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**TROPICAL AGRICULTURE RESEARCH AND  
HIGHER EDUCATION CENTER  
(CATIE)**

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**IMPACT INDICATORS  
INSTITUTIONAL DEVELOPMENT PLAN**

**TURRIALBA, COSTA RICA  
NOVEMBER, 1995**

**"The impact of this Plan will be at the field level. Only here can it be judged to have achieved its goals and fulfilled its mission. If the knowledge, technologies and alternative practices are not available and in use by the end of the 1990s, it would be difficult to justify the Center's existence in the terms of this Strategic Plan. There must be clear and measurable indications that it has contributed to sustainable use of ecosystems and, thus, has broken the vicious circle of rural poverty and land degradation." (CATIE's Strategic Plan, 1994)**

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This is the fourth and final document related to CATIE's Strategic Plan: Agenda for a Critical Decade, 1993-2002 (CATIE 1994). This and the three Action Plans for the Programs (CATIE 1994a; 1994b; 1995) constitute the framework for CATIE's Institutional Development. Its purpose is to identify the strategies and activities that will bring about changes that improve implementation and attainment of the Institution's goals. It is assumed that by strengthening the Center, CATIE will be better able to accomplish its Strategic Plan and to attract and implement new projects.

### ***I: CATIE'S DEVELOPMENT PLAN***

Over the last half century CATIE has continuously assimilated new areas of action that are now key aspects of the development of agriculture and management of natural resources in the American tropics. These include research on cocoa and coffee, forest plantations and forest management, agroforestry and farming systems. During each phase the Center underwent related institutional changes.

For this new era of increased awareness of the importance of the environmental sciences, biodiversity and integrated natural resources management, CATIE must insure that its institutional development reflects the changes and new dimensions that are required. Examples of the latter are gender issues and other socioeconomic concerns that must form part of the orientation of the new professionals trained at the Center for the 21st century.

According to CATIE's Strategic Plan, the Center's mission for this decade is to:

"Stimulate and promote research and education in agricultural and related sciences for the development, conservation and sustainable use of natural resources in the American tropics to improve the well-being of mankind".

This regional mission is reflected in CATIE's logical framework shown in Table 1. This and the Action Plans of CATIE's current Programs and Areas are the starting point for the Center's institutional development.

The Institutional Development Plan contained in this document is designed to achieve the following:

1.- Strengthen CATIE's ability to stimulate improvement in its member countries' capabilities in sustainable agriculture and integrated management of renewable natural resources.

2.- Strengthen formal links for cooperation and complementarity with national and international institutions from the public and private sectors, especially universities, technical schools, research institutes, development and conservation NGOs, and farmers' organizations. This will improve communication with end users, technology transfer and the dissemination of the knowledge developed or validated at CATIE.

3.- Establish, as the foundation for all CATIE's actions, the promotion and fostering of practices for sustainable, ecologically-sensitive agriculture and for the management of natural resources that are socially, culturally, economically, and environmentally acceptable. The widest participation of the population will be sought, and gender and social issues will be embraced by all CATIE's programs.

4.- Establish clear indicators to allow the evaluation and monitoring of impacts of CATIE's activities in the region.

5.- Implement a human resources development strategy that pays special attention to gender and social issues, and enhances the career stability and development of CATIE's employees.

6.- Develop a strategy to achieve financial sustainability and thereby assure the implementation of the Strategic Plan.

Although sometimes not explicitly mentioned, the majority of the measures proposed for bringing about the changes described in this plan require additional funding before they can be put into practice. It is an underlying assumption that a combination of international donor support and the measures CATIE itself can take to strengthen core budget will be sufficient for implementing the main proposals.

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**TABLE 1. LOGICAL FRAMEWORK ACCORDING TO CATIE'S STRATEGIC PLAN FOR 1993-2002**

INSTITUTION	MISSION	Gen. OBJECTIVE	Sp. OBJECTIVES	STRATEGIES	ACTIVITIES
<p>-CATIE, and its strategic allies</p>	<p>-To stimulate and promote research and education for development, conservation and sustainable use of natural resources in the American tropics for the well being of humankind</p>	<p>-To establish and generate research, education and technical cooperation programs which contribute to the solution of socioeconomic and agroecological problems in the American tropics</p>	<p>-To generate and validate technological practices for agricultural production and natural resource management</p> <p>-To prepare professionals at postgraduate level</p> <p>-To promote proficiency in technological practices</p> <p>-To disseminate information and stimulate the adoption of new technological practices</p>	<p>-To identify and develop new technologies and practices that harmonize production and conservation</p> <p>-To provide specialized training for professionals in sustainable development</p> <p>-To strengthen national and local organizations</p> <p>-To communicate and promote sustainable technological practices at the level of final users</p>	<p>-Research, and validation</p> <p>-Higher education and training</p> <p>-Training and outreach; networking</p> <p>-Transfer, technical cooperation, and communication of information</p>

## **II: OUTREACH**

Without outreach, the Center's presence and impact in its member countries will be minimal. Outreach to national program partners is an integral part of CATIE's overall activities, and formal implementation, analytical and follow-up structures are needed.

In order to develop the Center's outreach expertise, CATIE will build on the experience it has gained through current and past projects. The Technical Areas of the Programs will be strengthened with the appropriate resources to achieve a more efficient outreach capability.

### **1. The outreach strategy**

#### **1.1 Institutional development objective**

\* To disseminate research results, improve access to CATIE's educational opportunities, and to strengthen institutional capabilities locally and nationally.

The immediate objectives are:

- i) To strengthen the system for dissemination of research results to institutions in the member countries;
- ii) To put in place the mechanisms and programs that will strengthen the research and education capabilities of counterparts in the member countries so that they can participate more effectively in problem solving research, and in diffusion and implementation of results;
- iii) To increase community participation in problem solving research.

#### **1.2 Actions**

Four actions will be the core of CATIE's outreach efforts. They are:

- \* The strengthening of CATIE's institutional links;
- \* The refocusing of traditional research activities;
- \* The implementation of a professional educational system (teaching and training) that is technology oriented;
- \* The improvement of existing outreach mechanisms and the clear definition of the institutional clientele.

##### **1.2.1.- Institutional links**

CATIE seeks to establish problem solving research, sound validation practices, applied training and cooperative activities in conjunction with national and international institutions and organizations, both in the private and public sectors.

The Center promotes an integrated and holistic approach to agricultural and natural resources research, training and technology transfer activities in order to achieve sustainability in its member countries. It stresses (i) technical collaboration with measurable impacts at the field level; (ii) activities relating to production, education, training and conservation with institutions, both worldwide and as a liaison and diffusion center for tropical America; and (iii) the institutional strengthening of local and national institutions.

In addition to outreach targetting local and national institutions (dealt with in the following section) CATIE cooperates in various ways with a broad range of regional and international partners:

- \* **Complementarity with IICA.** CATIE has working relations with IICA in areas such as technical assistance, joint execution of projects, development of human resources, transfer of research results, documentation and information systems, and the strengthening of national institutions. CATIE and IICA cooperate in the search for joint funding opportunities.
- \* **Strategic alliances and regional links with WWF, IUCN, IPGRI-INIBAP, CIFOR, ICRAF, ISNAR and similar institutions** for carrying out joint research, training and regional development projects. This avoids unwanted duplication and exploits the mutual strengths of each organization.
- \* **Institutional cooperation with CIRAD, CIAT, NRI and others.** Joint action in specific areas of mutual regional interest with institutions that have scientific projects, in a complementary and synergistic effort.
- \* **Development of scientific, educational and regional networks** such as REDCA, PROMECAFE, PROCITROPICOS and REMERFI.
- \* **Joint teaching and training programs, and academic exchanges** with overseas universities such as the Agricultural University of Wageningen, Netherlands; Wisconsin, Colorado State and Cornell Universities, USA; Göteborg University, Sweden; Oxford University, UK; Helsinki University, Finland; and the Université Laval, Canada, as well as national universities in CATIE's member countries.
- \* **Cooperation with private organizations** in areas of mutual interest. Organizations with which CATIE currently has joint actions include research and/or commercial projects of Alimentos Congelados de Guatemala, S.A. (Alcosa), Gremial de Exportadores de Productos no Tradicionales, CORBANA, Standard Fruit Co. (Dole), Nestlé, grass roots organizations, and others. The activities are complementary and synergistic in nature.

#### 1.2.2 Outreach mechanisms and clientele

CATIE's outreach will occur through higher education and training, dissemination of information, networks, participative research and validation, technical



assistance, field demonstrations, and other technical services. These mechanisms are aimed at reaching CATIE's main clientele: government institutions, development and conservation NGOs, higher education and research centers, producers of goods and services with emphasis on low income farmers and the private sector, and decision and opinion makers (Fig. 1).

Outreach activities will receive increased input from the Education Program. Already, the demand for a new professional profile has led CATIE to begin a process of curricular development aimed at producing graduates and trainees with a more suitable exit profile. The vocational programs will produce graduates and trainees better fitted to the needs of the private sector, while the more scientifically oriented programs traditionally offered at a Master's degree level will continue to fill the requirements of universities and research institutes.

In each member country the Center will develop permanent partners for specific domains of activity. CATIE will work with its partners on a long term, mutually beneficial basis, with the partners serving as liaison and focal points for CATIE's national-level extension efforts, and the Center automatically channelling relevant technologies and practices to them. Permanent partners will participate in project planning from the early stages, and will benefit from special access to CATIE's higher education and training programs. An ongoing consultation process will provide continuing feedback from these principal partners that will be of paramount importance to the Center in adjusting its approach to national needs. By this means the impact of CATIE, a regional institution, will be felt continuously at the national level.

Partner links will be strengthened or initiated with:

\* **Governmental institutions**

The governmental institutions of member countries, including the national agricultural research systems (NARs), share common goals with CATIE. Coordination with them is essential for receiving requests, feedback, the design, implementation, monitoring and evaluation of projects, networking, the functioning of information systems, targeting technical assistance, field demonstration sites, and programming effective education and training activities.

