, but has been able to make considerable progress. The many training activities, and the outside experts providing their knowledge, have been responsible for the considerable change in attitude by project staff. It was particularly impressive to note these changes in male staff members, and their new appreciation of the importance of involving women. And the results are starting to become evident in the field, where the traditional way of working only with the farmer is giving way to an approach fully

involving his wife as an integral part of the farming system.

On the technical level the training activities have made a particular impact on the understanding of environmental aspects, especially agro-forestry and soil conservation, areas normally neglected in an extension system. However it was also found that staff were in cases lacking the detailed knowledge to carry out the implementation of specific technologies at a high level of quality (as discussed in Chapter 4).

### **6.3. Information Management and Dissemination**

The collection, analysis and publication of data is an important dimension of the Project. One of the final products of the Project is planned to be a set of publications on validated technologies, presented in a form that can be used directly by the agricultural extension systems. The Government of Nicaragua has requested that preliminary Project results be made available to the agricultural extension service in the very near future.

A number of internal documents on project management and methodology have been prepared and some preliminary papers on technologies have already been written by headquarters and country staff. These will require revision as more results become available, but represent an important starting-point. A list of publications planned for 1992 is given in Appendix 6.3.

In the past, available information on new technologies has frequently not been sufficient for the extension system to convince farmers of their value. If the Project wants to make a distinctive and significant contribution in this area, it will be necessary to study the types of publications needed by government, non-governmental organizations and by farmers themselves.

## CHAPTER 7. RECOMMENDATIONS

The following recommendations have been developed in the text of the report and are drawn together here as a reference. The page number in the text where they were first discussed is given in brackets. The recommendations are listed according to the organization(s) to which they are addressed.

### A. Recommendations to CIDA

1. Approval should be given for the Project to continue through FY 1993/94, subject to availability of funds, but the Operations Plan for that year should clearly show how project activities will be phased out (p.7).

### B. Recommendations to CIDA and CATIE

2. Given the short period left for full-scale project activities (to end of 1993), it is recommended that a policy of continuity of Project leadership be pursued at all levels (p.11).

It is the Team's assessment that further change in project leadership at this time will interrupt urgent methodological and coordination activities and delay the Project by several months, compounding the delays the Project has already experienced. If the present system of tiered leadership is retained, clarification on roles and responsibilities is essential.

3. Important changes in project objectives should be made through a clear decision-making process at the appropriate level and recorded as amendments to the Inception Report (p.28).

4. Clarification is necessary regarding the responsibility and authority of the Project Steering Committee. Meeting dates, agendas and pre-meeting information should be organized so as to maximize meeting efficiency (p.13).

5. CIDA and CATIE should agree on project property disposition before the Project terminates (p.17).

### C. Recommendations to CIDA and Project Management

6. Project reporting should be simplified and strengthened by:

- Making the monthly country progress report an activity for internal control in each country, not required to be sent to headquarters;
- Reducing headquarters quarterly progress reporting to CIDA to 10 pages;
- Preparing an Annual Progress and Financial report containing both 4th Quarter and annual information, and relevant appendices now contained in quarterly reports;
- Providing reporting assistance to the Guatemala team as needed (p.15).

#### **D. Recommendations to CATIE**

7. It is recommended that CATIE analyze its limitations in handling the social dynamics, such as gender issues, when researching and validating technologies (p.44).

#### **E. Recommendations to Project Management**

8. The project focus requires sharpening. It is recommended that activities concentrate on a set of technology validations that permit the Project to attain its objectives, dropping some technologies and resisting the introduction of new ones. Present research activities should be phased out in 1992/93, transferring promising activities to CATIE or other research institutions (p.30).

9. An annual plan for project headquarters staff, in similar detail to that of country plans, is a necessary management tool and should be included in the 1993/94 Work Plan (p.14).

10. Training of project and counterpart staff on validation methodology must continue. At the same time there needs to be a system of supervision and quality control to ensure that the implementation of technologies follows this orientation (p.29).

11. In order to fully utilize validation results, it will be necessary to document the process of validation in each case, for use by both management and field staff, and then establish a clear monitoring system to ensure that implementation is of a high standard of quality (p.37).

12. It is recommended that the Project design mechanisms to discuss and apply findings and existing knowledge regarding women in the farming system among Project staff and counterparts (p.44).

13. The Project should ensure uniformity of gender and other social variable data collection, and establish how this data will be used, both within the Project and as final project outputs (p.50).

14. The Project should continue offering training on gender issues to staff and counterpart members, both male and female, and systematize these through a formal training plan (p.52).

15. Given the financial and structural problems facing many government agencies, the Project should expand its contacts with farmer and non-governmental organizations, as another option for ensuring sustainability of key Project activities and findings (p.53).

16. The plan to grant a scholarship for postgraduate studies at CATIE no longer has great significance for the Project and should be reviewed (p.54).

## CHAPTER 8. LESSONS LEARNED

The following lessons have become apparent in the planning and implementation of this project:

1. Critical assumptions that are not identified and analyzed when the project is planned can have a strong negative impact on project development.

In the present project, CATIE was assumed to have the capacity to provide early project management and technical orientation, but this proved not to be the case.

2. The Project Inception Report is the single most important document for project implementation. When this is poorly prepared, there is a good chance that project implementation will suffer.

It took this project nearly three years to establish clear administrative, management and methodological directions, none of which were not provided in the Inception Report.

3. The fact that CIDA mandates the executing agency to give careful attention to gender issues in project implementation does not ensure that this will take place.

Both CIDA and CATIE should have been more pro-active at the inception of the Project in assessing what this mandate meant and how it could be carried out. As a result, a great deal of early effort was put into activities which did not address the gender issue in a significant way.

4. Prioritization of activities is essential in all projects and especially in complex ones. The lack of clear priorities can lead to a proliferation of activities that diverts the project from its central task.

The present project has assumed too many activities, without establishing clear priorities, which will complicate the task of achieving the central objectives.

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CATIE/ACDI, Nicaragua, Plano Operativo Anual Nicaragua, 1992 - 1993, Proyecto  
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#### **L. Country Documents: Honduras**

CATIE/ACDI, Honduras, Informe del Sondeo Realizado en Choluteca, Proyecto Agro-  
silvopastoril CATIE/ACDI, Choluteca, 1991  
CATIE/ACDI, Honduras, Plano Operativo Anual Honduras, 1992 - 1993, Proyecto Agro-  
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CATIE/ACDI, Honduras, Principales Caracteristicas de los Productores Coejecutores  
y sus Familias, Proyecto Agrosilvopastoril CATIE/ACDI, Choluteca, 1992  
Republica de Honduras, Ley para la Modernizacion y el Desarrollo del Sector  
Agricola, La Gaceta No. 000919, Abril, Republica de Honduras, Tegucigalpa 1992

#### **M. Country Documents: El Salvador**

CATIE/ACDI, Convenio de Cooperacion Entro el Ministerio de Agricultura de El  
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CATIE/ACDI, El Salvador, Informe Preliminar del Diagnostico Rural Santa Ana, El  
Salvador, Proyecto Agrosilvopastoril CATIE/ACDI, San Salvador, 1991  
CATIE/ACDI, El Salvador, Plano Operativo Anual El Salvador, 1992 - 1993, Proyecto  
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**APPENDIX 1.1.**

**PROJECT LOGICAL FRAMEWORK ANALYSIS**

**LOGICAL FRAMEWORK ANALYSIS**

FIGURE 2

Program Title & Number CATIE - Tropical Agricultural Research and Development (540/14610)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS (OVI)	MEANS OF VERIFICATION (MOV)	IMPORTANT ASSUMPTIONS																
<p><b>Project Goal (Program Purpose):</b></p> <p>To improve production and income of small farmers in Central America.</p>	<p><b>Measures of Goal Achievements:</b></p> <ul style="list-style-type: none"> <li>New farming models developed.</li> <li>Integration of new and improved technologies by local institutions into transfer systems.</li> <li>New and improved farming systems in place.</li> </ul>	<p><b>Sources of Information and Methods Used:</b></p> <ul style="list-style-type: none"> <li>CATIE's project and annual reports.</li> <li>CIDA monitoring reports.</li> <li>CIDA end-of-project evaluations.</li> </ul>	<p><b>Assumptions for achieving Goal Targets:</b></p> <ul style="list-style-type: none"> <li>Participating member countries committed to supporting the project.</li> <li>CATIE's development strategy remains in the region.</li> <li>Basic political stability in the participating countries.</li> </ul>																
<p><b>Project Purpose:</b></p> <ul style="list-style-type: none"> <li>To design, validate and assist in the development and implementation of improved dual purpose cattle production systems within an agro-silvopastoral framework.</li> <li>To enhance soil conservation, forest regeneration.</li> <li>To enhance the use of criollo cattle in dual purpose production systems based on their performance evaluation.</li> <li>To enhance the transfer of appropriate technology through training and improved info. dissemination.</li> </ul>	<p><b>Conditions that will indicate purpose has been achieved: End of project status:</b></p> <ul style="list-style-type: none"> <li>Improved national agriculture and rural development programming in member countries.</li> <li>Enhanced soil conservation and increased milk and beef production.</li> </ul>	<p><b>CATIE's project annual reports and publications</b></p> <ul style="list-style-type: none"> <li>CIDA Interim and final evaluations.</li> <li>Technical monitoring and project reports - CIDA.</li> <li>National program extension bulletins.</li> </ul>	<p><b>Assumptions for achieving Purpose:</b></p> <ul style="list-style-type: none"> <li>CATIE's pilot site selection represents the predominant agro-social-economic problematique.</li> <li>CATIE's technology is relevant to the production systems of small farmers in the region.</li> <li>National programs commit extension resources to promote farming models.</li> </ul>																
<p><b>Outputs:</b></p> <ul style="list-style-type: none"> <li>Upgraded technology of milk and beef production within the small farmer's agro-silvopastoral system.</li> <li>Improved information dissemination systems.</li> <li>Improved resource management and environmental conservation.</li> <li>Enhanced research and extension capabilities of national institutions of CATIE's member countries through training.</li> </ul>	<p><b>Magnitude of Outputs: Approx. Comp. Dates:</b></p> <ul style="list-style-type: none"> <li>Milk and meat productivity increases.</li> <li>Area covered by improved conservation practices enlarged.</li> <li>Information dissemination systems in place.</li> <li>Productive performance of criollo crosses improved.</li> <li>Courses, seminars, workshops completed.</li> </ul>	<p><b>CATIE project annual reports.</b></p> <ul style="list-style-type: none"> <li>CIDA publications.</li> <li>CIDA Monitoring and Evaluation Reports.</li> <li>National program extension bulletins.</li> </ul>	<p><b>Assumptions for achieving Outputs:</b></p> <ul style="list-style-type: none"> <li>CATIE can identify appropriate project technological components which are supported by participating institutions on a continual basis.</li> <li>Participating national institutions commit sufficient resources to the project on a continuous basis.</li> <li>Minimum safety assurance is provided.</li> </ul>																
<p><b>Inputs:</b></p> <ul style="list-style-type: none"> <li>Operation of pilot sites.</li> <li>Training - workshops, seminars.</li> <li>Research support services.</li> <li>CATIE EA and HJ Support Services.</li> <li>Monitoring and evaluations.</li> </ul>	<p><b>Implementation Target (Type, Quantity, Cost, Timing):</b></p> <table border="1"> <tr> <td>\$'000 CAN</td> <td></td> </tr> <tr> <td>Operation of Pilot Sites</td> <td>874.0</td> </tr> <tr> <td>Training Support Services</td> <td>481.3</td> </tr> <tr> <td>CATIE EA and HJ Support Service</td> <td>481.3</td> </tr> <tr> <td>Monitoring and Evaluations</td> <td>200.0</td> </tr> <tr> <td>Contingencies</td> <td>100.6</td> </tr> <tr> <td>Inflation</td> <td>172.3</td> </tr> <tr> <td></td> <td><b>3,000.0</b></td> </tr> </table>	\$'000 CAN		Operation of Pilot Sites	874.0	Training Support Services	481.3	CATIE EA and HJ Support Service	481.3	Monitoring and Evaluations	200.0	Contingencies	100.6	Inflation	172.3		<b>3,000.0</b>	<p><b>Financial and project management reports - CATIE.</b></p> <ul style="list-style-type: none"> <li>CATIE project annual reports.</li> <li>CIDA Monitoring and Evaluation Reports.</li> </ul>	<p><b>Assumptions for providing Inputs:</b></p> <ul style="list-style-type: none"> <li>Adequate financial administrative systems agreed to.</li> <li>Canadian servicing is efficient, timely and appropriate.</li> </ul>
\$'000 CAN																			
Operation of Pilot Sites	874.0																		
Training Support Services	481.3																		
CATIE EA and HJ Support Service	481.3																		
Monitoring and Evaluations	200.0																		
Contingencies	100.6																		
Inflation	172.3																		
	<b>3,000.0</b>																		

**APPENDIX 2.1.**

**EVALUATION TERMS OF REFERENCE**

**CATIE SILVOPASTURAL PROJECT  
MIDTERM EVALUATION - TERMS OF REFERENCE**

**Background**

The Central American countries have large areas of dry tropics, where there are annual droughtlike conditions. The actual livestock production systems are inefficient, with consequent low economic returns and poor conservation of the environment. This affects, most of all the small and medium producers. With the continuing increase in population in these regions and in their requirements for daily living, it is necessary to find strategies to improve their systems of production.

Through various projects, CATIE has developed technological elements apt to be included in these production systems. Among others, some of these projects are:

Milk and meat production for small farmers using crop residues (IDRC financed);

Milk production systems for producers with limited resources (IADB financed);

Production systems for small farms (USAID financed);

Nitrogen fixing trees (IDRC financed);

Production of multiple use trees (USAID);

Management of tropical watersheds (USAID);

Pasture-tree systems for the wet tropics (IDRC).