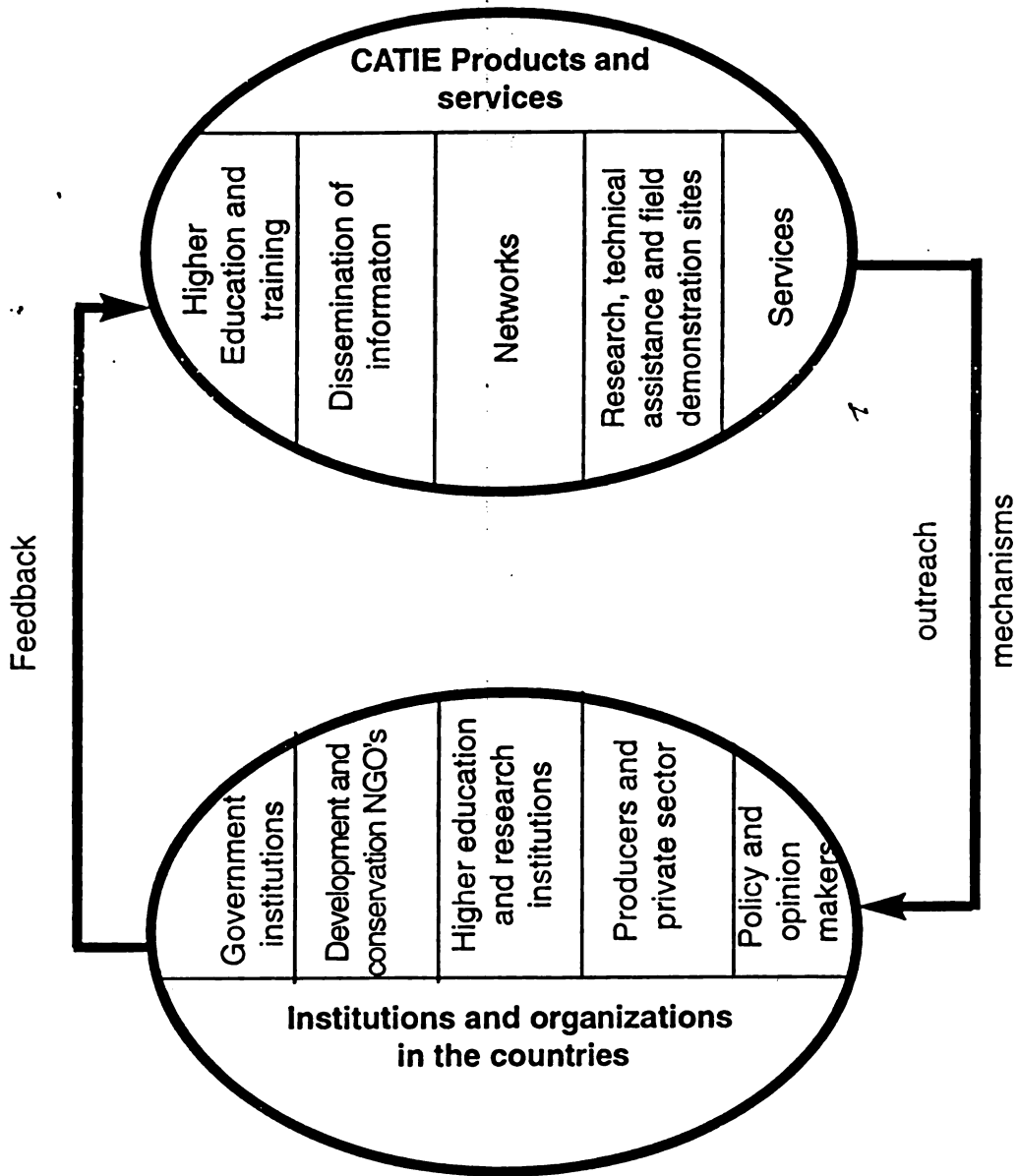
Such institutions include ministries with responsibilities for agriculture, the environment, natural resources, education and planning, the semi-autonomous and autonomous organizations, scientific and technological institutions, national-level research centers, forestry and water supply units, and rural development agencies.

\* **Development and conservation NGOs**

Links will be strengthened with development and conservation NGOs in the areas of technology transfer and training, particularly where the NGOs have a comparative advantage. Such links will aim to improve efficiency, minimize duplication of efforts, empower local people through knowledge and participation, and enhance the capability of both partners to deliver improved technologies and conservation practices.

Partner NGOs will include development groups, producer organizations, local, national and international organizations figure 1.

Fig. 1 Outreach oriented to institutional strengthening



\* **Higher education and research institutions**

A major channel through which CATIE aims to ensure sustainability in the generation, validation and adoption of improved technologies is cooperation with national higher education and research establishments. By training staff with higher education degrees and implementing joint research programs, CATIE intends to encourage a change of attitudes towards sustainable development, empower human resources through the provision of technical knowledge, and to ensure that the national system's capacity is permanently enhanced.

\* **Policy and opinion makers**

CATIE will interact with institutions dealing with policy issues and contribute to policy analysis studies. Permanent links will be maintained with policy and opinion makers at the highest levels in government, society, and the media in order to facilitate the shaping of informed opinion and policies, and to assist them in the diffusion of information.

These will include: planning departments in the relevant ministries and autonomous bodies, national and local mass media, and national systems such as university departments of policy studies.

\* **Producers and the private sector**

In the past CATIE has been mainly involved with the public rather than the private sector. To correct this traditional bias, the Center will strengthen institutional contacts with producer and other private sector organizations.

The sector includes farmer groups, local and national extension agencies, companies, intermediaries and consumer, environmental, women's, youth and indigenous groups. Special attention will be given to their involvement in networks and information systems. Feedback mechanisms will be developed in order to identify and address the problems and/or constraints of new technologies. The involvement of socioeconomic analysis establishments will be encouraged in this process.

Extension activities will concentrate on work with local extension services, producers, producer organizations and other natural resources users. This will increase community involvement in the sustainable management and use of productive agricultural and forestry resources.

### 1.3 Inputs

In order to achieve its aim of systematically strengthening outreach, CATIE will need to invest in improving and integrating its outreach activities into all phases of a development model with planning, research and technology transfer stages (Fig. 2). Specifically, investment of time and financial resources will be needed in:

**FIGURE 2. CATIE'S DEVELOPMENT MODEL**

<p><b>Phase 1 (Planning)</b></p>	<p>-Identification of local problems with regional and global implications in a highly participative approach. Identification of impact indicators, goals, and responsibilities of all parties involved. Formulation of programs for research.</p>
<p><b>Phase 2 (Research)</b></p>	<p>-Problem solving research and validation, preferably with the participation of local people.</p>
<p><b>Phase 3 (Technology transfer)</b></p>	<p>-Focusing on social and farmer's priorities, building technical knowledge and making it available to help them through: training, data bases, technical assistance, communication and extension services.</p>
<p><b>Phase 4 (National dissemination and networking)</b></p>	<p>-Building in-country and inter-country networks and collaborative links with community and farmer levels.</p>
<p><b>Phase 5 (Regional dissemination and networking)</b></p>	<p>-Establishing country-to-country links which bypass CATIE and supporting the entire network with research, training and development opportunities.</p>
<p><b>Phase 6 (International dissemination and networking)</b></p>	<p>-Building international links.</p>

- \* Supporting outreach with the necessary scientific and technical basis, with due consideration to socioeconomic and gender issues;
- \* Design of an improved, more relevant, professional higher education and training program;
- \* Developing CATIE's researchers, professors and trainers through improved human resources management, further training, sabbatical leaves, *etc*;
- \* Developing a program for strengthening links with public and private sector entities;
- \* Developing region-wide dissemination systems for information generated by CATIE and its partners, with emphasis on mechanisms that aid interpretation and understanding.

#### 1.4 Outputs and goals

The outputs expected from this investment are:

- i) The strengthening of CATIE's principal permanent partners through links with the educational programs and technology transfer processes;
- ii) An efficient, regional knowledge and information dissemination system with a high profile in the member countries;
- iii) A Center with a research agenda that is geared more to problem solving and the participation of women and minorities;
- iv) An improved educational program with a more professional orientation.

As implied in the previous section, the permanent partner organizations are expected to play an essential and increasing role in the process of generating these outputs. Goals for establishing these permanent links and involving these organizations are summarized in Figure 3 and explained as follows:

- \* **Government institutions**

A minimum of one government institution in each member country as a permanent partner by 1996, two by 1998.

- \* **Development and conservation NGOs**

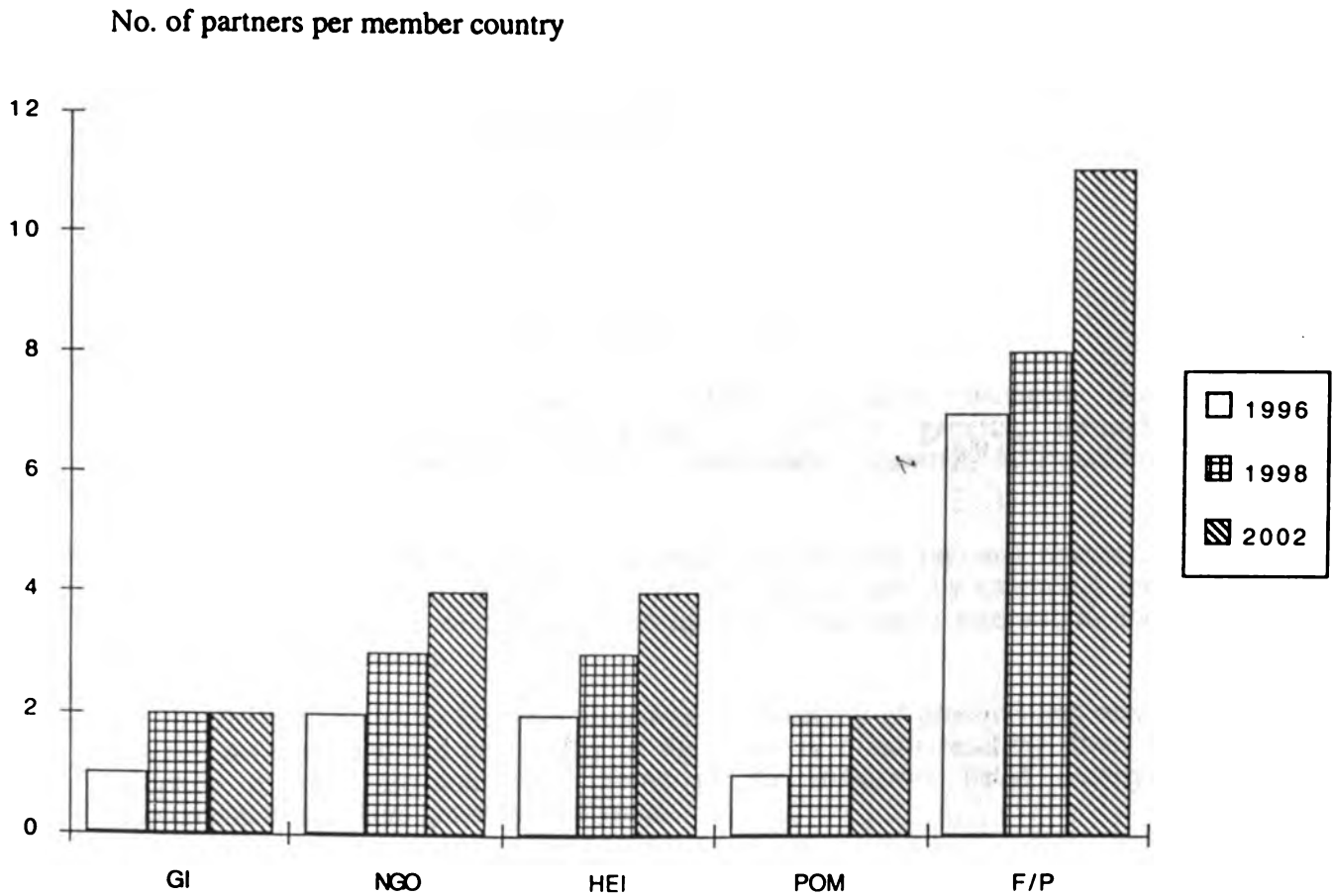
Two national level NGOs in each member country as permanent partners by 1996, three by 1998.

- \* **Higher education and research institutions**

A minimum of two higher education and research centers in each member country as permanent partners by 1996, three by 1998, and four

**A minimum of two higher education and research centers in each member country as permanent partners by 1996, three by 1998, and four by the beginning of 2002 (the final number may vary depending on how many such institutions exist in a specific country).**

Figure 3. Number of national partner organizations permanently involved in CATIE's outreach, per member country.



GI : Governmental institutions

NGO: Development and conservation NGO's

HEI: Higher education and research institutions

POM: Policy and opinion makers

F/P: Producers and private sector

\* **Policy and opinion makers**

Links with a minimum of one partner organization in each member country by 1996, two by 1998.

\* **Producers and private sector**

A minimum of one major private sector organization, two farmer groups, one national extension agency, one private natural resources user group, and two environmental, women's, youth or indigenous groups in each member country as permanent partners by 1996. By 1998 and 2002 there will be further increases.

## 2. Impact measurement and assumptions

### 2.1 Impact indicators

CATIE impacts end users in two main ways :

\* **Direct impact on natural resources managers and producers, consumers and human welfare in general, through demonstration areas, short courses, participative research, information, etc;**

\* **Indirect impact, through national and regional research, education, transfer and development institutions, and by extending the size and quality of the stock of scientific knowledge relevant to the member countries.**

The framework in Figure 4 illustrates the diversity of products and services that CATIE delivers, and the complexity of the chain of effects resulting from farmers' adoption of new technologies. Some of the indicators listed merely record implementation; others quantify its effects.

The key impact indicators are:

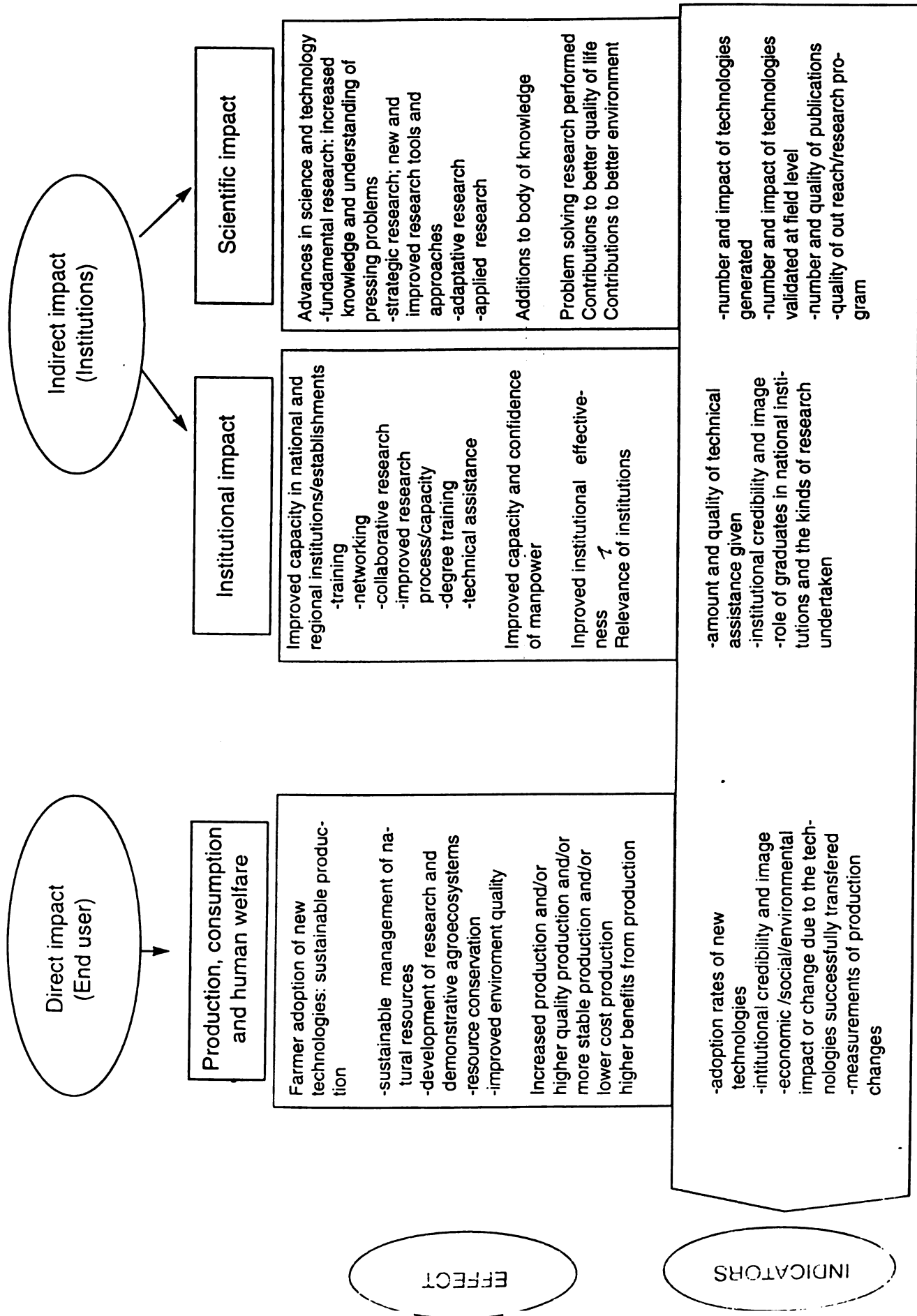
\* **Relevant permanent partners identified and links developed;**

\* **Adoption rates of practices for agricultural sustainability and appropriate natural resource management and conservation that relate to the technologies developed at or disseminated by CATIE (TDDC);**

\* **Economic, social and environmental variables (classified by gender and minority groups when applicable) of the technologies and management practices successfully transferred;**



Figure 4. A conceptual framework for CATIE's assessment of impact on end users.



\* **Quantitative and qualitative improvement rates for agricultural production and/or natural resource management and conservation due to TDDC and technical assistance provided by CATIE, for each member country and time period;**

\* **Degree of TDDC influence and technical assistance in improving the welfare of rural populations in each member country and throughout the Region.**

\* **Institutional (governmental and NGO) capacity to carry out research, training, education and outreach effectively in the field of sustainable development;**

\* **Entrance and exit profiles of graduates and trainees;**

\* **Relevant positions in national and international organizations and institutions occupied by CATIE graduates and trainees.**

\* **Improved institutional image as indicated by:**

**Number and type of requests for technical assistance received and dealt with efficiently each year for each member country, and their willingness to pay;**

**CATIE's status and degree of influence in scientific and academic fora.**

**-Number of requests received for teaching and training, and willingness to pay.**

## 2.2 Assumption and risk

The main underlying assumption of the institutional outreach plan is that:

\* **CATIE receives significant and frequent requests for its skills, products and services from member countries, in such a way that outreach will be demand driven and not dominated by supply.**

The risk is that the natural resources management demands of the member countries might lag behind CATIE's capacity and also the donor community's interests. Lack of demand is part of the global problem of stimulating sustainable development and is addressed by the proposed outreach program through the continuous feedback mechanisms established with national counterparts (particularly with permanent partners). By gradually improving CATIE's research, education, training, technical assistance and diffusion activities at the national level, the quality and quantity of the demand for what CATIE can supply, and the ability of national demand to define it, is expected to increase progressively. These same mechanisms will enable CATIE to play an important role in harmonizing the sometimes contradictory perceptions of its member countries and the donor community.

### **III: INSTITUTIONAL BUILDING**

#### **1. Socioeconomic and gender issues**

##### **1.1 Development objective**

**\* Increased proficiency in social and economic sciences, including gender issues, as they relate to education and research on sustainable agricultural production and natural resources management and conservation.**

**The immediate objectives are:**

- i) To improve CATIE's ability to adequately deal with socioeconomic and gender issues, and to increase and promote activities relating to socioeconomic issues;**
- ii) To assist partners in the member countries to fully consider such issues in the development and implementation of their education, research and extension activities.**

##### **1.2 Actions**

**Actions that will contribute to the strengthening of CATIE's capacity in socioeconomic and gender issues are:**

- \* Development of a Production and Conservation Economics Area as part of the Center's area structure;**
- \* Implementation of a policy of considering the socioeconomic and gender implications of CATIE's outreach mechanisms (technical assistance, networking, dissemination of information, higher education, training and field demonstration);**
- \* Implementation of a training program and Masters degree option in Environmental Economics and Sociology;**
- \* Sensitization and training of CATIE's staff in socioeconomic, gender and ethnic issues;**
- \* Implementation of a policy of emphasizing socioeconomic and gender awareness in CATIE's training and formal education activities at field and national levels;**
- \* Increasing the proportion of women and minorities in CATIE's professional staff.**

##### **1.3 Inputs**

**In order to improve CATIE's performance in the field of social and gender awareness, investment will be needed in improving and integrating certain key activities**

into all aspects of its operations. In particular, time and financial resources will be need to be invested in:

- \* Adequate staffing of the Production and Conservation Economics Area for both teaching and project support and evaluation functions;
- \* An affirmative action employment policy that promotes the hiring of women and minorities;
- \* A continuous monitoring system for the Center's outreach activities to insure that adequate consideration of gender and ethnic concerns is being made;

#### 1.4 Outputs and goals

The outputs that can be expected from this investment include:

- i) The consolidation of a Production and Conservation Economics Area at CATIE;
- ii) The improvement of CATIE's ability to deal with people and processes by
  - Increasing the awareness of the Center's professional staff of the socioeconomic and institutional components of sustainable development;
  - Developing an awareness and understanding of gender and ethnic problems in and outside CATIE;
  - Highlighting and promoting social participation in planning, implementation and evaluation of sustainable development projects and programs.
- iii) Increased contribution of women, indigenous people and minorities in CATIE's and partner organizations' programs.

The four main goals of this component are:

- \* A two-fold increase over 1994 levels in the proportion of women and minority professionals in CATIE's staff by the end of the year 2002.
- \* The progressive incorporation of appropriate social and economic analysis into all of the Center's natural resources management and agricultural technology development activities, beginning during the second semester of 1995. By the first semester of 1997 all such activities should include full consideration and analysis of the socioeconomic implications, including gender and minority issues;

\* To monitor and evaluate the implementation and suitability of the social and economic analysis methods being applied to these activities, beginning the first semester of 1996;

\* To hold two workshops per year for CATIE's staff on gender and minority issues, the first one taking place during the fourth quarter of 1995;

\* Create awareness of the need for inclusion of women and indigenous people in the consultation process when testing, promoting or monitoring technological innovations, beginning in 1995.