In undertaking these projects, CATIE has started to understand the problems in the agricultural production systems of the region, including the environmental problems. They have developed alternative technologies for the improvement of these systems within the limits of the dry tropics ecological zone. In addition, CATIE has started to integrate the livestock, forestry and environmental sectors.

**Project**

In 1989, CATIE signed an agreement with CIDA to conduct activities to validate and adapt technology in pasture-tree production systems. CATIE agreed initially to implement these activities in three Central American countries, Guatemala, Honduras and El Salvador. Given the civil conditions in El Salvador at the time, it was decided to substitute Nicaragua for El Salvador as the third country. During the second meeting of the project Steering Committee, it was decided to include El Salvador as the fourth country in the project.

The global objective of this project is to improve the production systems and the income of the small livestock producers in Central America. Within this general framework, exist various specific objectives;

1. To design, validate and aid in the development and implementation of production systems for double purpose cattle, within the pasture-tree framework.
2. To aid in the area of soil conservation and to help recover forestry resources.
3. According to the evaluation of the potential usefulness of the Criollo cattle, help to promote their use within the double purpose systems.
4. Through training and improved extention systems, aid the process of the transfer of appropriate technologies to the small and medium livestock producers.

#### The Evaluation

The evaluation will examine the rational of the project, as well as the activities carried out during the three years of project implementation. The objective of the evaluation is to aid the project to be efficient and effective. The evaluation should supply lessons learned that will help to improve this and similar projects. The evaluators will also propose the outline of what should be any future stage of the project.

The evaluation will look at the following points:

1. The project rationale.
2. The implementation of the project, including:
  - A. The operation of the pilot areas in each country.
  - B. Training activities.
  - C. Activities in aid of research.
  - D. Services supplied by CATIE in aid of implementation and administration.
3. External policies in each of the countries with pilot areas, which influence the implementation and potentials for success of the project.

There will be three evaluators in the team, with the team leader being a Canadian. The team members will be experts in the areas of institutional management\finances\economics, social sciences \WID and in agroforestry\cattle production.

#### Scope of the Evaluation

Within each of the points of the evaluation identified in the preceding section, the areas to be examined are the following:

- Rationale:**
- a) Is the project focused on the small producers of the dry tropics who are in most need of help to improve their living standards.
  - b) Verify the existence of appropriate technology able to be transferred to the small cattle producers, as a result of previous projects in which CATIE had the lead role.
  - c) Verify if the general and specific objectives coincide with the policies of the national implementing agencies of the countries with pilot projects.
  - d) Determine if the project benefits rural women, first in the pilot zones and secondly in the productive systems.
  - e) Recommend, if necessary, any actions needed to improve the efficiency of the project.

- Pilot Areas:**
- a) Review the process of negotiating agreements with each country, determine if these negotiations were conducted efficiently and that they resulted in a solid basis on which to implement the project.
  - b) Review the process of identifying the pilot areas, determine if the project was adequately established in the area in terms of resource availability and personnel and according to the annual workplan. Verify if the technical staff from CATIE and the national institutions reflects the activities identified in the pilot areas.
  - c) Determine if the national institutions in each country had sufficient interest in the project to supply the necessary resources for correct project operation.
  - d) Identify other projects that exist in the area of the pilot projects and determine if there is any collaboration in activities between the projects and or influences on the activities of the project.
  - e) Review the process of conducting the baseline survey and any other types of surveys in each pilot area and determine if the communities or producers chosen were the most appropriate according to the local situation.

- f) Review the process of annual programming in each country, determine if this process and it's final product agree with the local situation and with the technology supposedly available to be validated.
- g) Review the work reports produced each semester and conduct field visits to verify the scope of the results obtained from the activities in each pilot area.

Training: a) Review the training activities in each country and in CATIE, determine if these activities are appropriate to reach the project objectives and that they fulfill the needs of the trainees.

#### Research Assistance

- a) Review the process of technical assistance between CATIE and the four countries involved in the project, determine if the activities of the GIT covers the technical needs of the programs in each of the countries.
- b) Determine if the technical composition of the GIT covers the same needs.
- c) Review the technologies in the process of validation as a result of the intervention of the GIT and the socioeconomic possibilities.
- d) Verify that the GIT is actively promoting interdisciplinary issues such as gender, environmental impact, systems analysis, methodological definition and others.
- e) Verify that the recommendations of the Steering Committee are incorporated into the activities of the project.

#### Administration and Implementation Services

- a) Verify the policy of CATIE towards integrated multidisciplinary projects and relate the mechanisms for guiding the project to it's implementation.
- b) Determine if the administrative and other services are efficiently and opportunly provided.
- c) Determine if the technical and financial reports required by CIDA are delivered on time



and with the necessary information.

### Country Policies

- a) Review the economic and agricultural policies of the participating countries and determine if these agree with the global objective of the project.
- b) Determine if external factors influence the ability of the project to reach the specific objectives of the project.

### METHODOLOGY

The team leader will review all pertinent documentation on the project in Hull and will prepare a workplan. This document will be adjusted somewhat after the team is together in Costa Rica. The workplan will cover the following general areas:

1. The objectives of the evaluation.
2. The itinerary and the work of each team member.
3. The appointments and materials required by the team during the evaluation.
4. Based on the project's global workplan and that of each participating country, list the indicators that the team will use to evaluate the project.
5. The methodology that the team will use for each principal component of the project.
6. The questionnaires and other forms that the team will use.
7. A draft list of the content of the evaluation report.

The evaluation team will debrief the PTL and CATIE at the end of the evaluation, giving the draft conclusions and recommendations.

Five copies of the draft report will be delivered to the PRO in Hull.

### TEAM COMPOSITION

The evaluation team will consist of three persons; the team leader\Institutional and Financial expert, an agricultural production specialist and a WID specialist.

### TERMS OF REFERENCE

#### TEAM LEADER\INSTITUTIONAL AND FINANCIAL SPECIALIST

In carrying out his duties and in preparation of the report for which the Team Leader is responsible, the consultant shall perform the following functions and such others as are considered necessary in the effective discharge of his duties:

1. Become familiar with the project by reviewing appropriate documentation concerning the project.
2. Hold discussions with the CIDA project team responsible for the project in order to be briefed on the project activity to date.
3. Prior to departure from Canada, prepare a work plan, to be finalized in Costa Rica with the full evaluation team, for discussion with and approval by CIDA, which approximately allocates assignments among the team members.
4. Hold discussions with the appropriate officials of CIDA in the embassy in Costa Rica in order to have an appreciation of the role of CATIE in Central America and the potential of the project.
5. Hold discussions with the appropriate CATIE personnel in Turrialba, Costa Rica on the role of CATIE in agricultural development in the Central American region, the role of the CIDA project in CATIE's outreach in the region, the role that CATIE plays in the administration and implementation of the project.
6. Review and assess the management and administration of the project by CATIE, with particular emphasis on the timeliness, efficiency and effectiveness of the delivery of funds, appropriate technical assistance and supervision to the four project areas.
7. Review and assess the working relationships of CATIE with the counterpart ministries in each of the four participating countries.
8. Review and assess the funding approval mechanisms, the financial and administrative reporting mechanisms as well as the work and budget planning processes of the project, both in the headquarters office and in the four field offices.
9. Review and assess the appropriateness of the implementation activities and processes to meet the project objectives. Make recommendations concerning any change in the nature and scope of the Canadian assistance.
10. Review and assess the project activities and performance, particularly with respect to the economic benefits gained by the project participants, both male and female.
11. Review and assess the project management structure and the staffing and functioning of this structure.

12. Review the critical assumptions of the project and their current validity.
13. Review and assess the level of project funds likely to be left at the end of the project. Make recommendations as to the best approach to follow to use up these funds.
14. Review and assess the working relationship of the executing agency (CATIE) and the project monitor (Dr Neil Thomas), the quality of the monitor's reports and the advice given to CIDA.
15. Consolidate the reports of the other consultants into the draft report for presentation to CIDA. Five copies of this report should be presented to the Principal Resource Officer in Hull (Dr David Johnston).
16. Ensure that the appropriate administrative requirements such as meetings and travel are undertaken to fully meet the needs of the team.

#### **WOMEN IN DEVELOPMENT**

Under the direction of the team leader, the consultant shall perform the following functions and such others as considered necessary in the effective discharge of her\his duties:

1. Become familiar with the project by reviewing appropriate documentation concerning the project in the Canadian embassy in San Jose.
2. Hold discussions with the Team Leader in order to be briefed on the project activities to date and assist the Team Leader with the preparation of the work plan for discussion with and approval by the CIDA official in charge of the project in the embassy in San Jose.
3. Review and assess the project management support for the concept of WID, with explicit reference to the WID objectives listed in the Management Plan.
4. Evaluate the pre-project role, functions and needs of women engaged in the agricultural production system in the project areas, including factors which facilitate and constrain women's productive participation in the production system.
5. Review and assess the impact of project activities on the role of women with particular reference to their potential for contributing to the major issues of the project such as increased productivity, other demands on their potential labour, in-puts into the production cycle, etc.

6. Assist the Team Leader in report preparation by making an assessment and recommendations pertaining to the general terms of reference of this evaluation.
7. Report appropriate findings to the Team Leader and the agriculture production specialist to help them in their review of economic return and of the production enhancement programs on the male and female participants in the project.
8. Assess the overall integration of women into the project (WID objectives in the Management Plan) and in identifying possible entry points for future components, to enhance the potential for women's productive capacity in the sector to lead to their full participation in and benefiting from the goals of the project.
9. Review and assess the mechanisms used to select the activities planned for women, do they respond to the felt needs of the women, do they permit the women to have a real say in the planning of the program, its delivery and evaluation.
10. Review and assess the degree to which women influence and or take the decision on the adoption and incorporation of new technologies or practices into the operation of the agricultural production systems. Have these new practices increased or decreased women's workload.
11. Assess whether the project activities have increased women's income and productivity and determine who received the profits.
12. Prepare a draft report and submit it to the Team Leader for incorporation into the overall draft report. The draft report of the WID specialist should be supplied to the Team leader in the form of a computer diskette in Word Perfect 4.2 format.

#### **AGRICULTURE PRODUCTION SPECIALIST**

Under the direction of the Team Leader, the consultant shall perform the following functions and such others as considered necessary in the effective discharge of his duties:

1. Become familiar with the project by reviewing appropriate documentation concerning the project.
2. Assist the Team Leader in preparing a work plan for discussion with and approval by CIDA.
3. Hold discussions with the CIDA project team and the staff in the embassy in San Jose, to be briefed on the project and its activities.

4. Hold discussions with the appropriate officials of CIDA in the embassy in Costa Rica in order to have an appreciation of the role of CATIE in Central America and the potential of the project.

5. Hold discussions with the appropriate CATIE personnel in Turrialba, Costa Rica on the role of CATIE in agricultural development in the Central American region, the role of the CIDA project in CATIE's outreach in the region, the role that CATIE plays in the project administration and implementation.

6. Review and assess the utility of the Interdisciplinary Work Group (GIT) as a source of technical advice and assistance to the project areas.

7. Review and assess the technical coordinator's position in the supply of technical assistance to the project areas. Is the assistance timely, effective and efficient. Do the field staff receive the type of assistance that they feel they need.

8. Review and assess the production enhancement program of the project with particular emphasis on :

- a) the methodology used and its appropriateness
- b) the appropriateness of the implementation activities in meeting the project objectives, are these activities sustainable after the end of the project.
- c) the potential of the program to increase the production and income of the participants, both male and female
- d) the process used for selecting the project activities
- e) the training of the participants in the improved agricultural practices and the amount of diffusion of these new practices to the surrounding producers.
- f) the agroforestry component of the project and its potential impact on the production of the participants as well as the natural resource base of the producers.

9. In cooperation with the WID specialist, review and assess those programs for women which are agricultural

10. Assist the Team Leader in determining the potential returns to the producers from the adoption of the new practices

11. Assist the Team Leader in report preparation by making an assessment and recommendations pertaining to the General Terms of Reference.

## **APPENDIX 2.2.**

### **DATA COLLECTION INSTRUMENTS**

#### **Interview Schedules**

- 2.2.A. CIDA Staff Interview Schedule
- 2.2.B. Project Field Staff Interview
- 2.2.C. Project Participant Interview
- 2.2.D. Guia de Entrevista: Trabajo con la Mulher
- 2.2.E. Guia de Entrevists: Coejecutores e  
Personal del Proyecto

#### **Information Request Forms**

- 2.2.F. Informacion de Funcionarios del Proyecto
- 2.2.G. Informacion de Instituciones Cooperantes
- 2.2.H. Informacion de Coejecutores

## **Appendix 2.2.A. CIDA Staff Interview Schedule**

1. Name and relationship to the Project.
2. Date assumed responsibilities for Project. Dates of visits to project sites. Ideal frequency of visits? Constraints?
3. Describe origin and purpose of the Project. Rationale for original design (and actual if different than originally planned).
4. Rationale for selecting CATIE as implementing agency.
5. Describe purpose of this evaluation? What are the key issues from CIDA's perspective?
6. Describe major strengths and weaknesses of the Project. What would CIDA like to see changed in how the project is managed? Implemented?
7. What are the major causes for the slow start of the project? Was the project planned to start slowly? What are the implications of the slow start for the future of the Project?
8. What other relevant project experience does CIDA have in the Agro-Silvopastoral area? Other non-CIDA experience in this field in Central America?
9. What is CIDA's position re. funding a second phase of the Project? If positive, what expectations does CIDA have of how the project might evolve over time.
10. Suggest names, in Canada and in Central America, of persons the Team should interview; of institutions/project sites the Team might visit.

## **Appendix 2.2.B. Project Field Staff Interview**

These Interviews are expected to take place with either a group of staff, or key individuals. There are three main groups to be considered in all five countries:

- CATIE Staff in Country
- Senior local Line Agency staff
- Extension Staff and Field Technicians

### **1. Background Information**

**Personal Information:** Background, Training and Experience  
Function in Project  
Overview of Involvement in Project

**Project Description:** Site Description and Selection  
Project Area Characteristics before

### **2. Technological Packages**

**Animal Production:** Animal Breeding Program  
Cattle Nutrition Improvement  
Livestock Health Care Program

**Pasture Production:** Grazing Control Initiatives  
Pasture Rehabilitation  
Soil Conservation

**Forestry:** Tree Planting Project  
Tree Nurseries  
Forest Resource Utilization  
Forest Protection

**Food Crops:** Types of Crops  
Cultivation Packages  
Crop Rotation

**Animal Feed Product.:** Crop Residue Utilization  
Fodder Trees  
Feed Conservation

**Other Activities:** Wood Stoves  
Child Nutrition  
Fruit Trees

### **3. Economics**

Additional Input Costs  
Supply and Demand for Produce  
Marketing Situation and Channels  
Return for Produce  
Improved Income Generation  
Improved Family Well-being



## **Appendix 2.2.B. Project Field Staff Interview (cont.)**

### **4. Extension**

**Extension Activities:** Visit Frequency  
Farmer Training Approach  
Incentives to Adoption

**Response Experiences:** Adoption Rate  
Dissemination Potential beyond Project  
Sustainability of Process

### **5. Research Activities**

Baseline Information  
System for Measuring Changes  
Areas of Lack of Information  
Specific Research Initiatives  
Validation Process for Technologies  
Impact Measurement

### **6. Training**

Staff Training Type, Length and Topics  
Usefulness of Training Activities  
Need Identification for Training  
Farmer Training Activities

### **7. Experiences**

Successes so far  
Problem Areas Encountered  
Solutions Envisaged  
Learning Process  
New Initiatives

## **Appendix 2.2.C. Project Participant Interview**

The approach envisaged here is a low profile visit with no pre-arranged meetings, but random interviews with participating farming families, farmers groups and local farmer organizations.

1. **Previous System**                      **Description of past Farming System**  
**Indication of Main Farming Problems**  
**Main Family Problems**  
**Areas where Improvements were needed**
  
2. **Work of Project**                      **Activities undertaken in:**
  - animal production
  - pasture, forestry and environment
  - crop production
  - other activities
  
3. **Experiences**                          **Usefulness of new Technologies:**
  - ease of use
  - additional input costs
  - perceived benefits
  - impact of new technology
  
4. **Relationships**                        **Attitudes of Extension Staff**  
**Usefulness of their Advice**  
**Inputs Received from Project**  
**Problems with Project**
  
5. **Outputs - Impact**                    **Results of new Technology**  
**Changes in Production**  
**Changes in Income**  
**Changes in Standard of Living**
  
6. **Training/Learning**                   **Courses and Field Days**  
**Understanding of Messages**  
**Application of Lessons**  
**Dissemination to Others**
  
7. **Future**                                **Continuing to use new Technology**  
**Limits to Wider Application**  
**Most needed Project Emphasis/Focus**  
**Future Needs**

## APPENDIX 2.2.D.

### GUIA DE ENTREVISTA: TRABAJO CON LE MULHER

1. Mandato del Proyecto para trabajar con la mujer?

Han habido cambios o ajustes en el mandato?

2. Participacion de la mujer en la produccion agricola antes del proyecto? en la producción Pecuaria? Que información tiene el Proyecto sobre esto? Datos secundarios? Primarios a través del Sondeo?

- Factores que facilitan su participación
- Factores que limitan su participación

3. Que mecanismos se utilizaron para seleccionar las actividades en las que participan las mujeres? Participación de las mujeres en la planificación, necesidades?

4. Se ha pensado en otras areas o formas en que la mujer puede participar en el Proyecto? Parte productiva y beneficios del Proyecto.

5. Tienes las mujeres alguna influencia sobre las nuevas tecnologias o practicas que se adoptan en la operación del sistema de producción agrícola?

6. Y en aquellas que son especificas para las mujeres..., como se toma la decisión de adoptarlas? Ella o el compañero?

7. En el tiempo que lleva el Proyecto, se sabe si estas tecnologias han tenido algún efecto en la carga de trabajo de la mujer? Las que implementan los hombres? y las que son especificas para la mujer?

8. Ha Habido algún cambio en:

- El ingreso de la familia? Quien lo maneja?
- El proceso de toma de decisiones dentro de la unidad familiar?
- La participacion de la mujer en las actividades productivas?
- El tipo de actividad productiva?

## APPENDIX 2.2.E.

### GUIA DE ENTREVISTA: COEJECUTORES E PERSONAL DEL PROYECTO

1. Selección de coejecutores según:
  - El personal del proyecto
  - los coejecutores
  - líderes comunales
  - otros agricultores de la comunidad
2. Conocimientos sobre el proyecto
  - Que van a hacer? para que? como se va a hacer?
3. Como se escogieron las tecnologías con las que va a trabajar cada coejecutor?
4. Cual es arreglo que tiene con el proyecto? le va a dar algo el proyecto? Que responsabilidades tiene Ud.?
5. Lo visita alguien del proyecto? Quien? Cada cuanto tiempo? para que lo visitan?
6. PARA EL PERSONAL DEL PROYECTO:
  - Que se entiende por validación
  - Distribución geografica de los coejecutores, tiempo para llegar?
7. Cuadro con la siguiente información:
  - nombre del coejecutor
  - comunidad
  - distancia a la oficina del proyecto
  - # cabezas de ganado
  - cantidad de tierra
  - tenencia

**APPENDIX 2.2.F. INFORMACION DE FUNCIONARIOS DEL PROYECTO**

<b>NOMBRE</b>	<b>FECHA DE CONTRATO A/M</b>	<b>RESPONSIBILIDAD NO PROYECTO (posicion)</b>	<b>EDUCACION FORMAL (area/grau)</b>	<b>EXPERIENCIA RELEVANTE (anos)</b>
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
6. _____	_____	_____	_____	_____



## **APPENDIX 2.2.H. INFORMACION DE COEJECUTORES**





**APPENDIX 2.3.**

**EVALUATION ITINERARY**

### APPENDIX 2.3. EVALUATION ITINERARY

Tues.	June 23	Travel Ottawa - Montreal - Miami - San José
Wed.	June 24	Meetings, Ms. J. Wayand, Can. Embassy San José Literature Review CCO, Can. Embassy San José
Thur.	June 25	Travel San José - Turrialba Meetings, Dr. Radulovich and Staff, CATIE Turrialba
Fri.	June 26	Meetings, CATIE Director and GIT Members, CATIE, Turrialba
Sat.	June 27	Meetings, Dr. Radulovich and Staff, CATIE Turrialba Travel Turrialba - San José
Sun.	June 28	Travel San José, Costa Rica - San Salvador, El Salvador
Mon.	June 29	Visit Project Headquarters, San Andres Discussions with Extension Staff and Farm Visits, Texistepeque
Tues.	June 30	Farm Visits, Candelaria de la Frontera Debriefing with Team and Road Travel Santa Ana, El Salvador - Jutiapa, Guatemala
Wed.	July 1	Introduction to Project, Jutiapa Guatemala
Thur.	July 2	Project Staff Interviews and Farm Visits
Fri.	July 3	Farm Visits and Debriefing with Project Team
Sat.	July 4	Travel Jutiapa - Guatemala City Team Meeting and Work Review, Guatemala City
Sun.	July 5	Air Travel Guatemala City - Tegucigalpa, Honduras
Mon.	July 6	Meeting Ministry of Agriculture Officials, Tegucigalpa Travel Tegucigalpa - Choluteca Briefing with Project Staff, Choluteca
Tues.	July 7	Farm Visits Choluteca Project Area
Wed.	July 8	Interviews with Project Staff and Debriefing Travel Choluteca, Honduras - Esteli, Nicaragua
Thur.	July 9	Meeting Regional Government Officials and Project Team Farm Visits in the Esteli Area
Fri.	July 10	Farm Visits in the Esteli Project Area/Debriefing
Sat.	July 11	Travel Esteli - Managua, Nicaragua Team Meeting and Work Revision, Managua, Nicaragua
Sun.	July 12	Travel Managua, Nicaragua - San José, Costa Rica
Mon.	July 13	Team Meeting, Debriefing Preparation and Meeting with Embassy Staff
Tues.	July 14	Meetings with CATIE Staff and Debriefing, Turrialba
Wed.	July 15	Travel San José - Miami - Montreal - Ottawa

**APPENDIX 2.4.**

**LIST OF PERSONS INTERVIEWED**

## APPENDIX 2.4. LIST OF PERSONS INTERVIEWED

Name		Position	Organization	Location
<b>A. Costa Rica</b>				
Aguilar	Lorena	WID Consultant	CATIE	Turrialba
Arce	José	Systems Modelling	CATIE/ACDI	Turrialba
Bazinet	Lucie	WID Specialist	CCO	San José
Bonnemann	Arnim	Project Leader	GTZ/CATIE	Turrialba
Celis	Rafael	Project Director	CATIE/ACDI	Turrialba
Karremans	Jan	Rural Sociologist	CATIE/ACDI	Turrialba
Kass*	Donald	Crops Specialist	CATIE	Turrialba
Madrigal	Miguel	Admin./Accountant	CATIE/ACDI	Turrialba
Moncada	Ruben	Director General	CATIE	Turrialba
Patterson	Isla	Financial Analyst	Can. Embassy	San José
Radulovich	Ricardo	Project Tech. Dir.	CATIE/ACDI	Turrialba
Reich*	Carlos	Rural Economist	CATIE	Turrialba
Saunders	Joe	Director Program II	CATIE	Turrialba
Simard	Hubert	First Secretary	Can. Embassy	San José
Tewelde*	A.	Animal Systems	CATIE	Turrialba
Wayand-Boehm	Julia	Project Officer	Can. Embassy	San José
<b>B. El Salvador</b>				
Alvarado	Mario	Sub-Director	CENTA	San Andres
Casalis	Rolando	Head, Techn. Unit	MAG	Sta. Ana
Chavarri	Victor	Extensionist	MAG	Texistepeque
Fuentes	Julio	Extensionist	MAG	Texistepeque
Medrano	Hector	Residente Tecnico	CATIE/ACDI	El Salvador
Mercado	Jorge	Tech. Assistant	CATIE/ACDI	El Salvador
Moreira	Reina	Sociologist	CATIE/ACDI	El Salvador
Rodriguez	Roberto	Director	CENTA	San Andres
Trigeros	Marta	Extensionist	MAG	Texistepeque
Trigeros	Orlando	Extensionist	MAG	Texistepeque
Velasco	Cecilia	Agric. Economist	CATIE/ACDI	San Andres
Participant	Farmers	(2 women, 6 men)	El Salvador	
<b>C. Guatemala</b>				
Cardona	Carlos	Extens. Supervisor	DIGESA	Jutiapa
Escobar	Alfonso	Coordinator	DIGESEPE	Jutiapa
Heer	Carlos	Residente Tecnico	CATIE/ACDI	Jutiapa
Lemus	Laura	Extens. Supervisor	DIGESA	Jutiapa
Paiz	Mario	Forestry Coord.	DIGEBOS	Jutiapa
Roca	Ruben	Data Specialist	CATIE/ACDI	Jutiapa

\* Denotes members of the GIT Team

**APPENDIX 2.4. LIST OF PERSONS INTERVIEWED (cont.)**

<b>Name</b>		<b>Position</b>	<b>Organ.</b>	<b>Location</b>
<b>Moncada</b>	<b>Orlando</b>	<b>Residente Tecnico</b>	<b>CATIE/ACDI</b>	<b>Esteli</b>
<b>Palacios</b>	<b>Maritza</b>	<b>Extensionist</b>	<b>MAG</b>	<b>Esteli</b>
<b>Payan</b>	<b>Rolando</b>	<b>Official Counterpart</b>	<b>MAG</b>	<b>Esteli</b>
<b>Reyes</b>	<b>Alejandro</b>	<b>Planning Counterpart</b>	<b>MED</b>	<b>Esteli</b>
<b>Rodriguez</b>	<b>Armando</b>	<b>Director Livestock</b>	<b>MAG</b>	<b>Esteli</b>
<b>Ruiz</b>	<b>Jasmina</b>	<b>Tech. Assistant</b>	<b>MAG/CATIE</b>	<b>Esteli</b>
<b>Valdivia</b>	<b>Hector</b>	<b>Tech. Assistant</b>	<b>CATIE/ACDI</b>	<b>Esteli</b>
<b>Participant</b>	<b>Farmers</b>	<b>(2 women, 7 men)</b>	<b>Nicaragua</b>	

**F. Canada**

<b>Johnston</b>	<b>David</b>	<b>Project Pro - Agr.</b>	<b>CIDA</b>	<b>Ottawa</b>
<b>Thomas</b>	<b>Neil</b>	<b>Project Monitor</b>		<b>Ottawa</b>