### 1.5 Impact indicators

The key impact indicators for CATIE's outputs and goals in socioeconomic and gender issue are:

#### 1.5.1 Of direct impact on CATIE:

\* Improvement of interactions between CATIE's Production and Conservation Economics Area and other technical areas;

\* Improvement in the training of women and minority ethnic groups so that they can compete more successfully in CATIE's job market;

Establishment and implementation of gender sensitive policies throughout CATIE.

#### 1.5.2 Of indirect impact on CATIE:

\* Increased demand for training, research and technical assistance in socio economic, gender and ethnic issues;

\* Positive correlation between levels of impact in solving pressing gender and ethnic issues and donor agency funded projects with a high socioeconomics and gender component.

### 1.6 Assumption

Enough women and minority candidates apply for and have adequate qualifications for filling posts in the Center and partner institutions to allow affirmative action to make an impact on staffing ratios.

**TABLE 2. SOCIOECONOMIC AND GENDER ISSUES: LOGICAL FRAMEWORK FOR CATIE'S APPROACH**

OBJECTIVES	STRATEGIES	ACTIONS	INDICATORS
<p>Ensure that CATIE routinely and systematically incorporates socioeconomic and gender issues in its actions.</p>	<p>Consolidate and organize CATIE's activities related to socioeconomic, management and gender issues.</p>	<p>Train CATIE's staff from the technical areas and projects, and collaborators in the various countries, in socioeconomic management and, minorities and gender issues.</p> <p>Put into operation a Master's degree emphasis and a training program in Environmental Economics and Sociology.</p> <p>Give higher priority to gender and minorities issues.</p>	<p>Number and institutional impact of training events, aimed at CATIE's staff and collaborators: workshops, short courses, seminars.</p> <p>The number of Master's students reading for the degree emphasis in Environmental Economics and Sociology.</p> <p>More women and minorities as CATIE employees and students.</p>
<p>Promote an integrated approach to sustainable agricultural development and the management of natural resources, in such a way that full consideration is given to socioeconomic and gender concerns.</p>	<p>Promote the inclusion of socioeconomic and gender aspects in all spheres of action of CATIE's technical area.</p> <p>Encourage a wider public participation (especially local groups) in critical spheres of action of CATIE's technical area</p>	<p>Strengthen and coordinate socioeconomic, management, gender and participatory aspects of research programs of CATIE's technical area.</p> <p>Analyze the strategies of CATIE's present projects, and on this basis define and help implement a CATIE's policy paper on socioeconomic, gender and participatory aspects.</p> <p>Stimulate the participation of a wider cross section of the public in defining CATIE's policies and strategies, in such a way that CATIE's activities reflect the needs felt to be priorities in society.</p> <p>Consultative workshops in which different sectors of the public (including community based groups), express their needs in relation to CATIE's research, training and education programs, in particular on socioeconomic, gender and participatory issues.</p> <p>Identify and implement mechanisms for strengthening links between CATIE and the private sector.</p> <p>Establish agreements and joint execution of projects with governmental organizations, NGOs, and community based groups, focusing on socioeconomic, gender and participatory issues.</p>	<p>Degree to which socioeconomic, gender and participatory issues are contributing to technical recommendations and activities of CATIE's Technical Area.</p> <p>Number and institutional impact of events involving the exchange of experiences between CATIE's programs and projects, in issues related to socioeconomic, management, gender and participation.</p> <p>A report that summarizes, analyzes and systematizes the strategies of CATIE's present programs and projects.</p> <p>Clear and consistent inclusion of the public's and donors point of view in the policy paper: "Definition of Policies and Strategies at CATIE".</p> <p>Preparation of a report, "Definition of Policies and Strategies at CATIE", on issues related to socioeconomic, gender and participation.</p> <p>Number, relevance and effectiveness of CATIE's mechanisms and agreements related to socioeconomic and gender issues.</p>

## 2- Human resources

CATIE's past, present and future relevance in the Region depends on the quality of its human resources. It is CATIE's professional staff that have been and will continue to be the main agents of the Center's impact in the Region.

### 2.1 Institutional development objective

\* To increase the quality and effectiveness of CATIE's human resources.

The Center's immediate objectives are:

- i) To attract scientists and professors with a wide range of experience and high academic qualifications;
- ii) Create a quality professional environment to enhance retention of the best scientists, technicians and professionals.

### 2.2 Actions

To achieve its objectives in this area it will be necessary to:

- \* Design and implement a well defined strategy for recruitment of human resources;
- \* Design and implement a career development system for the Center's personnel.

### 2.3 Inputs

In order to improve CATIE's performance in recruitment and retention of personnel, investment of time and financial resources will be required in the following key areas:

- \* Improving the opportunities for building a career with the Center by providing stability, a good salary, special rewards for excellence, career advancement based upon merit, and other means;
- \* Introducing and refining an efficient goal-oriented personnel evaluation system. Promotion to take account of performance, years of service and particular merits;
- \* Improving social benefits of the professional staff, with high priority placed on very attractive retirement benefits.

### 2.4 Output and goals

Investment in human resources will produce a hiring policy and a career system that attracts and retains highly qualified scientists and professors. Table 3 summarizes the Center's main policies for the different categories of personnel.

**TABLE 3. HUMAN RESOURCES POLICIES AT CATIE**

STRATEGIES	PPP	PPA	PA	FIELD WORKERS
PROFESSIONAL ADVANCEMENT	-Sabbatical leave	-Study leave -Payment of registration fees -Short courses	-Study leave -Short courses -Payment of registration fees	-Short courses -Payment for registration in education
MOTIVATION THROUGH ATTRACTIVE REMUNERATION PACKAGE	-Remuneration for administrative responsibility -Annual scale increment -Professional career -Subsidized housing -Excellent health, dental and life insurance benefits -High adjustment for education, housing and quality of life benefits	-Payment for exclusiveness -Remuneration for administrative responsibility -Professional Career -Dental services -Half-yearly scale increment -Subsidy for schooling -Subsidized housing	-Payment for extra time -Payment for extra duties -Dental services -Half-yearly scale increment -Subsidy for schooling	-Payment for extra time -Dental services -Half-yearly scale increment -Subsidy for schooling
MOTIVATION THROUGH CREATION OF ATTRACTIVE WORKING CONDITIONS AND ENVIRONMENT	-Acknowledgement for effort -Option for tenure depending on performance level (after 10 years) -Improvement of working environment which allows the development of self esteem, professional fulfillment -Encourage professional development in research and teaching -Encourage development of sociocultural activities and institutional team spirit -More social events aimed at contributing to institutional bonding -Establish a gym and physical health program	-Creation of a good working environment which allows the development of self esteem, communication, etc. -Encourage professional development in research and teaching -Sociocultural activities to encourage identification with the institution -Institute group meetings with the Director General in order to communicate ideas and concerns. -Acknowledgement of good work using remuneration, awards, special events, and other benefits -Promote sports competition with students	-Creation of a good working environment which allows the development of self esteem, communication, abilities, etc. -Encourage professional development in research and teaching -Sociocultural activities to encourage identification with the institution -Acknowledgement of good work using remuneration, awards, and other benefits -Strengthen ASECATIE, APROCATIE -Sports competition with students	-Creation of a good working environment which allows the development of self esteem, communication, abilities, etc. -Sociocultural activities to encourage identification with the institution -Acknowledgement of good work using remuneration, awards, social encounters, and other benefits -Strengthen CPT
EVALUATION	-Annual Evaluation	-Annual Evaluation	-Annual Evaluation	-Annual Evaluation

PPP: Professional Staff.

PPA: Professional Assistant Staff.

PA: Support Staff.



The main goals are:

- \* To implement an employment structure incorporating incremental increases in job security. Over a ten year period, professional staff will progress from an initial two-year trial period to a three year renewal, to a five year pre-tenure appointment and, finally, to permanent tenured appointment, subject to recommendation by an evaluation committee of peers;
- \* To halve the 1994 turnover rate of every four to five years for professional staff by the year 2002.

## 2.5 Impact Indicators

The key impact indicators for measuring success in improving CATIE's human resources are:

### 2.5.1 Of direct impact on CATIE's personnel:

- \* The implementation of hiring policies that pay particular attention to gender and indigenous representation;
- \* **Establishment of a an efficient career development policy and related actions.**
- \* Increased staff quality and qualifications;
- \* Increased staff motivation and *esprit de corps* in relation to CATIE's effectiveness, institutional philosophy, policy and vision;
- \* Reduction in the average turnover rate of personnel.

### 2.5.2 Of indirect impact on CATIE:

**-Increasing numbers of high quality technical staff recruited and retained, for each period of time;**

**-Number and quality of long term research lines maintained, for each period of time.**

## 2.6 Assumptions

Three main assumptions underlie the effectiveness of this component:

- \* That enough candidates of the highest ability apply to CATIE's positions;
- \* That CATIE's human resource policies will be properly backed up by sustainable financial resources;
- \* That regional and national living conditions remain attractive for international staff.

### 3- Infrastructural Improvement

Institutional development in CATIE also implies the renewal, maintenance and modernization of its existing infrastructure. Depending on needs and resources, new infrastructure may be contemplated, especially when this leads to additional environmental benefits.

The following are the main infrastructural areas, in order of priority, although improvements in all areas will be made simultaneously subject to the resources needed:

- \* **Library:** the Orton Commemorative Library's bibliographic materials and equipment will be updated, its processes computerized and new outreach methods will be developed starting in the first semester of 1996. Yearly maintenance of the building and equipment will be guaranteed.
- \* **Communication facilities and the Computer Center:** the information management systems and equipment will be updated or renewed as needed, and upgraded for training and demonstration purposes. Telephone equipment and other communication services will be upgraded starting in 1996.
- \* **Laboratories:** all laboratories (soil, nutrition, physiology, plant protection, computing, greenhouses, geographical information systems, biotechnology, seeds and others) will be gradually renewed and/or updated, properly equipped and maintained every year.
- \* **Educational buildings:** yearly maintenance and the acquisition of new audiovisual equipment.
- \* **Experimental areas, field facilities and commercial farm:** these will be given adequate maintenance. Reforestation of the steeper slopes on CATIE's farmland will start during the second semester of 1996. Protocols and systems for the use, management and disposal of agrochemicals will be introduced.
- \* **Staff and student housing facilities:** adequate maintenance will be guaranteed.
- \* **Office buildings:** maintenance will be guaranteed and appropriate equipment purchased.
- \* **Campus:** maintenance will be guaranteed, a recycling program for garbage and paper products will be started, and a smoke free environment will be gradually introduced by the year 1996.
- \* **Furniture, vehicles and office equipment** will receive preventive maintenance and will be upgraded when necessary. Programs to save water and energy, and to reduce the consumption of other goods, such as paper and paper products, will be implemented by the year 1996.