**APPENDIX 3.1.**

**LIST OF PROJECT STAFF AND CONSULTANCIES**

**3.1.A. List of Project Staff**

**3.1.B. List of Project Consultancies**

## APPENDIX 3.1.A. LIST OF PROJECT STAFF

NAME	DATE OF CONTRACT	RESPONSIBILITY IN THE PROJECT	FORMAL EDUCATION	RELEVANT EXPERIENCE
<b>Headquarters (Turrialba, Costa Rica)</b>				
R. Radulovich	08/91	Tech. Coordinator	Ph.D.	08 years
J. Karremans	09/91	Sociol./Cooperante	M.Sc.	07
V. Aguirre	09/91	Tech. Assistant	M.Sc.	20
M. Madrigal	10/89	Admin. Assistant	Bach. Admin.	08
L. Mena	04/90	Secretary	Tech. Secret.	04
<b>Guatemala Country Project Staff</b>				
C. Heer	06/92	Resident Director	M.Sc.	08
C. Velasquez	11/91	Tech. Assistant	Bach.	01
R. Roca	01/90	Tech. Assistant	Tecnico	09
E. Flores	07/90	Admin. Secretary	Bi. Sect.	06
R. Quinonez	03/92	Computer Input	Accounting	03
<b>Honduras Country Project Staff</b>				
R. Rodriguez	12/91	Resident Director	Ph.D.	12
M. Tejada	02/91	Tech. Assistant	M.Sc.	09
R. Nasser	01/92	Tech. Assistant	Bach.	07
I. Valladares	07/91	Admin. Secretary	Tec. Computer	05
<b>Nicaragua Country Project Staff</b>				
O. Moncada	01/91	Resident Director	M.Sc.	14
H. Valdivia	04/91	Tech. Assistant	Bach.	16
J. Ruiz	05/92	Tech. Assistant	Bach.	06
L. Torres	04/91	Admin. Secretary	Bach.	05
<b>El Salvador Country Project Staff</b>				
H. Medrano	12/91	Resident Director	Ph.D.	16
J. Mercado	01/92	Tech. Assistant	M.Sc.	15
C. Velasco <sup>1</sup>	01/92	Tech. Assistant	M.Sc.	08
R. Moreira	06/92	Tech. Assistant	Bach.	15
P. Hasbun	01/92	Admin. Secretary	Exec. Sec.	05

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<sup>1</sup> . Seconded to headquarters to assist in gathering and analysis of economic data .

## APPENDIX 3.1.B. LIST OF PROJECT CONSULTANTS

### CONSULTANTS 1992-93

#### 1. SYSTEMS ANALYSIS (COMPUTER)

CONSULTANT: Reinaldo Pineda  
DATES: Jan. 13 to Feb. 26, 1992 (45 days)  
May 7 to June 20, 1992 (45 days)  
Jul. 13 to Aug. 12, 1992 (30 days)

#### 2. ANTHROPOLOGY

CONSULTANT: Gloria Urueta  
DATES: Jan. 6 to Feb. 19, 1992 (45 days)

#### 3. SOCIAL AND GENDER ISSUES

CONSULTANT: Lorena Aguilar  
DATES: April 20 to Oct. 19, 1992 (6 months)

#### 4. HUMAN NUTRITION

CONSULTANT: Emilce Ulate  
DATES: April-May, 1992 (21 days)  
June-August, 1992 (30 days)

#### Projected 1992/93:

Social and Gender issues:	5 months
Human Nutrition:	30 days
Agricultural Economics:	8 months <sup>1</sup>
Systems Analysis (Computer):	60 days
Systems Analysis (Agricultural):	6 months

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<sup>1</sup> Arrangement with El Salvador



**APPENDIX 3.2.**

**LIST OF HEADQUARTERS STAFF ACTIVITIES, 1992/93**

Listado de Actividades Año 1992-93

I. Actividades principales:

1. Coordinar y orientar, y dar seguimiento y asistencia técnica y administrativa a los equipos en los cuatro países. En particular:

- Coordinación entre los cuatro países
- Preparación y ejecución de los planes operativos
- Apoyo específico a actividades de validación de tecnologías, investigación adaptativa y estudios especiales
- Manejo financiero-presupuestario.
- Preparación de documentos de difusión de resultados.

Esta actividad, que es la prioritaria, se desarrolla durante todo el año, e incluye viajes a los cuatro países.

2. Preparar propuesta de renovación del Proyecto para su segunda fase, en consulta con equipos técnicos y personeros/autoridades de instituciones nacionales, regionales y ONGs.

Cronograma: pre-propuesta para reunión del Comité Directivo a finales de agosto; someter borrador a consulta noviembre; presentar a ACDI en marzo 1993.

II. Proyectos específicos manejados con fuerte injerencia del equipo en el Centro:

- Estudio nutricional/alimentario en los cuatro países. En Guatemala con colaboración del INCAP.
- Estudios de casos, por medio de observación participante (convivencia) en los cuatro países. En Honduras y Nicaragua con colaboración de Univ. de Wageningen.
- Estudios de caracterización de los sistemas de producción de coejecutores y regional; incluyendo aspectos climáticos y edáficos.
- Caracterización regional por sistema de información geográfica.
- Estudio sobre componente ganadero, enfatizando El Salvador y Honduras, por medio de dos tesis de CATIE y colaboración con la Universidad de Guelph.
- Estudio sobre mercadeo, con colaboración Univ. de Guelph.
- Análisis económico de los diversos aspectos del Proyecto, con el equipo técnico en El Salvador.
- Análisis integral de características de los productores y

- Informe para memorias X Reunión General de RISPAL. (en prensa).
- El papel de la mujer en investigación y desarrollo. L. Aguilar. Manuscrito para cursos (en preparación).
  - Huertas familiares para zonas con sequía estacional. Varios autores de los países y Centro. Folleto para extensionistas.
  - Técnicas de la entrevista y métodos participativos de investigación. J. Karremans. Manuscrito para cursos (en preparación).
  - Estado nutricional y prácticas alimentarias de familias rurales del trópico semi seco de Centro América. E. Ulate y otros. Varias publicaciones-en estado de análisis de datos.
  - Resultados de las consultas de caracterización en Guatemala, Honduras, Nicaragua y El Salvador. Autores equipos técnicos en los países-edición en el Centro (en preparación).

#### V. Presentaciones:

- Simposio Latinoamericano sobre Investigación y Extensión en Sistemas Agropecuarios. Ecuador, marzo 93. Dos ponencias.
- V Congreso Internacional e Interdisciplinario de la Mujer. Costa Rica, febrero 93. Una o dos ponencias.
- Otras presentaciones (por ej., ante Grupo Directivo del CATIE, Universidad de Guelph, Universidad de Wageningen...).

#### VI. Reuniones, nexos, otros:

- Tercera reunión del Comité Directivo, agosto 92.
- Reuniones de coordinación técnica:
  - Agosto 92, establecer programación 92-94.
  - Marzo 93, planes operativos 93-94.
- Nexos con Univ. de Guelph (mayo) y Univ. de Wageningen (setiembre). Nexos con INCAP.
- Evaluación externa (junio-julio, 92), auditoría (julio 92).

**APPENDIX 3.3.**

**HEADQUARTERS STAFF VISITS TO PROJECT COUNTRIES**

**VISITAS DEL PERSONAL TECNICO Y ADMINISTRATIVO DEL  
PROYECTO EN CATIE A LOS PAISES**

**PERIODO 1990-91, 1991-92 (hasta junio de 1992)**

FECHAS	ACTIVIDAD	PARTICIPANTES
<b>GUATEMALA</b>		
<b>1991</b>		
20-22 feb.	Presentación y discusión de Plan Operativo Anual 1991-1992.	VAguirre y miembros del GIT (4).
28-29 jun.	Supervisión de trabajos de campo y coordinación administrativa.	VAguirre y MMadri-gal.
16-19 set.	Coordinación y supervisión técnica y administrativa.	RRadulovich, VAguirre y MMadri-gal.
23-30 set.	Visita y reconocimiento del área del Proyecto.	JKarremans.
23-25 oct.	Supervisión y monitoreo del Proyecto.	RRadulovich (con NThomas y JWayand)
09-12 dic.	Reunión con personal de las Instituciones: CYMMIT e INCAP.	RRadulovich.
<b>1992</b>		
03-07 feb.	Impartir curso : Técnicas de la entrevista y métodos participativos.	JKarremans.
17-19 feb.	Monitoreo del Proyecto.	RRadulovich (con NThomas).
02-03 abr.	Taller sobre validación y presentación de resultados del POA 1991-92 y presentación del POA 1992-93. 1992-93.	RRadulovich.
07-09 abr.	Revisión de cuentas y traspaso de Fondo operativo al Residente en Guatemala.	MMadrigal.

## 1992

04 febrero	Visita para evaluar avances del Proyecto.	RRadulovich(con DJohnston).
02-03 abr.	Taller sobre validación y presentación de resultados de POA 1991-92 y presentación de POA 1992-93.	JKarremans.
20-22 abr.	Impartir curso : Técnicas de la entrevista y métodos participativos.	JKarremans.
03-05 may.	Determinar trabajos en el subsistema hogar y realizar sondeo sobre asuntos de género.	LAGuilar.
29 mayo	Revisión de presupuestos de POA 1992-93, apoyo en preparación y confección de CCB's. Apoyo en aspectos administrativos.	MMadrigal.
08-09 jun.	Revisión final de POA 1992-93 e inicio de actividades de campo.	RRadulovich.
08-12 jun.	Coordinación técnica y participar el curso : Enfoque de sistemas.	VAguirre.

## NICARAGUA

### 1991

11-19 abr.	Consulta de caracterización (sondeo).	VAguirre y miembros del GIT (6).
24-25 abr.	Supervisión trabajos de campo y coordinación administrativa.	VAguirre y MMadrigal.
01-02 oct.	Revisión de avances técnicos y administrativos.	VAguirre y MMadrigal.
20-22 oct.	Monitoreo del Proyecto.	RRadulovich (con NThomas).

### 1992

06-07 feb.	Visita para evaluar avances del Proyecto.	RRadulovich (con DJohnston).
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29 abril 03 mayo	Determinar trabajos en el subsistema hogar y realizar sondeo sobre asuntos de género.	LAguilar.
30 mayo y 02 junio	Revisión presupuestos del POA 1992-93, apoyo en preparación y confección de CCB's. Apoyo en aspectos administrativos.	MMadrigal.
02-03 jun.	Revisión final de POA 1992-93 e inicio de actividades de campo.	RRadulovich.

**APPENDIX 3.4.**

**PROJECT FINANCES**

- 3.4.A. Estimated Project Budget (MOU Amend. No. 1)**
- 3.4.B. Project Disbursements by Country, 1989-1992**
- 3.4.C. Financial Claims and CIDA Cash Advances**



## Appendix 3.4.A. Estimated Project Budget (MOU Amendment No. 1)

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**AMENDMENT NO: 1**  
Country Focus Contribution Agreement

- Missions -

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**Attachment "C"**  
Estimated Project Budget

The Contribution and all other contributions hereinafter set forth shall be used exclusively for the Project and the Estimated Budget, and shall be disbursed in accordance with the Estimated Disbursement Schedule hereinafter referred to:

BUDGET ELEMENTS	DIVIDED BY CANADIAN FISCAL YEAR (APRIL TO MARCH) CANADIAN \$				
	28/04/89 TO 31/03/91	1991/92	1992/93	1993	TOTAL
<b>1.0 Field Operations</b>					
Guatemala	57,415	82,000	86,200	53,001	278,616
Honduras	44	57,000	60,600	37,900	155,544
Nicaragua	-	58,500	59,000	36,500	154,000
El Salvador	-	41,000	73,000	45,000	159,000
Vehicles & Maint.	123,220	142,700	26,400	9,000	301,320
Office operating costs	13,159	44,000	14,000	5,000	76,159
On-the-job-training	-	30,000	15,000	6,000	51,000
<b>2.0 Training (Seminars/Workshops)</b>					
Training in Costa Rica	-	10,000	10,000	5,000	25,000
Training out. of Costa Rica	20,318	64,000	45,000	10,000	139,318
Didactic Material	6,968	20,000	16,000	5,000	47,968
Training in Canada	-	12,500	12,500	-	25,000
Post-Graduate Study in CATIE	-	6,000	12,000	10,000	28,000
<b>3.0 Research Support Activities</b>					
Operating costs & serv.	11,994	61,000	60,000	23,000	190,194
Tools & Equip.	194	16,500	18,800	6,000	41,494
Consultant	-	46,500	41,000	20,000	107,500
Laboratory costs	-	16,500	18,800	6,400	41,700
Centralized Operations	-	160,500	162,800	6,400	295,500

AMENDMENT NO: 1  
Country Focus Contribution Agreement

- Missions -

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4.0 Services from the Organization in Costa Rica

Coordinator admin.	18,411	-	-	-	18,411
Tech. Ass.	667	-	-	-	667
Secretarial Serv.	9,976	-	-	-	9,976
Computer & Software	6,352	-	-	-	6,352
Programming & Design	-59,150	-	-	-	59,150
Vehicle	15,303	-	-	-	15,303
Operating cost vehicle	1,078	-	-	-	1,078
Regional Travels	44,768	-	-	-	44,768
Telecommunications	1,629	-	-	-	1,629
Office supplies	2,295	-	-	-	2,295
Fixed Management Fee	-	169,840	169,840	127,378	467,058
International travels	-	10,000	14,000	7,000	31,000
Can. Tech. Experts	-	12,500	12,500	-	<u>25,000</u>

TOTAL CIDA CONTRIBUTION

\$2,800,000

## Appendix 3.4.B. Project Disbursements by Country, 1989-1992

**PROYECTO:** CATIE - SISTEMAS AGROSILVOPASTORILES  
 SOSTENIBLES PARA PEQUEÑOS PRODUCTORES  
 DEL TROPICO SECO DE CENTRO AMERICA

**DRO:** EJECUCION PRESUPUESTO POR AÑO. POR PAIS.

EN CAD\$

COSTOS DE OPERACION	AGOSTO 1989 A	GUATEMALA	HONDURAS	NICARAGUA	SEDE
	MARZO 1990				
<b>9) OPERACION EN PAISES</b>					
Coordinadores, Asistent. de campo y secret:					
- Guatemala	11381.19	11381.19	0.00	0.00	0.00
- Honduras	0.00	0.00	0.00	0.00	0.00
- Nicaragua	0.00	0.00	0.00	0.00	0.00
- El Salvador	0.00	0.00	0.00	0.00	0.00
Vehículos - Adquisición y mantenim.	109428.89	37428.89	36000.00	36000.00	0.00
Otros gastos de oficina local	0.00	0.00	0.00	0.00	0.00
Entrenamiento de campo	0.00	0.00	0.00	0.00	0.00
<b>Total Parcial.....</b>	<b>120810.08</b>	<b>48810.08</b>	<b>36000.00</b>	<b>36000.00</b>	<b>0.00</b>
<b>0) CAPACITACION (TALLERES Y SEMINARIOS)</b>					
Entrenamiento en Costa Rica	0.00	0.00	0.00	0.00	0.00
Entrenamiento fuera de Costa Rica	1964.23	1964.23	0.00	0.00	0.00
Material didáctico	4028.43	4028.43	0.00	0.00	0.00
Entrenamiento en Canadá	0.00	0.00	0.00	0.00	0.00
Estudios de posgrado en CATIE	0.00	0.00	0.00	0.00	0.00
<b>Total Parcial.....</b>	<b>5992.66</b>	<b>5992.66</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>0) SERVICIO DE APOYO A INVESTIGACION</b>					
Costos de operación y servicio	0.00	0.00	0.00	0.00	0.00
Herramientas y equipos menores	0.00	0.00	0.00	0.00	0.00
Consultores	0.00	0.00	0.00	0.00	0.00
Gastos de laboratorios	0.00	0.00	0.00	0.00	0.00
Operaciones Centralizadas	0.00	0.00	0.00	0.00	0.00
<b>Total Parcial.....</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>1.0 SERVICIOS - CATIE</b>					
Gastos de Administración	87768.31 *	0.00	0.00	0.00	37768.31 *
Expertos Técnicos de Canadá	0.00	0.00	0.00	0.00	0.00
Viajes Internacionales	0.00	0.00	0.00	0.00	0.00
<b>Total Parcial.....</b>	<b>87768.31</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>87768.31</b>
<b>TOTAL.....</b>	<b>214571.05</b>	<b>54802.74</b>	<b>36000.00</b>	<b>36000.00</b>	<b>87768.31</b>

\* Incluye CAD\$ 60 000,00. aprobados para el Sistema Integrado de Información Financiera (SIIF) aprobados por ACDI

**TICTO: CATIE - SISTEMAS AGROSILVOPASTORILES**  
**SOSTENIBLES PARA PEQUEÑOS PRODUCTORES**  
**DEL TROPICO SECO DE CENTRO AMERICA**

**MO: EJECUCION PRESUPUESTO POR AÑO, POR PAIS.**

**EN CASH**

COSTOS DE OPERACION	ABRIL 1991	GUATEMALA	HONDURAS	NICARAGUA	EL SALVADOR	SEDE
	A MARZO 1992					
<b>OPERACION EN PAISES</b>						
Coordinadores, Asistent. de campo y secret:						
- Guatemala	66587.83	66587.83	0.00	0.00	0.00	0.00
- Honduras	51299.77	0.00	51299.77	0.00	0.00	0.00
- Nicaragua	40929.25	0.00	0.00	40929.25	0.00	0.00
- El Salvador	13464.33	0.00	0.00	0.00	13464.33	0.00
Vehiculos - Adquisición y mantenim.	141863.68	28772.72	28348.24	29482.72	55260.00	0.00
Otros gastos de oficina local	45274.79	10188.28	15724.96	11020.00	8341.55	0.00
Entrenamiento de campo	31891.76	13391.76	8000.00	10500.00	0.00	0.00
<b>Total Parcial.....</b>	<b>391311.41</b>	<b>118940.59</b>	<b>103372.97</b>	<b>91931.97</b>	<b>77065.88</b>	<b>0.00</b>
<b>CAPACITACION (TALLERES Y SEMINARIOS)</b>						
Entrenamiento en Costa Rica	10410.40	0.00	0.00	0.00	0.00	0.00
Entrenamiento fuera de Costa Rica	61322.07	0.00	0.00	0.00	0.00	0.00
Material didáctico	20298.34	0.00	0.00	0.00	0.00	0.00
Entrenamiento en Canadá	0.00	0.00	0.00	0.00	0.00	0.00
Estudios de posgrado en CATIE	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Parcial.....</b>	<b>92030.81</b>	<b>41530.81</b>	<b>24000.00</b>	<b>22500.00</b>	<b>4000.00</b>	<b>0.00</b>
<b>SERVICIO DE APOYO A INVESTIGACION</b>						
Costos de operación y servicio	106056.00	0.00	0.00	0.00	0.00	0.00
Herramientas y equipos menores	16144.99	0.00	0.00	0.00	0.00	0.00
Consultores	22307.29	0.00	0.00	0.00	0.00	0.00
Gastos de laboratorios	14248.22	0.00	0.00	0.00	0.00	0.00
Operaciones Centralizadas	17453.02	0.00	0.00	0.00	0.00	17453.02
<b>Total Parcial.....</b>	<b>176209.52</b>	<b>64956.50</b>	<b>33000.00</b>	<b>50000.00</b>	<b>10800.00</b>	<b>17453.02</b>
<b>SERVICIOS - CATIE</b>						
Gastos de Administración	169836.00	0.00	0.00	0.00	0.00	169836.00
Expertos Técnicos de Canadá	0.00	0.00	0.00	0.00	0.00	0.00
Viajes Internacionales	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Parcial.....</b>	<b>169836.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>169836.00</b>
<b>TOTAL.....</b>	<b>829387.74</b>	<b>225427.90</b>	<b>160372.97</b>	<b>164431.97</b>	<b>91865.88</b>	<b>187289.02</b>

DE ESTE MONTO, CASH\$11 600,00 CORRESPONDEN A GASTOS DEL AÑO ANTERIOR, YA QUE CONTABLEMENTE SE INCLUYERON HASTA EL EL PRESENTE AÑO.

**APPENDIX 3.5.**

**PROJECT PROPERTY INVENTORY**

## INVENTARIO DE ACTIVOS

### RECURSOS FISICOS

#### Vehículos

##### En Turrialba

1: Nissan Terrano

##### En los Paises

Total 12: 3 en Guatemala (Toyota: 1 Jeep y 1 Pick-up Land Cruiser, 1 Pick up Hi Lux).  
3 en Honduras (Toyota: 1 Jeep y 1 Pick-up Land Cruiser, 1 Pick up Isuzu).  
3 en Nicaragua (Toyota: 1 Jeep y 1 Pick-up Land Cruiser, 1 Pick up Hi Lux)  
3 en El Salvador (1 Jeep Toyota y 2 Pick-up Isuzu).

#### Equipo de cómputo

##### En Turrialba

#### MICROCOMPUTADORAS

- 02 Marca Hyundai  
Modelo: Super 16 v.  
Tipo Monitor: Monocromático (verde)  
Capacidad Memoria: Disco Duro 30 MB  
RAM 640 KB
- 02 Marca Hyundai  
Modelo: Super - 286 E PLUS  
Tipo Monitor: Monocromático (ámbar)  
Capacidad Memoria: Disco Duro 40 MB  
RAM 640 KB
- 01 Marca DTK  
Modelo: TECH - 1663 (286)  
Tipo Monitor: VGA  
Coprocesador matemático:  
Capacidad Memoria: Disco Duro 100 MB  
RAM 3 MB
- 01 Marca DTK  
Modelo: TECH 1663 (286)  
Tipo Monitor: Monocromático (ámbar)  
Capacidad Memoria: Disco Duro 40 MB  
RAM 1 MB

## **IMPRESORAS**

### **En Turrialba:**

- 03    **Marca:**        Epson  
      **Modelo:**    LX-810, 80 columnas
  
- 01    **Marca** Epson  
      **Modelo:**    FX-1050, 100 columnas
  
- 01    **Marca** Epson  
      **Modelo:**    Action Printer 5000, 80 columnas
  
- 01    **Marca** Hewlett Pakard\*  
      **Modelo:**    DeskJet Plus

### **En los paises:**

#### **A.    NICARAGUA**

- 01    **Marca** Epson  
      **Modelo:**    FX-1050

#### **B.    GUATEMALA**

- 01    **Marca** PANASONIC  
      **Modelo:**    KX-P 1180

#### **C.    HONDURAS**

- 01    **Marca** Epson  
      **Modelo:**    FX-1050

#### **D.    EL SALVADOR**

- 01    **Marca** Epson  
      **Modelo :**    FX-1050

**APPENDIX 4.1.**

**ACTIVITIES OF GIT MEMBERS TO JUNE 1992**



**PROYECTO  
CATIE/ACDI**

**MIEMBROS DEL GRUPO INTERDISCIPLINARIO  
DE TRABAJO (GIT)**

(hasta junio de 1992)

<b>SUBSISTEMAS</b>		<b>NOMBRES</b>	<b>ESPECIALIZACION</b>
Cultivos	Ph.D.	PShanon	Entomología
	Ph.D.	DKass	Cultivos anuales
Ganadería	Ph.D.	DPEzo	Agrostología
	Ph.D.	GMorales	Medicina veterinaria
	Ph.D.	FRomero	Utilización de forrajes
	Ph.D.	ATewelde	Genética animal
Agro-forestal	Ing.	ESomarriba M.Sc.	Agroforestería
	Ph.D.	CSabogal	Silvicultura
	Ing.	WCampos M.Sc.	Agroforestería
	Ph.D.	LSzoot	Agroforestería
Socioeconomía	Ing.	CREiche M.Sc.	Economía agrícola
	Ph.D.	FHolmann	Economía agrícola
	Ph.D.	FFerrán	Sociólogo rural
Suelo/Agua	Ing.	JFaustino M.Sc.	Conservación de suelos y agua
	* Ing.	RDías M.Sc.	Suelos
	Ph.D.	PSharma	Uso de la tierra

**PARTICIPACION DEL GIT EN ACTIVIDADES DEL PROYECTO ACDI**

**EN LOS CUATRO PAISES**

1990

<b>FUNCIONARIO</b>	<b>PARTICIPACION</b>	<b>PAIS</b>	<b>FECHAS</b>
Francisco Romero	Participar en Sondeo	Guatemala	24 Enero 03 Feb.
Danilo Pezo	Participar en Sondeo	Guatemala	24 Enero 03 Feb.
Fred Van Sluys	Participar en Sondeo	Guatemala	24 Enero 03 Feb.
Eduardo Somarriba	Participar en Sondeo	Guatemala	24 Enero 03 Feb.
Romeo Solano	Formar Convenio CATIE/ ACDI en Nicaragua	Nicaragua	15-18 Mar.
Eduardo Casas	Establecer contratos con gobiernos en que operará el Proyecto ACDI.	Guatemala	07-10 Mar.
Fernando Mujica	Participar en negocia- ción de convenio.	Honduras	26-27 Mar.
Fernando Mujica	Participar en activi- dades del Proyecto ACDI y realizar con- tactos.	Honduras - Nicaragua	26-29 Mar.
Fernando Mujica	Participar en activi- dades del Proy. ACDI.	Guatemala	03-06 Abr.
Fred Van Sluys	Continuar actividades del Proyecto ACDI.	Guatemala	03-06 Abr.
Romeo Solano	Apoyar al Proyecto CATIE/ACDI en el dise- ño de alternativas.	Guatemala	17-21 Abr.
Fred Van Sluys	Apoyar actividades del Proyecto ACDI-	Guatemala	25-28 Abr.
Fernando Mujica	Continuar actividades del Proyecto ACDI.	Guatemala	25-28 Abr.
Romeo Solano	Diseño alternativas mejoradas con Técnicos del Equipo ACDI.	Guatemala	25-28 Abr.
Fred Van Sluys	Asesorar actividades del Proyecto ACDI.	Guatemala	07-12 Mayo

**PARTICIPACION DEL GIT EN ACTIVIDADES DEL PROYECTO ACDI**

**EN LOS CUATRO PAISES**

1991

<b>FUNCIONARIO</b>	<b>PARTICIPACION</b>	<b>PAIS</b>	<b>FECHAS</b>
Danilo Pezo	Particip. Plan Oper.	Guatemala	19-23 Feb.
Gustavo Morales	Particip. Plan Oper.	Guatemala	19-23 Feb.
Wilbert Campos	Particip. Plan Oper.	Guatemala	19-23 Feb.
Assefaw Tewolde	Particip. Plan Oper.	Guatemala	20-24 Feb.
Eduardo Somarriba	Participar en Sondeo	Honduras	25 Feb. 04 Mar.
Gustavo Morales	Participar en Sondeo	Honduras	25 Feb. 04 Mar.
Sergio Castillo	Participar en Sondeo	Honduras	25 Feb. 04 Mar.
Assefaw Tewolde	Participar en Sondeo	Nicaragua	10-15 Abr.
Eduardo Somarriba	Participar en Sondeo	Nicaragua	10-15 Abr.
Wilbert Campos	Participar en Sondeo	Nicaragua	10-15 Abr.
Donald Kass	Participar en Sondeo	Nicaragua	10-15 Abr.
Danilo Pezo	Participar en Sondeo	Nicaragua	10-15 Abr.
Gustavo Morales	Participar en Sondeo	Nicaragua	10-15 Abr.
Francisco Romero	Participar en Sondeo	Nicaragua	10-15 Abr.
Donald Kass	Asesoría Sistemas Ejecutores y Ensayo Conservación de suelos.	Guatemala	16-19 Jun.
José Arze	Curso Enfoque Sistemas	Guatemala	08-12 Jul.
Gustavo Morales	Curso Sanidad Animal	Guatemala	29 Set. 04 Oct.
Gustavo Morales	Participar en Sondeo	El Salvador	18-24 Nov.
Assefaw Tewolde	Participar en Sondeo	El Salvador	18-24 Nov.
Sergio Castillo	Participar en Sondeo	El Salvador	18-24 Nov.
Assefaw Tewolde	Capacitación en Registros Dinámicos	Honduras - Guatemala	25-30 Nov.