#### **4- Management and administration**

##### **4.1 Institutional development objective**

**CATIE's management and administration will achieve:**

**\* The transparent management of funds, completely open to donor scrutiny, and an allocation and use of resources that is indisputably efficient.**

##### **4.2 Actions**

**The goal of completely transparent and efficient use of funds will require CATIE's higher level management and administration to further develop current policies aimed at:**

**\* The decentralization and sharing of decision making power and administrative management responsibilities with the different organizational layers of CATIE. New management procedures should be in place by the first semester of 1997 and will be revised every two years;**

**\* The updating of all relevant manuals and regulations for institutional procedures;**

**\* The establishment of efficient and secure financial and human resources management and allocation systems, open to donor scrutiny;**

**\* The promotion and support of inter-program, and inter-institutional cooperation;**

**\* Encouraging external evaluations and auditing by donors in addition to the current practice of external and internal audits managed by the Center;**

**\* The modernization of administrative and service areas such as internal security, general services, transportation, janitorial services, maintenance, housing, and telecommunications, to achieve higher efficiency and quality of service.**

##### **4.3 Indicators**

**The key impact indicators for this component of CATIE's Development Plan are:**

**\* Degree of decentralization of decision making and management;**

**\* Appropriate management and allocation of core budget in relation to the Center's priorities;**

\* An improved image of CATIE management and administrative ability in partner organizations, opinion forming groups and international donor agencies.

## **IV: FINANCIAL AND OPERATIONAL SUSTAINABILITY**

### **1. Financial sustainability strategy**

#### **1.1 Institutional development objective**

**\* To achieve a high degree of financial stability and independence for the Center.**

**The corresponding immediate objectives are:**

**i) To improve CATIE's image and the sense of ownership in the member countries. This is expected to result in increases in the number and the amount of member countries' yearly contributions to CATIE;**

**ii) To increase CATIE's income-generating scientific and commercial activities, and services;**

**iii) To increase the degree of institutional independence from outside funding sources.**

**In 1994, 70% of CATIE's resources came from projects and only 30% from its own core budget. The Center will continue the start made in achieving a better balance between these two funding sources, ideally in the order of 50/50 by the year 2002 (Figure 5).**

#### **1.2 Actions**

**CATIE has designed a plan for its financial sustainability (Table 4). The most important actions needed to implement this plan are:**

**\* Securing the current member countries' annual contributions to CATIE;**

**\* Increasing the number of regular and adherent members until all the countries of the American tropics are regular members and the Center's main partners in sustainable development are adherent members;**

**\* Continuously attracting new projects and contracts for research, training and development activities, and services. Perfecting a project monitoring scheme to detect and correct under-performance;**

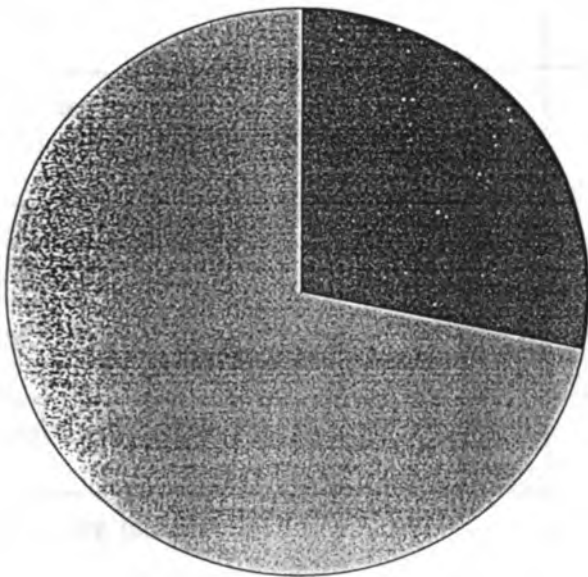
**\* Increasing the capital content of the CATIE endowment fund managed by the Center's Foundation;**

**\* The creation of chairs or professorships financed by international institutions, organizations or agencies, the private sector, and foundations;\*** **To increase income from commercial productive activities, including the farm, using the most advanced sustainable techniques and practices;**

Figure 5. Core budget and project funding contributions to overall CATIE budget, 1994-1995

1994

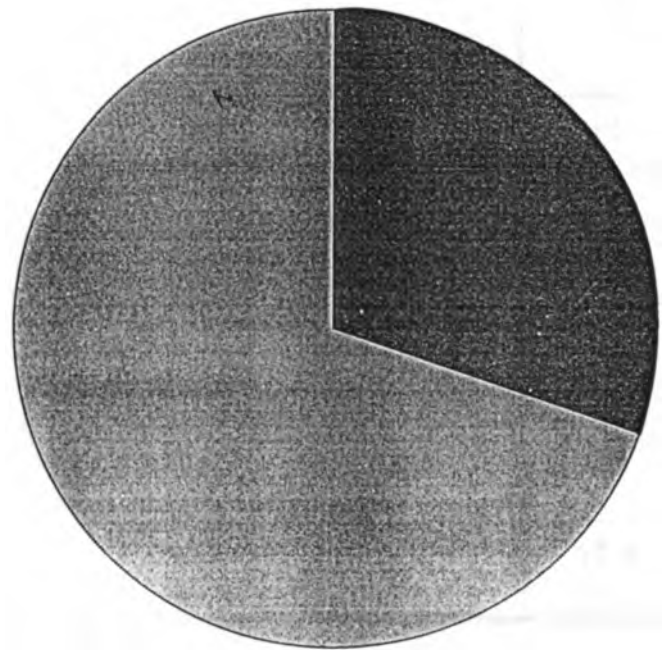
Core budget: 30.3%



Projects: 69.69%

1995

Core budget: 32.62%



Projects: 67.38%

**TABLE 4. CATIE's FINANCIAL SUSTAINABILITY PROJECTIONS (US\$ MILLIONS/YEAR)**

<b>YEAR STRATEGY</b>	<b>1994 (BENCHMARK)</b>	<b>1995-1998</b>	<b>1999-2002</b>	<b>TOTAL YEAR 2003</b>
<b>Project overhead</b>	0.86	1.0	1.2	1.2
<b>Income from the endowment fund</b>	0.5	0.7	1.4	1.4
<b>Member fees</b>	1.75	1.9	3.0	3.0
<b>Services</b>	1.2	1.4	1.6	1.6
<b>Professorships created at Graduate School</b>	0	0.5	1.0	1.0
<b>Farm net income from commercial production</b>	0.3	0.5	0.6	0.6
<b>Sale of information</b>	0	0.1	0.5	0.5
<b>Donor support to core budget</b>	0	2.0	3.0	3.0
<b>Donations from private sources</b>	0	0.05	0.1	0.1
<b>Total core budget*</b>	4.11	8.15	12.5	12.4

Constant US\$ (1994).

- \* The sale of technical and scientific information on agriculture and integrated natural resources management.

### 1.3 Inputs

Investment of time and financial resources will be needed in order to achieve these improvements. High priority for investment are:

- \* Designing and implementing measures aimed at increasing the operational, technical and administrative efficiency of an increasing number of projects;
- \* Increasing efforts aimed at strengthening relationships with member countries, donors and collaborators, and improving public relations and communication programs;
- \* Streamlining and providing administrative and managerial support for project preparation, to enable the submission of better, well targeted and more attractive proposals;
- \* Implementing measures aimed at improving entrepreneurial capability in activities with current or potential commercial possibilities, for handling marketing of products and services, and if appropriate the patenting of innovations.

### 1.4. Output and goals

The main outputs produced by this investment will be:

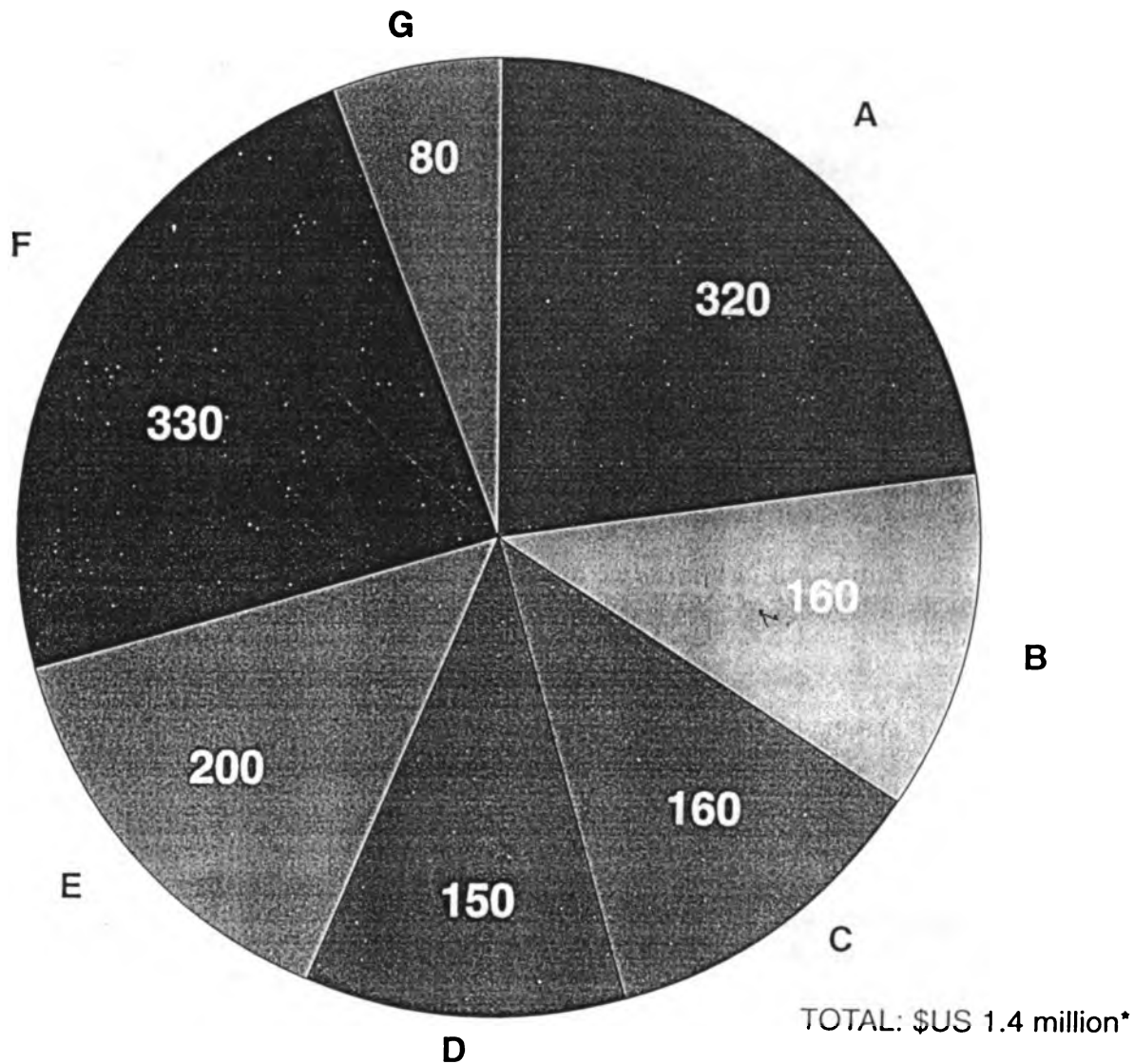
- \* Strengthened core budget;
- \* Increased long-term support of priority CATIE activities by donors or partners;
- \* Strengthened endowment fund.