**PARTICIPACION DEL GIT EN ACTIVIDADES DEL PROYECTO ACDI**

**EN LOS CUATRO PAISES**

1992

<b>FUNCIONARIO</b>	<b>PARTICIPACION</b>	<b>PAIS</b>	<b>FECHAS</b>
Danilo Pezo	Curso Alimentación en Verano	Guatemala	09-14 Feb.
Assefaw Tewelde	Participar en Reunión del PCCMCA	Nicaragua	25-27 Mar.
Danilo Pezo	Participar en Reunión del PCCMCA	Nicaragua	25-27 Mar.
Assefaw Tewelde	Visita a Universidad de Guelph para establecer nexos.	Canada	12-16 Mayo

**APPENDIX 4.2.**

**DISCUSSION OF INDIVIDUAL TECHNOLOGIES**

## **Appendix 4.2 Discussion of Individual Technologies**

### **Household Technologies (Hogar)**

- **Improved Wood Stoves (Estufas ahorradoras de leña)**

Instead of using an open fire with one pot, the new wood stove is a long narrow stove with three cooking spaces, a fire ?? on one end and a chimney at the other. Various types of these stoves have been promoted for many years in the region and the farming families are very keen on them. Their advantages are not only a drastic reduction in firewood use, but also being able to cook three pots at a time, no smoke and safer operation. It seems, however, that even the modest material costs may put it beyond the reach of most families. The saving of firewood should have a considerable impact on the environment, as well as on the demand for labour. It should be noted that in this specific social setting it is the man who frequently collects the firewood and thus the most significant benefit of this "home" technology goes to the husband.

- **Family Vegetable Gardens**

The growing of a wide variety of vegetables is not traditional in the project areas, and the introduction of kitchen gardens is aimed at improving the diet of rural families. These gardens have been promoted by family welfare departments for a long time, but have not been widely adopted. The implementation of this technology is probably the weakest in the project and the gardens visited were of rather low quality. This may be because home sub-system extensionists do not have agricultural training. This activity is also a prime example of the artificial separation of activities by the project into male and female domains. Home gardens are only promoted with women, when both husband and wife should jointly look after this type of activity.

- **Management and Health of Minor Animal Species**

This technology is integrated with the bovine health activities, but is fairly new and not yet well established. None of these activities were discussed during the farm visits.

- **Water Systems**

Having as the target area the dry zone of Central America implies a severe seasonal shortage of water, not only for crops, but also for livestock and human consumption. Many of the Cojecutores live on the higher mountain slopes and procuring water is a major task. By validating technologies for drinking water collection, this problem can hopefully be overcome. The technologies of hand-dug wells, boreholes and roof runoff collecting tanks are well established, and development organizations have specialized in this area. The roof

The prolonged dry season imposes considerable hardship on cattle, as during this time milk production ceases, and the animals lose weight. Technologies which provide fodder in the dry season are thus of considerable value. In-ground silos allow stover and other feed to be stored for feeding during the dry season. This can either provide a minimum feed supplement for the whole season, or prolong the milking period. While the technology has been adopted by many Coejecutores and is appreciated, its use is limited by the size of the silo and the availability of crop residues. In most cases it only permits feeding a small herd for about two weeks or fully feed a couple of milking cows for a month. Used on its own, the advantage of this technology seems to be limited.

- **Cattle Health Care**

As the cattle grazed far from the farm at the time of the evaluation, little direct observation was possible. This technology, which basically consists of a vaccination program, has been made mandatory by the project, for reasons not entirely clear. The veterinary system of the countries has its own vaccination and health program, and thus no new technology is being tested here. Farmers generally do not need to be persuaded re the usefulness of vaccinations, but the normal veterinary service has, due to financial and logistical limitations, only been able to provide limited coverage. The intensive coverage provided by the project allows a much better level of animal health care but does not appear sustainable in the long run, unless issues of vaccine availability and handling are also addressed.

However indications are that the project may train farmers in carrying out their own health care, but little evidence was found during the farm visits. Thus the question remains if this activity needs to be seen as a bonus to farmers, or if vaccinations need to be validated, or if the technology is farmer training in animal health care.

- **Cattle Herd Management**

Little evidence of such technologies was found during the visits, and indications are that improved reproduction management and cross-breeding with better genotypes has not been considered important. It should be noted here that the initial "dual purpose cattle" orientation has disappeared, and indeed the traditional "criollo" breed has been largely changed into zebu type beef cattle, in the process possibly reducing the milk production potential. Despite this, the project wisely dropped any potential technology aimed at genetic improvement as too difficult and complex. Instead lack of feed was considered a more important limitation to address than genetic improvement, based on the "Sondeo" results.

### **Agro-Forestry Technologies (Agro-Forestal)**

- **Live Fences and Wind Breaks**

**APPENDIX 4.3.**

**LIST OF PRINCIPAL PROJECT ACTIVITIES**



**PROYECTO: SISTEMAS AGROSILVOPASTORILES SOSTENIBLES PARA PEQUEÑOS  
PRODUCTORES DEL TROPICO SECO DE CENTRO AMERICA**

**PLANES OPERATIVOS ANUALES (POAs) 1992 - 1993 (Mayo, 1992)**

	<b>GUATEMALA</b>	<b>HONDURAS</b>	<b>NICARAGUA</b>	<b>EL SALVADOR</b>
<b>4. VALIDACION DE TECNOLOGIAS</b>				
<b>4.1 VALIDACION SUBSISTEMA HOGAR</b>				
<b>4.1.1 VALIDACION EN PRODUCCION Y PREPARACION DE ALIMENTOS</b>				
4.1.1.1 Estufas ahorradoras de leña	X	X	X	X
4.1.1.2 Huertos familiares (aboneras y prep.alimentos)	X	X	X	X
4.1.1.3 Manejo y sanidad de especies menores	X	X	X	X
<b>4.1.2 VALIDACION EN ASPECTOS SANITARIOS E HIGIENICOS</b>				
4.1.2.1 Captación de agua	-	X	X	-
<b>4.2 VALIDACION EN EL SUBSISTEMA AGRICOLA</b>				
<b>4.2.1 VALIDACION EN CULTIVOS Y SISTEMAS DE CULTIVOS</b>				
4.2.1.1 Sistemas de producción (Cultivos anuales y prácticas de conservación de suelos)	X	X	X	X
<b>4.3 VALIDACION EN EL SUBSISTEMA PECUARIO</b>				
<b>4.3.1 MANEJO DEL HATO BOVINO</b>				
4.3.1.1 Manejo de terneros	X	X	X	X
4.3.1.2 Manejo reproductivo	-	-	X	-
4.3.1.3 Prácticas sanitarias	X	X	X	X

	GUATEMALA	HONDURAS	NICARAGUA	EL SALVADOR
<b>5. EXPERIMENTACION O INVESTIGACION ADAPTATIVA</b>				
<b>5.1 A NIVEL DE SISTEMA (FINCA)</b>				
<b>5.2 EN EL SUBSISTEMA HOGAR</b>				
<b>5.3 EN EL SUBSISTEMA AGRICOLA</b>				
5.3.1 Asociación leguminosas con malz para mejoran. de suelos	-	-	X	-
5.3.2 Sistema de producción agrícola	-	X	-	-
5.3.3 Producción artesanal de semillas	X	X	-	X
<b>5.4 EN EL SUBSISTEMA PECUARIO</b>				
5.4.1 Variedades de caña de azúcar	-	X	-	-
5.4.2 Tres leguminosas forrajeras en asocio con sorgo	-	X	-	-
5.4.3 Evaluación de dos leguminosas en asocio con pasto de corte	-	X	-	-
5.4.4 Establecimiento/ caracterización pasto Andropogon gayanus	-	-	X	-
5.4.5 Establecimiento banco proteínas	-	X	X	-
<b>5.5 EN EL SUBSISTEMA FORESTAL/ AGROFORESTAL</b>				
5.5.1 Cultivo en callejones	-	X	-	-

**APPENDIX 6.1.**

**PRINCIPAL COOPERATING AGENCIES AND ORGANIZATIONS**

## APPENDIX 6.1.

### PRINCIPAL COOPERATING AGENCIES AND ORGANIZATIONS

Name of Agency or Organization	Nature of Relationship (Staff & % time w/Project)
--------------------------------	--

#### A. Headquarters (Turrialba, Costa Rica)

- |                             |                             |
|-----------------------------|-----------------------------|
| 1. CATIE                    | GIT technical assistance    |
| 2. University of Wageningen | Master's Student (6 months) |

#### B. Guatemala (Jutiapa)

- |                                    |   |         |                  |   |          |     |
|------------------------------------|---|---------|------------------|---|----------|-----|
| 1. DIGESA (Agricultural Extension) | 4 | 4 staff | 100%             | / | 10 staff | 50% |
| 2. DIGEBOS (Forestry Extension)    | 2 | 4 staff | 50%              |   |          |     |
| 3. DIGESEPE (Livestock Extension)  | 1 | 1 staff | 100%             | / | 6 staff  | 50% |
| 4. ICTA (Agricultural Research)    | 1 | 1 staff | 100%             | / | 4 staff  | 50% |
| 5. INCAP (Nutrition Studies)       | 2 | 6 staff | for study period |   |          |     |

#### C. Honduras (Choluteca)

- |                                     |     |          |                  |   |         |     |
|-------------------------------------|-----|----------|------------------|---|---------|-----|
| 1. SRN (Natural Resource Extension) | 3   | 3 staff  | 100%             | / | 2 staff | 25% |
| 2. SRN-USAID (Project LUPE)         | 1.5 | 6 staff  | 25%              | / | 2 staff | 10% |
| 3. INFOP (Skills Training)          | 0.8 | 1 staff  | 80%              |   |         |     |
| 4. Save The Children Project        | 1   | 4 staff  | 25%              |   |         |     |
| 5. UNAH (National Autonomous Univ.) | 1   | 1 staff  | 100%             | / | 1 staff | 5%  |
| 6. MSP (Public Health/Nutrition)    | 3.2 | 10 staff | for study period |   |         |     |

#### D. Nicaragua (Esteli)

- |                                    |     |         |                            |   |          |     |
|------------------------------------|-----|---------|----------------------------|---|----------|-----|
| 1. MAG (Agricultural Extension)    | 1   | 1 staff | 100%                       | / | 17 staff | 40% |
| 2. MED (Education)                 | 0.1 | 1 staff | - sporadic studies support |   |          |     |
| 3. MINSA (Public Health/Nutrition) | 0.1 | 2 staff | - sporadic studies support |   |          |     |

#### E. El Salvador (Santa Ana)

- |                                   |      |         |                            |   |          |        |
|-----------------------------------|------|---------|----------------------------|---|----------|--------|
| 1. CENTA (Agricultural Research)  | 2    | 2 staff | 100%                       | / | 5 staff  | 20%    |
| 2. CENTA (Agricultural Extension) | 1    | 4 staff | 100%                       | / | 14 staff | 35-40% |
| 3. MAG (Plan Trifinio)            | 0.33 | 1 staff | 30%                        |   |          |        |
| 4. Proyecto Madelena III          | 0.33 | 1 staff | 30%                        |   |          |        |
| 5. Renewable Natural Resources    | 0.1  | 1 staff | - sporadic training and TA |   |          |        |
| 6. ASAPROSAR                      | 0.1  | 1 staff | - sporadic nutrition TA    |   |          |        |

**APPENDIX 6.2.**

**PROJECT TRAINING ACTIVITIES**

**SUMARIO DE ACTIVIDADES DE CAPACITACION DESARROLLADAS O  
FINANCIADAS POR EL PROYECTO CATIE/ACDI**

**PERIODOS : 1990-91, 1991-92, 1992-93 (hasta junio, 1992)**

**A) CAPACITACION FORMAL EN LOS PAISES**

**PERIODO 1990-91**

**GUATEMALA**

1. Nombre : **Capacitación sobre registros dinámicos.**  
Participantes : **Contrapartes nacionales (hombres).**  
Fechas : **Junio, 1990.**  
Tema : **Capacitar sobre la toma de información.  
para los registros dinámicos de las fincas.  
Normalización de los registros.**
2. Nombre : **Sistemas de producción.**  
Participantes : **42 contrapartes nacionales (hombres)**  
Fechas : **Julio, 1990.**  
Tema : **Caracterización de los sistemas de producción  
de las fincas**
3. Nombre : **Curso corto sobre fertilidad y fertilización  
de suelos**  
Participantes : **45 contrapartes nacionales. 39 hombres y 06  
mujeres**  
Fechas : **25 - 26 agosto de 1990.**  
Tema : **Toma y análisis de muestras de suelos.  
Recomendaciones de fertilización.**

**PERIODO 1991 - 92**

**GUATEMALA**

4. Nombre : **Trabajos en agroforestería.**  
Participantes : **04 técnicos contrapartes nacionales (hombres)**  
Fechas : **22 - 23 de abril de 1991.**  
Tema : **Demostración de trabajos realizados en  
agroforestería.  
Implementación de sistemas agroforestales.**
5. Nombre : **Parcelas de validación**  
Participantes : **13 técnicos contrapartes nacionales (hombres).**  
Fechas : **29 - 30 de abril.**  
Tema : **Diseño e implementación de parcelas agrícolas  
en fincas de coejecutores.**

6. Nombre : **Huertos familiares.**  
 Participantes : 06 contrapartes nacionales (hombres).  
 Fechas : 02 - 03 de mayo.  
 Tema : Capacitación en el diseño, instalación y manejo de los huertos.
7. Nombre : **Muestreo de suelos.**  
 Participantes : 13 contrapartes nacionales (hombres).  
 Fechas : 03 de mayo.  
 Tema : Técnicas de campo en la toma y preparación de las muestra de suelos.
8. Nombre : **Sanidad y producción animal.**  
 Participantes : 14 contrapartes nacionales (hombres).  
 Fechas : 06 - 09 de agosto.  
 Tema : Prácticas sanitarias y manejo reproductivo del componente pecuario.
9. Nombre : **Enfoque de Sistemas. Fase I.**  
 Participantes : 35 Contrapartes nacionales (hombres).  
 Fechas : 27 - 28 de agosto.  
 Tema : Estructura y funcionamiento de los sistemas de producción de las fincas.
10. Nombre : **Tecnología de alimentos - Fase I**  
 Participantes : 19 Educadoras del hogar nacionales (mujeres).  
 Fechas : 02 - 06 de setiembre.  
 Tema : Preparación, consumo y preservación de alimentos.
11. Nombre : **Tecnología de alimentos - Fase II.**  
 Participantes : 20 Educadoras del hogar nacionales (mujeres)  
 Fechas : 07 - 11 de octubre.  
 Tema : Cosecha, consumo y conservación de frutas y verduras.

## HONDURAS

12. Nombre : **Producción de frijol.**  
 Participantes : 01 técnico contraparte nacionales (hombre)  
 Fechas : 22 julio - 01 agosto.  
 Tema : Manejo de variedades y producción de frijol en fincas.
13. Nombre : **Riego por surcos.**  
 Participantes : 01 Técnico (hombre).  
 Fechas : 19 de agosto.  
 Tema : Alternativas de riego por desnivel en cultivos anuales (agrícolas).

14. Nombre : **Sistemas de registros e información.**  
 Participantes : 01 Técnico (hombre).  
 Fechas : 23 - 27 de setiembre.  
 Tema : Capacitación en toma de datos para registros e información de las fincas.
15. Nombre : **Evaluación de equipo agrícola.**  
 Participantes : 05 técnicos y contrapartes nacionales (hombres).  
 Fechas : 28 octubre - 08 noviembre.  
 Tema : Demostración y evaluación de equipos agrícolas más comunes utilizados en agricultura.

#### NICARAGUA

16. Nombre : **Registro Dinámico en Fincas .**  
 Participantes : 16 contrapartes nacionales (hombres)  
 Fechas : 16 de octubre.  
 Tema : Capacitación sobre la toma de información para los registros dinámicos de las fincas.
17. Nombre : **Agroforestería**  
 Participantes : 09 Contrapartes nacionales (hombres).  
 Fechas : 18 de diciembre.  
 Tema : Establecimiento y prácticas de sistemas agroforestales.

#### EL SALVADOR

18. Nombre : **Técnicas de cultivo de árboles de uso múltiple**  
 Participantes : 12 contrapartes nacionales.  
 Fechas : 12 - 13 de febrero.  
 Tema : Prácticas culturales y establecimiento de árboles de uso múltiple en zonas secas.
19. Nombre : **Validación en el subsistema hogar**  
 Participantes : 07 Visitadoras del hogar nacionales (mujeres)  
 Fechas : 23 de marzo.  
 Tema : Estrategias y metodologías de seguimiento a las tecnologías del subsistema hogar.



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**GUATEMALA**

- 20.Nombre : **Elaboración de subproductos derivados de la leche. Manejo de especies menores.**  
Participantes : 10 contrapartes (02 hombres y 08 mujeres).  
Fechas : 11 - 12 de mayo.  
Tema : Capacitación en el uso y elaboración de diferentes subproductos derivados de la leche. Manejo de especies menores (aves y cerdos), en las fincas.

**HONDURAS**

- 21.Nombre : **Taller sobre validación de tecnologías**  
Participantes : 25 contrapartes (20 hombres y 05 mujeres)  
Fechas : 02-03 de abril  
Tema : Conceptos metodológicos sobre validación, adopción y transferencia de tecnologías.
- 22.Nombre : **Taller sobre estudios de alimentación, nutrición y salud.**  
Participantes : 08 técnicos contrapartes.  
Fecha : 11-12 de mayo.  
Tema : Discusiones sobre los estudios a llevarse a cabo sobre alimentación, nutrición y salud de las familias coejecutoras y testigos.

**NICARAGUA**

- 23.Nombre : **Taller sobre parámetros de validación.**  
Participantes : 19 técnicos contrapartes (16 hombres y 03 mujeres).  
Fechas : 01 de abril.  
Tema : Revisión de parámetros y conceptos referentes a la validación de tecnologías en campo. Parcelas de validación.

**EL SALVADOR**

- 24.Nombre : **Taller sobre uso de registros de nutrición.**  
Participantes : 11 mujeres.  
Fechas : 30 de abril.  
Tema : Capacitación sobre el uso y manejo de registros en el próximo estudio sobre nutrición.

- 25.Nombre : Técnicas de uso de aparatos especializados para el estudio de nutrición.  
 Participantes : 09 personas (01 hombre y 08 mujeres).  
 Fechas : 18 de mayo.  
 Tema : Demostración del manejo y uso de los aparatos e implementos a utilizar en el estudio de nutrición.
- 26.Nombre : Curso : Extensión, silvicultura y economía de plantaciones forestales.  
 Participantes : 02 técnicos del Proyecto (hombres).  
 Fechas : 03 -05 de junio.  
 Tema : Extensión, silvicultura y economía de plantaciones forestales dictados en GUACOTECTI.
- 27.Nombre : Producción artesanal de semillas.  
 Participantes : 10 personas (08 hombres y 02 mujeres).  
 Fechas : 15 de junio.  
 Tema : Capacitación a técnicos contrapartes del municipio de Texistepeque sobre características de los materiales a validar y uso de registros.
- 28.Nombre : Producción artesanal de semillas.  
 Participantes : 07 personas (05 hombres y 02 mujeres).  
 Fechas : 15 de junio.  
 Tema : Capacitación a técnicos contrapartes del municipio de Metapán sobre características de los materiales a validar y uso de registros.
- 29.Nombre : Producción artesanal de semillas.  
 Participantes : 08 personas (06 hombres y 02 mujeres).  
 Fechas : 19 de junio.  
 Tema : Capacitación a técnicos contrapartes del municipio de Candelaria de la Frontera sobre características de los materiales a validar y uso de registros.

6. Nombre : **Sanidad, reproducción y manejo bovino.**  
 Participantes : 29 técnicos y contrapartes. De Guatemala 15, de Honduras 07 y de Nicaragua 07. (27 hombres y 02 mujeres).  
 Fechas : 10 setiembre - 04 octubre.  
 Lugar : Jutiapa, Guatemala.  
 Tema : Alimentación de bovinos, prácticas sanitarias en el componente animal, manejo reproductivo del hato y prácticas de manejo bovino.
7. Nombre : **Curso de Agroforestería (CATIE/JICA).**  
 Participantes : 03 contrapartes. Uno de Guatemala, uno de Honduras y uno de Nicaragua (02 hombres y 01 mujer)  
 Fechas : 16 setiembre - 06 diciembre.  
 Lugar : CATIE, Turrialba.  
 Tema : Principios y fundamentos agroforestales. Viajes de estudios a sistemas agroforestales y estudio de caso de un SAF.
8. Nombre : **Técnicas de diagnóstico de enfermedades hemoparasitarias.**  
 Participantes : 07 técnicos y contrapartes. De Guatemala 03, de Honduras 02 y de Nicaragua 02 (05 hombres y 02 mujeres).  
 Fechas : 09 - 11 de diciembre.  
 Lugar : CATIE, Turrialba.  
 Tema : Capacitaciones prácticas sobre el diagnóstico de enfermedades hemoparasitarias : babesiosis y anaplamosis.
9. Nombre : **Toma de muestras y análisis bromatológicos.**  
 Participantes : 07 Técnicos y contrapartes. De Guatemala 03, de Honduras 02 y de Nicaragua 02 (05 hombres y 02 mujeres).  
 Fechas : 12 de diciembre.  
 Lugar : CATIE, Turrialba.  
 Tema : Técnicas sobre toma de muestras y manejo de materiales para análisis bromatológico.
10. Nombre : **Taller sobre registros de datos y validación.**  
 Participantes : 32 personas entre personal técnico, administrativo y contrapartes del Proyecto. De Turrialba 08, de Guatemala 07, de Honduras 06, de Nicaragua 05 y de El Salvador 06 (24 hombres y 08 mujeres).  
 Fechas : 13 - 18 de enero.  
 Lugar : CATIE, Turrialba.  
 Tema : Unificación de registros, análisis de datos y desarrollo de metodologías de cuantificación del proceso de validación.

- 16.Nombre : Capacitación en programa para llevar registros.  
Participantes : 05 técnico y contrapartes. De El Salvador 02 y de Guatemala 03 (03 hombres y 02 mujeres).  
Lugar : Jutiapa, Guatemala.  
Fechas : 16 - 17 de junio.  
Tema : Uso de programa y pantallas para recibir información de los formatos de campo.
- 17.Nombre : Capacitación en programa para llevar registros.  
Participantes : 05 técnico y contrapartes. De Honduras 02 y de Nicaragua 03 (03 hombres y 02 mujeres).  
Lugar : Estelí, Nicaragua.  
Fechas : 18 - 19 de junio.  
Tema : Uso de programa y pantallas para recibir información de los formatos de campo.
- 18.Nombre : El papel de la mujer.  
Participantes : 30 contrapartes. Por Honduras 14 y por Nicaragua 16 (10 hombre y 20 mujeres).  
Fechas : 29-30 junio.  
Lugar : Estelí, Nicaragua.  
Tema : Conceptualización de género y la participación activa de la mujer campesina en el desarrollo de las actividades de la finca, específicamente en el subsistema hogar.

6. Nombre : **Introducción a la estadística.**  
 Participantes : 19 Contrapartes (13 hombres y 06 mujeres)  
 Fechas : 25 - 27 de marzo.  
 Tema : Principios fundamentales sobre estadística, diseño y muestreo.
7. Nombre : **Papel de la Mujer en el Desarrollo Rural**  
 Participantes : 34 contrapartes (15 hombres y 19 mujeres)  
 Fechas : 25 - 26 de marzo.  
 Tema : La mujer campesina en el desarrollo de actividades de la finca y su participación en el componente socioeconómico.
8. Nombre : **Consulta de tecnologías para validación.**  
 Participantes : 28 familias coejecutoras extendidas (84 hombres y 84 mujeres).  
 Fechas : 15 - 25 de abril  
 Tema : Talleres de consulta con los coejecutores, para validar diferentes opciones tecnológicas.
9. Nombre : **Actividades agroforestale.**  
 Participantes : Familias coejecutoras (28 hombres y 28 mujeres).  
 Fechas : 25 abril - 17 de mayo.  
 Tema : Planificación y diseño de diferentes opciones de tecnologías agroforestales a implementar en las fincas.
10. Nombre : **Establecimiento de parcelas de validación.**  
 Participantes : Coejecutores (28 hombres).  
 Fechas : 06 - 31 de mayo.  
 Tema : Escogencia del lugar, diseño y establecimiento de las parcelas de campo dedicadas a validación.
11. Nombre : **Establecimiento de huertos familiares..**  
 Participantes : Familias coejecutoras extendidas (84 hombres y 84 mujeres).  
 Fechas : 06 - 31 de mayo.  
 Tema : Escogencia del lugar, diseño, establecimiento y labores culturales a realizar en los huertos familiares.
12. Nombre : **Técnicas de fertilización.**  
 Participantes : Familias coejecutoras extendidas (84 hombres).  
 Fechas : 15 - 30 de junio.  
 Tema : Recomendaciones, dosis y época de aplicación de los diferentes fertilizantes a los diferentes cultivos.
13. Nombre : **Selección artesanal de semillas.**  
 Participantes : 42 coejecutores (hombres).  
 Fechas : 16 - 21 de setiembre.

- Tema : Capacitación en la escogencia y manejo de plantas y parcelas dedicadas a la producción de semillas artesanales de diferentes cultivos agrícolas.
- 14.Nombre : Guateras mejoradas .  
 Participantes : 06 contrapartes (hombres).  
 Fechas : 11 de octubre.  
 Tema : Establecimiento de guateras y uso de variedades criollas y/o mejoradas en guateras.
- 15.Nombre : Hornos y cilindros forrajeros.  
 Participantes : 08 contrapartes (hombres).  
 Fechas : Octubre - noviembre (varios).  
 Tema : Capacitaciones de campo en el establecimiento y construcción de los hornos y cilindros forrajeros.
- 16.Nombre : Preparación de alimentos.  
 Participantes : 28 familias coejecutoras extendidas (84 mujeres)  
 Fechas : Octubre - noviembre (varias).  
 Tema : Capacitación en la preparación de alimentos y el consumo de frutas y verduras.
- 17.Nombre : Manejo de pastos.  
 Participantes : 39 contrapartes (28 hombres y 11 mujeres).  
 Fechas : 10 de octubre.  
 Tema : Capacitación de campo en el manejo de pastos y pasturas a establecer en las fincas de coejecutores.
- 18.Nombre : Hornos forrajeros.  
 Participantes : 28 coejecutores (hombres).  
 Fechas : 20 de marzo.  
 Tema : Capacitación de campo en la apertura y calidad de forraje de los hornos.