To this end, some of the goals are:

- \* A revised fee structure for regular member countries based on the size of their economy, by the year 1997;
- \* Management of an endowment fund of US\$10m by 1998, and of US\$20m by 2002. The earnings will partly or completely finance various endeavors of the Center (Figure 6);
- \* The creation of two internationally funded chairs or professorships by the year 1998 and two more by the year 2002, at a cost of US\$250,000 each;



**Figure 6. Proposed distribution of expenses from CATIE's endowment fund, by the year 2002 (amounts in thousands US\$)**



- A - \$320:** 4 international professionals (\$80,000/each)
- B - \$160:** 6 national professionals (\$26,660/each)
- C - \$160:** 10 graduate scholarships (\$16,000/each)
- D - \$150:** 3 strategic training courses ( \$50,000/each)
- E - \$200:** Research and outreach
- F - \$330:** Maintenance of facilities
- G - \$80:** Institutional modernization (new equipment)

\* Assumes US\$ 20 m invested and earning a 10% return per year, and the use of 70% of that return for a total usable income of: \$1.4 m/year.

\* Enhanced commercial earnings contributing to the financing of CATIE's Graduate School, at a minimum rate of US\$500,000 per year, starting in 1995;

\* Income of US\$100,000 per year by 1997 and US\$500,000 per year by 2002 from the sale of scientific and information services;

\* 20% and 25% of CATIE income, during the years 1995-1998 and 1999-2002 respectively, will come from member countries' contributions, project overhead, sale of services and the commercial farm.

### 1.5 Impact

The main impact of CATIE's financial independence and operational strengthening will be on the continuity and improvement of the programs and technical services that the Center provides in the American tropics, particularly to member countries.

#### **1.5.1 Of direct impact on CATIE's financial and operational sustainability:**

\* The proportion of the investments of CATIE's research, education, training, and outreach activities that are funded from core budget will rise to 50% and 70% during the years 1995-1998 and 1999-2002 respectively;

\* Increased demand for CATIE services from member countries;

\* The proportion of CATIE's professionals paid by core budget will rise.

\* Long term planning and sustainable implementation of research lines, technical assistance and educational programs, in the member countries;

\* Percentage of yearly enhanced earnings resulting from the member countries, commercial farm, the sale of services and FUNDATROPICOS;

\* Rate of increase of CATIE's yearly earnings resulting from the institutional endowment fund.

#### **1.5.2 Of indirect impact on CATIE's financial and operational sustainability:**

\* Increasing yearly demand for CATIE's commercial goods and technical services;

\* Amount contributed by donor agencies to CATIE's endowment fund.

## 1.7 Assumptions

- \* CATIE's Board of Directors and Council of Ministers approves a new fee structure for regular member countries;
- \* The member countries and the international community of donor agencies will place a growing value on CATIE's services.

## 2. Cooperation with member countries

### 2.1 Institutional development objective

The fundamental reason for CATIE's existence is the service it provides to member countries and the tropical American region through research, teaching and outreach. The quality and quantity of CATIE's cooperative activities with its member countries and the level of presence CATIE can maintain there, are critical parameters of the Center's success. The perception in some quarters of weakness in these areas must be addressed as part of a general objective to:

- \* Improve CATIE's image and effectiveness in the member countries and internationally.

The immediate objectives are:

- i) To strengthen CATIE's presence and effective cooperation with national organizations, public or private, in the member countries;
- ii) To increase the number and quality of research, educational and outreach activities, and joint ventures with national and international institutions in the member countries;
- iii) To ensure that CATIE's successes in research, education and outreach receive prominence in national and international fora, and the media.

### 2.2 Actions

To achieve these objectives, it will be necessary to change or refocus aspects of CATIE's traditional *modus operandi*:

- \* Increased operational decentralization of CATIE's activities at headquarters, in favor of the member countries;
- \* The hiring of additional personnel to be based in the member countries, initially with responsibility for groups of member countries. The presence this creates will lead to better coordination of country-level activities and create an improved mechanism for identifying new projects and opportunities for collaboration;
- \* Two or three person task forces drawn from experienced CATIE personnel to carry out a two-week analysis of CATIE

cooperation in each member country. Key areas for strengthening technical and educational links both within the country and between country-based activities and headquarters identified by the task force.

- \* Strengthen the Office of External Cooperation in charge of institutional planning and monitoring, public relations, marketing of CATIE, and development of a corporate image within the member countries and elsewhere;
- \* CATIE upper management to visit key institutions and permanent partners in member countries on a regular basis;
- \* Increase the presence of CATIE professional staff in national, regional and international congresses and meetings; adapt representation to needs and opportunities of specific meeting;
- \* Measures taken to increase CATIE profile in the scientific, educational and development oriented mass media;
- \* Encourage the development of internationally recognized excellence in key fields of CATIE endeavors.

### 2.3 Inputs

All except the last of these objectives necessarily require some measure of additional funding in order to be achieved. Particularly, investment will be needed in:

- \* Travel budget and increased managerial support to enable more frequent oversight of CATIE's relations with member countries and permanent partners;
- \* Travel budget and managerial support to enable task force country studies;
- \* Communications technology and running costs, and information systems development to enable decentralized functions to retain good integration with overall regional activities and management;
- \* Personnel, support staff and operating costs for new member country-based activities;
- \* Performance incentives for encouraging high rates of publication and participation in professional fora: travel budget to enable attendance in more regional and international meetings;
- \* Training of professional personnel in media communication skills and scientific journalism in English and Spanish.

### 2.4. Outputs and goals

The main outputs of this investment will be a better match between member countries' demand and current CATIE supply of services, an increase in CATIE's responsiveness to national needs and opportunities, improved quality of CATIE's offer of services, and wider recognition, improved credibility and image both within and outside the region.

The corresponding institutional goals are:

- \* At least 20% of CATIE's international personnel's duties will involve responsibilities in research and validation in collaboration with national institutions in the member countries by the year 1998, and 25% by the year 2002;
- \* By March 1996 member country task force reports will be completed. Implementation of main recommendations to be initiated by July 1996;
- \* By July 1996 at least three staff members will be stationed in three different member countries. Depending on the results of the task force reports, more may be added at a later date or alternative country cooperation mechanisms implemented;
- \* Three publication quality reports on key CATIE activities ready for submission to international scientific, educational or development oriented popular journals by March 1996.

**2.5 The key impact indicators for the outputs and goals of CATIE's cooperation with member countries are:**

- \* An increase in the level of institutional acceptance, relevance and credibility in member countries, according to national authorities, beneficiaries and permanent partners, over a given time (done through polls);
- \* Level of satisfaction in the amount and effectiveness of technical assistance, technology transfer and other services that CATIE' staff render, for each member country and time period, as measured by agreed quality criteria;
- \* Payment of yearly fees to CATIE by member countries, and increase in the number of member countries.
- \* The number of requests received and dealt with efficiently, either at national level or at headquarters for each member country.

## 2.6 Assumptions

It is assumed that:

- \* A program of investment aimed at increasing CATIE's presence in the member countries can bring about improvements in effectiveness and create a favorable perception of the Center.
- \* CATIE's key activities are of interest to the international scientific, educational and development media.

## 3. Strategy for the transformation of key functions of strategic projects into permanent action lines in CATIE's Technical Areas.

### 3.1 Institutional development objective

CATIE's impact and credibility in the member countries would be strengthened if the continuity of strategic projects could be guaranteed. Currently, CATIE mainly operates through externally-funded, fixed-term projects and, when projects finish, the personnel are lost, field and community activities are terminated, and many of the cooperative relationships that have been established are abandoned. Financial stability is a prerequisite of operational stability and, at present, CATIE is not financially able to continue most of the actions initiated by projects. A vicious circle operates: lack of operational stability has a negative effect on CATIE's image and long-term credibility, and lack of credibility and poor image negatively affects CATIE's ability to attract funding and hence achieve operational security.

It is clearly in CATIE's interests to break this circle and therefore CATIE has as an overall objective:

- \* To convert or merge key functions of current strategic projects into ongoing action lines and assign them funding so that they have increased financial and operational stability.

The immediate objectives are:

- \* To incorporate key personnel, unfinished or long-term research, training and technical assistance activities of current strategic projects as ongoing action lines of the Center's Technical Areas;
- \* To guarantee the long-term funding of ongoing action lines through CATIE's core budget.

### 3.2 Actions

CATIE proposes to bring about the transition of strategic projects into ongoing action lines through the following process (Fig. 7).

- \* Phase 1: Planning

The Center will identify those projects or project components considered to be of strategic importance to the Center, the Region and donors.

- a. Have been directly requested by member countries;
- b. Have been identified as high priority areas in international accords to which member countries are signatories;
- c. Are in accordance with CATIE's priorities;
- d. Have clear national or regional relevance for sustainable development;
- e. Are backed by donor commitment to long-term funding;

\* **Phase 2. Creating an institutional niche**

The Technical Areas will create an institutional niche for strategic projects that are to be incorporated as ongoing action lines. CATIE core budget resources will be used to put in place the human resources and infrastructure needed for guaranteeing their continuity.