## HONDURAS

- 19.Nombre : Producción artesanal de semillas.  
 Participantes : 05 técnicos y contrapartes (hombres).  
 Fechas : 17 de julio.  
 Lugar : Estelí, Nicaragua.  
 Tema : Capacitación de campo en la selección y escogencia de plantas y/o parcelas productoras de semillas artesanales.
- 20.Nombre : Demostración de siembras en curvas a nivel.  
 Participantes : 07 contrapartes (hombres).  
 Fechas : 10 de setiembre.  
 Tema : Capacitación de campo en el diseño y establecimiento de siembras en curvas a nivel en áreas de ladera.

21. Nombre : Hornos forrajeros.  
 Participantes : 03 contrapartes (hombres).  
 Fechas : 13 de setiembre.  
 Tema : Capacitación de campo en la construcción de hornos forrajeros.
22. Nombre : Captación de aguas de lluvia.  
 Participantes : 05 técnicos (hombres) 02 de Honduras y 01 de Nicaragua.  
 Fechas : 19 de setiembre  
 Lugar : Las Lajas, Guatemala.  
 Tema : Visitar instalaciones e infraestructura de captaciones de agua de lluvias.
23. Nombre : Opciones tecnológicas.  
 Participantes : 30 coejecutores (hombres).  
 Fechas : 08 de octubre.  
 Tema : Taller de consulta con los coejecutores sobre las opciones tecnológicas a validar.
24. Nombre : Hornos forrajeros.  
 Participantes : 20 coejecutores (hombres).  
 Fechas : 30 octubre.  
 Tema : Construcción, manejo y llenado de los hornos.
25. Nombre : Opción de tecnologías.  
 Participantes : 43 coejecutores y sus familias (38 hombres y 05 mujeres).  
 Fechas : 23 - 24 febrero.  
 Tema : Presentación de opciones tecnológicas y alternativas de trabajo a los coejecutores y sus familias.
26. Nombre : Encuentros agropecuarios.  
 Participantes : 52 Coejecutores y sus familias (31 hombres y 21 mujeres).  
 Fechas : 19 - 26 de marzo.  
 Tema : Tecnologías a validar y trabajos en fincas de cada uno de los subsistema.

## NICARAGUA

27. Nombre : Hornos forrajeros.  
 Participantes : 119 coejecutores, familiares y vecinos (hombres).  
 Fechas : Setiembre (varios).  
 Tema : Demostración de la construcción, ventajas para alimentación de verano y llenado de hornos.

- 28.Nombre : **Consulta de tecnologías a validar.**  
 Participantes : 30 coejecutores (29 hombres y 01 mujer)  
 Fechas : 12 - 14 de setiembre.  
 Tema : Presentación de opciones tecnológicas para someterlas a validación en fincas de coejecutores y alternativas de trabajo.
- 29.Nombre : **Parcelas de validación.**  
 Participantes : 48 coejecutores y sus familias (hombres).  
 Fechas : Setiembre (varios).  
 Tema : Escogencia, diseño y establecimiento de las parcelas agrícolas de validación.
- 30.Nombre : **Amonificación de rastros.**  
 Participantes : 05 contrapartes (hombres).  
 Fechas : 20 de setiembre.  
 Tema : Descripción de la tecnología. Implementación en fincas de coejecutores.
- 31.Nombre : **Agroforestería.**  
 Participantes : 14 contrapartes (11 hombres y 03 mujeres)  
 Fechas : 19 de diciembre.  
 Tema : Seminario sobre principios de agroforestería, sistemas agroforestales y perspectivas de agroforestería dentro del Proyecto.
- 32.Nombre : **Alimentación de bovinos.**  
 Participantes : 06 contrapartes (hombres).  
 Fechas : Enero.  
 Tema : Estrategias y técnicas de alimentación de ganado bovino en época seca.
- 33.Nombre : **Prevalencia de anaplasmosis.**  
 Participantes : 24 técnicos y contrapartes (20 hombres y 04 mujeres).  
 Fechas : Enero (varios).  
 Tema : Sangrado y toma de muestras en animales bovinos, para prevalencia de anaplasmosis.
- 34.Nombre : **Viveros forestales.**  
 Participantes : 09 contrapartes (hombres).  
 Fechas : Enero (varios).  
 Tema : Capacitaciones de campo en el establecimiento de viveros forestales en fincas de los coejecutores.
- 35.Nombre : **Amonificación de rastros.**  
 Participantes : 05 coejecutores (hombres).  
 Fechas : Febrero.  
 Tema : Demostración de la tecnología, calidad del rastrojo mejorado y palatabilidad por los animales.



36. Nombre : **Estufas mejoradas.**  
 Participantes : 22 coejecutores y sus familias (04 hombres y 18 mujeres).  
 Fechas : Febrero (varios).  
 Tema : Demostración y construcción de estufas ahorradoras de leña.
37. Nombre : **Filtro de agua.**  
 Participantes : 02 coejecutores (hombres).  
 Fechas : Febrero.  
 Tema : Demostración capacitación y construcción de filtros lento.
38. Nombre : **Hornos forrajeros.**  
 Participantes : 12 coejecutores (10 hombres y 02 mujeres).  
 Fechas : Marzo.  
 Tema : Apertura de hornos, toma de muestras para análisis bromatológico, apreciación de calidad de forrajes y palatabilidad por los animales.
39. Nombre : **Instalación de bombas de agua.**  
 Participantes : 11 técnicos y contrapartes (09 hombres y 02 mujeres).  
 Fechas : Marzo.  
 Tema : Capacitaciones en el manejo e instalación de las bombas, para la extracción de agua.

#### **EL SALVADOR**

40. Nombre : **Sistemas agroforestales.**  
 Participantes : 05 contrapartes (04 hombres y 01 mujer).  
 Fechas : 27 de febrero.  
 Tema : Capacitación de campo en el establecimiento y manejo de los principales sistemas agroforestales de la zona.

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#### **GUATEMALA**

41. Nombre : **Suplementación alimentaria sal + urea.**  
 Participantes : 29 personas, coejecutores y sus familias (15 hombres, 06 mujeres y 08 niños)  
 Fechas : 20 de mayo.  
 Tema : Capacitación en servicio a coejecutores sobre ventajas de la suplementación alimentaria con sal + urea al ganado bovino.

42. Nombre : **Especies menores.**  
 Participantes : 12 coejecutores del municipio de Quesada (04 hombre y 08 mujeres).  
 Fechas : 09 de junio.  
 Tema : Capacitación en servicio a coejecutores y sus familias sobre el establecimiento, manejo y sanidad de especies menores (aves y cerdos) en las fincas.
43. Nombre : **Especies menores.**  
 Participantes : 10 personas familiares de coejecutores del municipio de Santa Catarina Mita (06 mujeres y 04 niños).  
 Fechas : 10 de junio.  
 Tema : Capacitación en servicio a coejecutores y sus familias sobre el establecimiento, manejo y sanidad de especies menores (aves y cerdos) en las fincas.
44. Nombre : **Especies menores.**  
 Participantes : 07 personas del municipio de Jalpatagua (01 hombre y 06 mujeres).  
 Fechas : 16 de junio.  
 Tema : Capacitación en servicio a coejecutores y sus familias sobre el establecimiento, manejo y sanidad de especies menores (aves y cerdos) en las fincas.
45. Nombre : **Especies menores.**  
 Participantes : 09 coejecutores del municipio de Asunción Mita (01 hombre y 08 mujeres).  
 Fechas : 17 de junio.  
 Tema : Capacitación en servicio a coejecutores y sus familias sobre el establecimiento, manejo y sanidad de especies menores (aves y cerdos) en las fincas.
46. Nombre : **Especies menores.**  
 Participantes : 19 personas familiares de coejecutores del municipio de Conguaco-Azulco (06 hombres, 09 mujeres y 04 niños).  
 Fechas : 18 de junio.  
 Tema : Capacitación en servicio a coejecutores y sus familias sobre el establecimiento, manejo y sanidad de especies menores (aves y cerdos) en las fincas.

#### HONDURAS

47. Nombre : **Gira a parcela agroforestales.**  
 Participantes : 03 técnicos de COHDEFOR/MADELENA (hombres).  
 Fechas : 22 de mayo.  
 Tema : Demostración en campo de los diferentes sistemas agroforestales presentes en la zona.

48.Nombre : Intercambio técnico sobre las tecnologías :  
estufas ahorradoras de leña y hornos  
forrajeros.  
Participantes : 03 técnicos del Proyecto (01 hombre y 02  
mujeres)  
Fechas : 18 - 19 de junio.  
Lugar : Estelí, Nicaragua.  
Tema : Intercambio de información técnica sobre  
estufas ahorradoras de leña y hornos  
forrajeros.

## NICARAGUA

49.Nombre : Hornos forrajeros, rastros amonificados,  
conos forrajeros, manejo y funcionamiento de  
estufas ahorradoras de leña.  
Participantes : 15 técnicos (hombres), 23 coejecutores (20  
hombres y 03 mujeres).  
Fechas : 08 de abril.  
Tema : Encuentros agropecuarios con coejecutores y  
técnicos sobre demostración de tecnologías.

50.Nombre : Tecnologías propuestas para el subsistema  
hogar e instrucciones generales sobre el  
estudio Nutricional/Alimentario.  
Participantes : 08 técnicos y 16 productores (hombres).  
Fechas : 07 de mayo  
Tema : Taller sobre las tecnologías del subsistema  
hogar. Instrucciones y capacitación sobre el  
estudio Nutricional/Alimentario.

51.Nombre : Talleres de consulta de tecnologías (5).  
Participantes : 45 coejecutores (28 hombres y 17 mujeres).  
Fechas : 13 - 21 de mayo.  
Tema : Consultas sobre las tecnologías a realizar por  
los coejecutores en el periodo 1992-93.

52.Nombre : Enfermedades en bovinos, uso y manejo de  
vacunas.  
Participantes : 24 personas, 16 productores y 08 técnicos  
(hombres).  
Fechas : 18 de mayo.  
Tema : Sintomatología y reconocimiento de las  
enfermedades más comunes en la región,  
prevención y tratamientos.  
Clases, tipos, manejo y usos de vacunas en el  
componente pecuario.

53.Nombre : Encuestas sobre el Estudio Nutricional/  
Alimentario.  
Participantes : 09 técnicos comtrapartes (02 hombres y 07  
mujeres).  
Fechas : 01 - 02 de junio.

**APPENDIX 6.3.**

**PUBLICATIONS PLANNED FOR 1992**

**CENTRO AGRONÓMICO TROPICAL DE INVESTIGACIÓN Y ENSEÑANZA**

**PROYECTO SISTEMAS AGROSILVOPASTORILES SOSTENIBLES PARA PEQUEÑOS PRODUCTORES DEL TROPICO SECO DE CENTRO AMERICA**

Publicaciones y Presentaciones Proyectadas para 1992  
(Febrero, 1992)

- Título:** Manual de Campo para el Extensionista Agropecuario
- Autor:** Gustavo Morales.
- Observación:** Colaboración del Proyecto en levantado de texto y financiamiento de publicación.
- 
- Título:** Técnicas de la Entrevista: Tradicional y Participativa (folleto).
- Autores:** Johannes Karremans y Gloria Urueta.
- 
- Título:** Aplicación de Tecnologías Validadas y Desarrollo Auto-Costeable: ¿Una Opción Viable para Pequeños Productores? (presentación y capítulo de memorias del Coloquio Mesoamericano "Sistemas de Producción y Desarrollo Agrícola", México, 22 a 26 de junio, 1992).
- Autor:** Ricardo Radulovich.
- 
- Título:** Sostenibilidad en el Desarrollo Agropecuario y el Concepto de Sistemas de Producción (presentación y capítulo de memorias del Coloquio Mesoamericano "Sistemas de Producción y Desarrollo Agrícola", México, 22 a 26 de junio, 1992).
- Autor:** Johannes Karremans.
- 
- Título(s):** Por definir (dos artículos para revista Turrialba, Vol. 42, No1, 1992 - número de RISPAL).
- Autores:** Ricardo Radulovich, Johannes Karremans, otros Proyecto ACDI.

- Título:** Conceptos de Validación (folleto de trabajo).
- Autores:** Ricardo Radulovich y Johannes Karremans.
- 
- Título:** Alimentación de Ganado Bovino en Época Seca (apuntes de curso, posible edición posterior).
- Autor:** Danilo Pezo (editor), instructores del curso.
- 
- Título:** Resultados de Consultas de Caracterización en Guatemala, Honduras, Nicaragua y El Salvador (depuración y edición de los resultados).
- Autores:** Personal Proyecto CATIE/ACDI.
- 
- Título:** Huertas Familiares para Zonas con Sequía Estacional (documento de trabajo).
- Autores:** Rosemary Nasser, Cecilia Velasco, Ricardo Radulovich, otros.
- 
- Título:** Procesamiento, Envasado y Conservación de Frutas y Verduras (apuntes de curso, posible edición posterior).
- Autores:** Personal del CENITA (El Salvador) y Proyecto CATIE/ACDI.
- 
- Título:** El Horno Forrajero (folleto de extensión).
- Autores:** Personal Proyecto CATIE/ACDI.
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- Título:** Estufas Ahorradoras de Leña (folleto de extensión).
- Autores:** Personal Proyecto CATIE/ACDI.