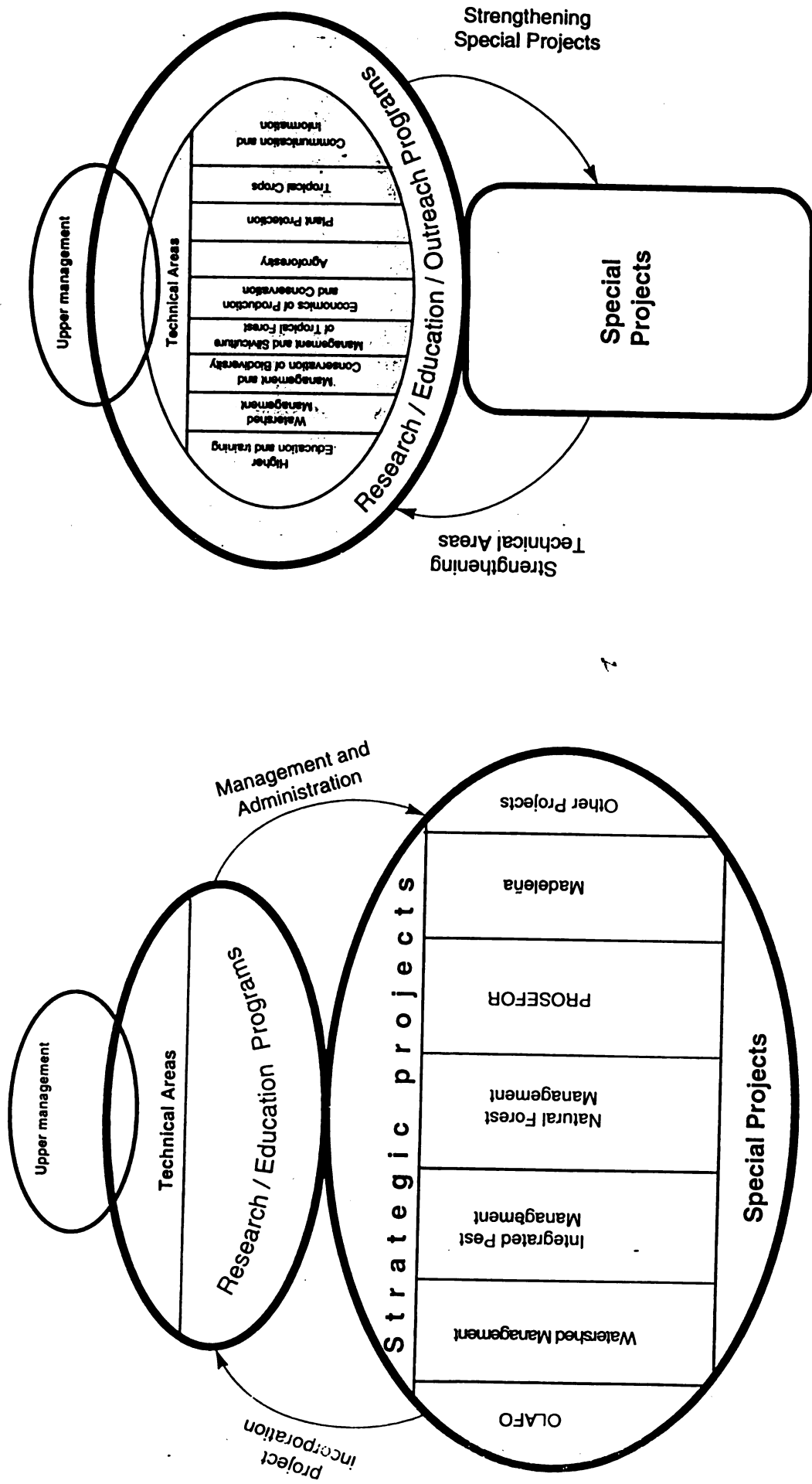
\* **Phase 3. Earmarked funding for specific strategic projects**

In addition to direct CATIE core budget funding of ongoing action lines, donors may earmark funds contributed to core budget (or arising from donations to the institutional endowment fund) for long-term support of specific areas of work. These "restricted" core budget funds could for example be destined for areas the donor wishes be continued when project funding comes to an end. The emphasis would however be on strengthening CATIE's Technical Areas rather than continuing projects by another name.

\* **Phase 4. Phasing action lines into the Technical Areas.**

When funding has been allocated to a line of action, it can be phased out of a fixed-term project's work plan and phased into the relevant technical Area. Lines of work that have no funding allocation in the technical Area will be phased out when project funding ends.

Figure 7 Strengthening of CATIE's technical Areas by transforming strategic projects into ongoing lines of action.



1994

1998



**\* Phase 5. Personnel transfer**

The number of personnel that transfer from project to core budget funding will be in proportion to the funding allocation, regardless of its source. CATIE's priority objective in transferring personnel is to strengthen its Technical Areas, not the continuation of projects at any cost.

**\* Phase 6. Further strengthening of the Technical Areas**

The personnel transferring to the Technical Areas will assume responsibility for selected ongoing action lines and give continuity to at least some of the expertise acquired during the life of a former project. In addition, they will be responsible for developing the action lines as part of the Area's priority system, thus leading to new opportunities being identified and funded.

### **3.3 Inputs**

The extent to which it will be possible to absorb strategic project activities as action lines in the Technical Areas will be in direct proportion to the funds that are available. CATIE's policy and the actions it can take for strengthening the core budget situation have been presented elsewhere in this report. Additional improvements in the core budget situation and income from the endowment fund are mostly dependent on commitments by donors. Inputs for this process are therefore heavily biased towards financial aspects.

- \* A system for identifying priority action lines (Tables 5 and 6) and optimal staffing levels that is periodically updated to reflect changing demands and realities;**
- \* Core budget funding for key functions of the Technical Areas;**
- \* Adequate investment in infrastructural and outreach development;**
- \* Financial support of core budget or endowment fund by donors.**

### **3.4 Outputs and goals**

Outputs from progressive investment in assimilating key action lines into the Technical Areas will be:

- \* Improved credibility and cooperation with member countries and funding agencies;**
- \* More balanced and relevant programs in research, education, outreach;**

**TABLE 5. ACTION LINES OF CATIE'S TECHNICAL AREAS AND HUMAN RESOURCES REQUIREMENTS. NATURAL RESOURCES INTEGRATED MANAGEMENT PROGRAM, 1995-2002\***

TECHNICAL AREA	ACTION LINES	NUMBER OF PRINCIPAL STAFF AND AREA OF SPECIALIZATION, YEAR 2002 (CORE BUDGET PERSONNEL)	HUMAN RESOURCES (CORE BUDGET) 1994 1995-1998 2002
Waterbed Management	<ul style="list-style-type: none"> <li>a) Watershed rehabilitation planning</li> <li>b) Land use classification methods</li> <li>c) Hydrology</li> <li>d) Soil conservation practices</li> <li>e) Socioeconomic analysis and outreach methods</li> <li>f) Demonstration waterbeds</li> <li>g) Satellite imaging</li> <li>h) National institution development</li> </ul>	<ul style="list-style-type: none"> <li>2 water and soil specialists</li> <li>1 hydrologist</li> <li>2 GIS specialists</li> <li>1 technology transfer specialist</li> <li>1 natural resources economist</li> </ul>	<ul style="list-style-type: none"> <li>4</li> <li>7</li> </ul>
Management and Conservation of Biodiversity	<ul style="list-style-type: none"> <li>a) Wetlands</li> <li>b) Non-timber products</li> <li>c) Biodiversity inventories</li> <li>d) Socioeconomic studies</li> <li>e) Community mobilization</li> <li>f) National institution development</li> <li>g) Protected areas planning</li> <li>h) Protected areas management</li> </ul>	<ul style="list-style-type: none"> <li>2 biologists</li> <li>1 community organization/outreach specialist</li> <li>1 economist</li> <li>2 protected areas/wetlands specialists</li> <li>1 ecologist</li> <li>1 wetlands specialist</li> <li>1 medicinal plant specialist</li> </ul>	<ul style="list-style-type: none"> <li>2</li> <li>6</li> <li>9</li> </ul>
Management and Silviculture of Tropical Forest	<ul style="list-style-type: none"> <li>a) Natural forest ecology</li> <li>b) Silviculture</li> <li>c) Reforestation</li> <li>d) Forest productivity studies</li> <li>e) Highland forest management</li> <li>f) Lowland forest management</li> <li>g) Forestry outreach</li> <li>h) Validation of species in agroforestry systems</li> <li>i) Genetic resources conservation</li> <li>j) Genetic improvement of tropical timber species</li> </ul>	<ul style="list-style-type: none"> <li>2 Multi-purpose tree silviculturists</li> <li>2 natural forest managers</li> <li>1 economist</li> <li>1 forest policy specialist</li> <li>1 geneticist</li> <li>2 modelling/MIS specialists</li> <li>1 forest ecologist</li> <li>1 technology transfer/communication/outreach specialist</li> <li>1 sociologist/anthropologist</li> </ul>	<ul style="list-style-type: none"> <li>2</li> <li>8</li> <li>12</li> </ul>
Economics of Production and Conservation	<ul style="list-style-type: none"> <li>a) Ecological/economic sustainability in tropical systems</li> <li>b) Social organizations and their impact on environmental sustainability</li> <li>c) Project identification, design and management, related to the environmental and integrated natural resources management</li> <li>d) Cultural and organizational basis for behavioral changes</li> <li>e) Gender issues and environmental development</li> <li>f) Economic value of environmental processes at the macro and micro levels</li> </ul>	<ul style="list-style-type: none"> <li>2 economists</li> <li>1 sociologist/anthropologist</li> <li>1 gender issue specialist</li> <li>1 environmental accountant</li> </ul>	<ul style="list-style-type: none"> <li>1</li> <li>2</li> <li>5</li> </ul>
Subtotal		<ul style="list-style-type: none"> <li>5</li> <li>20</li> <li>33</li> </ul>	

\* does not include Director General, Deputy Director General, Head of External Cooperation and Strategic Planning, Program Director, Executives in Education for Development and Conservation.

**TABLE 6. ACTION LINES OF CATIE'S TECHNICAL AREAS AND HUMAN RESOURCES REQUIREMENTS. SUSTAINABLE AGRICULTURE PROGRAM, 1995-2002\***

TECHNICAL AREA	ACTION LINES	NUMBER PRINCIPAL STAFF AND AREA OF SPECIALIZATION; YEAR 2002 (CORE BUDGET PERSONNEL)	HUMAN RESOURCES (CORE BUDGET)		
			1994	1995-1998	1999-2002
Agroforestry	<ul style="list-style-type: none"> <li>a) Nitrogen fixing trees</li> <li>b) Silvopastoral systems</li> <li>c) Validation practices with small farmers</li> <li>d) Alley cropping</li> <li>e) Forage trees</li> <li>f) Soil and nutrient loss</li> <li>g) Interactions (soil, light, crops, trees) in ecosystems</li> <li>h) Home gardens</li> </ul>	<ul style="list-style-type: none"> <li>1 soil specialist</li> <li>1 agricultural economist</li> <li>1 silvopastoralist</li> <li>2 agroforesters</li> <li>1 economist</li> <li>1 sociologist</li> </ul>	4	6	7
Plant Protection	<ul style="list-style-type: none"> <li>a) IPM practices for pests of regional importance</li> <li>b) Microbial and biological control of key pests</li> <li>c) Cover crops</li> <li>d) Crop management</li> <li>e) IPM implementation in cropping systems</li> <li>f) Pesticide management</li> <li>g) Environmental impacts of crop protection</li> </ul>	<ul style="list-style-type: none"> <li>1 plant pathologist</li> <li>1 weed scientist</li> <li>1 entomologist</li> <li>1 nematologist</li> <li>1 pesticides management specialist</li> <li>1 economist/technology transfer specialist</li> <li>1 biological control specialist</li> </ul>	1	6	7
Tropical Crops	<ul style="list-style-type: none"> <li>a) Genetic improvement</li> <li>b) Biotechnology applications</li> <li>c) Management and conservation of plant genetic resources</li> <li>d) Germplasm evaluation</li> </ul>	<ul style="list-style-type: none"> <li>2 plant breeders</li> <li>1 geneticist</li> <li>2 agronomists</li> </ul>	5	5	5
Communication and Information		<ul style="list-style-type: none"> <li>1 journalist</li> <li>2 communications specialists</li> <li>2 MIS specialists</li> </ul>	2	3	5
Subtotal			12	20	24
Grand total (Tables 5 and 6)			17	40	57

\*Does not include Director General, Deputy Director General, Head of External Cooperation and Strategic Planning, Program Directors, Executives in Education for Development and Conservation Program (except Communications Unit).

\* A greatly strengthened higher education program as a result of a stable academic staff and a long-term commitment to courses;

\* An enhanced institutional approach to sustainability challenges based on the experience generated by CATIE's strategic projects;

\* Lower unit administrative costs and better quality management because of more uniform and stable administrative procedures;

The goals of the process are:

\* The progressive incorporation of priority action lines into CATIE's Technical Areas and the concomitant dedication of core budget resources to supporting them. The goals in terms of timing and distribution by Technical Area follow the timetable for deployment of human resources summarized in Tables 5 and 6;

\* The assimilation of the key functions of 3 priority projects into the CATIE's Technical Areas by 1998 and 3 more by 2002.

Table 7 includes additional managerial personnel. CATIE aims to achieve a ratio of support staff to international level professional personnel of 2 to 1.

**3.5 With respect to CATIE's strategy for the transformation of key functions of strategic projects into permanent action lines in the Technical Areas, the key impact indicators for its outputs and goals are:**

\* **Degree of consolidation of action lines within Technical Areas on a permanent basis, and their responsiveness to member countries' needs and donors' priorities;**

\* Improved credibility and national impact of CATIE in each member country;

\* A more balanced group of programs as regards to higher education, research and outreach;

\* Decreased unit administrative costs.

\* **Level of demand from member countries and donor agencies, in each Technical Area.**

### 3.6 Assumptions

The strategy assumes:

\* High quality technical staff can be attracted and retained for key positions

\* System for prioritizing action lines is responsive to member countries' needs and donors' priorities;

**TABLE 7. CURRENT (1994) AND PROPOSED NUMBER OF PROFESSIONAL STAFF (NATIONAL AND INTERNATIONAL) PAID THROUGH CATIE'S CORE BUDGET**

PROGRAM	1994	1995-1998	1999-2002
Sustainable Tropical Agriculture <sup>1</sup>	10	17	19
Integrated Natural Resources Management <sup>1</sup>	5	20	33
Communications	2	3	5
Education (management)	4	4	4
Upper Management <sup>2</sup>	8	9	9
<b>TOTAL <sup>3</sup></b>	<b>29</b>	<b>53</b>	<b>70</b>

1. Includes professors and researchers in the Postgraduate School, and covers staff of current projects which will be assimilated by CATIE's core budget.
2. Includes Director General, Deputy Director General, Head of External Cooperation and Strategic Planning, three Program Directors, Administrator, Internal Auditor and Comptroller.
3. Total: in accordance with CATIE's Strategic Planning staff numbers (1994).

## **V: ACCOUNTABILITY**

### **1. Monitoring and Evaluation**

#### **1.1 Institutional development objective**

**\* To establish monitoring and evaluation as a continuous process to serve the Center's decision makers, donors and member countries.**

**The immediate objectives are:**

**\* To measure progress of Technical Areas and action lines toward achievement of goals and impacts, and to identify the necessary corrective actions in the event of deficiencies;**

**\* To build accountability into CATIE's ongoing program of action by providing open access to relevant data on performance.**

The monitoring and evaluation process will measure and record progress towards achievement of the Center's objectives, and contribute data towards formulating new or modified objectives should it be necessary. Information will be collected and managed in such a way that it is an aid to decision making and contributes to determining the implications for CATIE's mission, its goals and the effectiveness of the Center's actions.

Monitoring and evaluation will normally be a collaboration between external evaluators and CATIE staff. They will collaborate in identifying the data that is required, in arriving at a reasonable interpretation of it, and in drawing conclusions concerning future actions. Every effort will be made to keep the time that technical and teaching staff spend in data collection and reporting to the minimum compatible with clearly defined objectives. Contract evaluators will be used when specialized expertise is required, or when dealing with sensitive institutional or teamwork issues. The emphasis will be on innovative thinking and repeating successes that make the Center and its Programs work better.

#### **1.2 Actions**

The monitoring and evaluation program will be phased in over the next two years, and will consist of

**\* Identification of the key indicators for progress and impact within each Program, Technical Area and ongoing action line;**

**\* Preparation and review of yearly work plans and twice-yearly progress reports;**

**\* Provision of periodic short-term technical assistance in support of the design or redesign of projects and the integration of actions lines;**

- \* **Periodic impact assessment studies of selected action lines, and of joint activities between Technical Areas;**
- \* **Annual external financial audits.**

Workshops and seminars will be held to define monitoring requirements (who needs what information, for what purpose, and how data should be collected), followed by data collection and summary analysis. The conclusions will be used to formulate follow-up plans, and reports summarizing the results of each exercise will be made available to interested parties

### 1.3 Outputs

- \* **Impact Indicators:** Impact indicators for key aspects of the Center's performance have been outlined in the relevant sections of this plan. A study to determine impact indicators for Technical Areas and action lines funded by core budget will be completed by March 1996. All impact indicators will be kept under review to insure their continued applicability;
- \* **Annual workplans and progress reports:** Each workplan will include a number of operational targets and activities related to a limited number of key performance indicators to be monitored at the technical level;
- \* **Annual reports of progress toward component and overall goals:** These progress reports will highlight accomplishments, identify major problems or delays (and actions proposed to resolve them), report lessons learned and recommend future project directions;
- \* **Periodic special studies:** To assess the impact of specific project actions at the request of the Director General. These studies will measure the impact of actions, specific to particular Programs, Units or Projects, that may be at an important turning point, assess the relative efficacy of alternative actions, and decide on future actions to improve them;
- \* **Establishment of a Monitoring and Evaluation Unit in the Strategic Planning and External Cooperation Office;**
- \* **Major evaluations:** These will be conducted by a team of external evaluators, in close collaboration with CATIE's personnel during Strategic Plan years 3, 6 and 10. The evaluations will report successes, lessons learned, discarded ideas, and focus on the implementation of the Plan;
- \* **Annual audits:** Annual audits should take place to monitor the financial management and sustainability of the Center in light of its Strategic Plan.



## 2. Contacts with the donor community

### 2.1 Institutional development objective

- \* To create a transparent system of policy, management and decision making that is open to scrutiny and access by international donors.

The immediate objectives are:

- \* To improve cooperation with international donors;
- \* To increase the reliability of the Center's management and administration;
- \* To establish a permanent feedback system between CATIE's governing bodies and international donors.

### 2.2 Actions

- \* To secure these management and administration objectives;

\* Implementation of a consultative mechanism with international donors to improve donor input to the policy making process. Starting in 1996, CATIE will implement a regular twice yearly consultation round to coincide with the regular meetings of its higher bodies of government. Meetings that will occur during the round include:

(a) those between CATIE and member countries for consultations, feedback, drafting and monitoring of operation plans, reports, *etc.*;

(b) between CATIE's upper management and the Board of Directors and Council of Ministers for institutional decision making (first and second semester of each year);

(c) between CATIE and international donor agencies for information and consultation.

### 2.3 Inputs

- \* The strengthening of the Office of External Cooperation with additional staff.

### 2.4 Outputs

- \* A fluid and open feedback system for information and exchange of opinions between the donor community and the Center;

- \* The improvement of CATIE's image and relations with international donors.

## 2.5 Impact indicators

- \* **Enhancement of CATIE's corporate image with international donors;**
- \* **Degree of confidence in the institutional planning, monitoring and evaluation processes.**
- \* **Flow of communication and degree of efficiency of the consultation round will be permanent, and up to date;**
- \* **Rates of demands upon the Centers' services from the international community, per particular donor and the community as a whole;**
- \* **The degree of acceptance of the Center's projects, technical assistance, publications, degrees, short courses, and institutional activities with international donors.**
- \* **Levels of demand for services by the international community as a whole and by individual donors.**

## 2.6 Assumption

One main assumption underlies this component:

- \* **The international community of donors is interested in establishing a consultation round with CATIE, its Board of Directors and the Council of Ministers.**

## **VI. SUMMING-UP**

Five processes have been identified that working together will contribute to transforming CATIE from a Center that is financially unstable, with serious constraints on its ability to set its own research, education and outreach agendas, into a Center that is able to efficiently use and build on its experience in these areas to contribute to sustainable development in its member countries and the rest of tropical America.

1. Strengthening the Technical Areas with human and financial resources in order to:
  - Develop effective outreach mechanisms;
  - Assimilate key functions from strategically important projects into ongoing action lines.
  - Increase cooperation with member countries.
2. Refocusing the Center's research and education programs to place greater emphasis on outreach and problem solving, in order to:
  - Enhance the impact of the Center's actions in the member countries;
  - Enhance the Center's image.
3. Placing socioeconomic concerns, and gender, indigenous and minority issues prominently on the agenda of the Center's research, education, management and outreach programs;
4. Establishing a constructive relationship with the international donor community;
5. Instituting a program of measures aimed at strengthening the Center's core budget in order to insure financial and operational stability.

It is to be expected that there will be considerable synergistic effect between these processes. For example, greater emphasis on gender and indigenous issues in the research and technology transfer process is likely to result in enhanced impact of the technology in question. Therefore, it can be predicted that additional benefits will accumulate as a result of simultaneous progress in all of the priority processes.

Indeed, it must be doubted whether significant advances in one process can occur *unless* they are accompanied by progress in the others: greater emphasis on outreach is of questionable value if the Technical Areas are starved of the investment needed to transform them into stable entities with consistent policies and adequately resourced action lines.

CATIE considers that success will most likely result from the evolution (albeit, accelerated evolution) of the Center along the lines described above, with the gradual and ongoing implementation of the policies described in the preceding chapters. As

was mentioned at the outset, much of what needs to be done requires additional funding being allocated. In its absence, some of the actions being considered might be able to proceed but most would run up against constraints caused by lack of funds or lack of time. Attempts to forge ahead without an adequate level of support might actually be detrimental to the operations of the Center by creating a need to divert scarce resources from ongoing work.

A program for implementation based on an assumption of adequate resources has still to be worked out in detail. However, given the evolutionary nature of the desired changes, it is predicted that there will be a similarly gradual increase in the resource levels required, with maximum demand occurring in 1997-1998. If the basic premises of this general plan are accepted and meet with practical support from donors, CATIE's management will prepare detailed calendars for the logical steps involved and projections of the demand for financing.

The challenges faced by CATIE and its partners for change are substantial. Every year that goes by sees more forest lost, more soil eroded, more loss of biodiversity, higher population, more rural poor, and less *per capita* food production. Somehow, a way must be found to enable CATIE to change without neglecting the commitments it has already acquired.

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