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FINAL REPORT
OF
TROPICAL AGRICULTURAL RESEARCH
AND TRAINING CENTER
CATIE

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TABLE OF CONTENTS

| <u>SECTION</u> | <u>PAGE</u> |
|-------------------------------------------|-------------|
| CONSULTANT'S ASSESSMENT | |
| INTRODUCTION..... | i |
| OBJECTIVES AND METHODOLOGY..... | ii |
| I. FINDINGS | |
| A. Organizational..... | I-1 |
| B. Technical..... | I-2 |
| C. Financial..... | I-19 |
| II. ISSUES | II-1 |
| III. CONCLUSIONS AND RECOMMENDATIONS..... | III-1 |

CONSULTANTS' ASSESSMENT

Our assessment of the CATIE organization has led us to the following general conclusions, each of which are discussed in greater detail in the report that follows.

CATIE has played an active regional role in the promotion of applied research and technology advancement in animal, crop and forestry production and management in Central America and Panama. It has had particular application to the needs of small scale, limited resource farming, in terms of research and farming systems methodology. It is known for three primary activities: 1) research; 2) training; and 3) technical assistance supplied to national institutions to assist them in implementing their agricultural development programs.

CATIE is a unique regional resource providing laboratory services, library and technical publications, a regional seed bank and classroom facilities. It provides a post-graduate level education program and a number of short training courses tailored to the needs of users in the region.

In our opinion, CATIE will continue to play a role as a catalyst for new ideas, principally at the national level. It should continue to expand its outreach activities, many of which have been stimulated by AID funded projects. It will, of course, continue to be a regional center for technical information and a center for applied research and technical assistance activities. Its training programs, which are well received by national governments and training participants, will go on. In working with external donors like AID, the IADB and GTZ, it will continue to channel project funding activities into the member countries of the region. It should also play an increasing role in assisting the national governments in their long range needs identification, specifically as they apply to research, training and technical assistance.

In terms of CATIE's relationship to AID programs, we found it to have specific application to a number of current AID poli-

cies. These include: food and agriculture; environment and natural resources; transfer of technology; energy; applied technology; institutional development and private sector development.

For AID, CATIE is, primarily, a project implementor able to carryout agency objectives through projects in the region. The relationship is, in essence symbiotic: AID has a vehicle for project implementation; CATIE has a means for extending its basic research, training and technical assistance programs.

The institution has a very good potential for assisting private sector development, an area that appears to be receiving more importance, given the increasing attention of the United States to regional economic conditions. Much of this activity may be in the area of food and agricultural development with attention given to cash and nontraditional crops intended for export. In addition, CATIE's recognized capabilities in the natural resources area, e.g. fuelwoods and watershed management, will be important to a well managed, national development program at the member country level.

AID and CATIE both may need to focus on research activities that have a potentially for fast results. Also AID should coordinate its CATIE activities more closely with other interested donors to better plan project activities and contribute towards the institution's facilities. To this end AID may want to consider some form of non-project funding intended to enhance specific aspects of CATIE's institutional capabilities.

In summary, we find CATIE to be institutional sound with good prospects for the future. However, there is a need for more long range planning and involvement on the part of the member countries. Its staff is well qualified and the reputation of the institution's work is high. Because donors do influence CATIE's research, training and technical assistance activities by virtue of their project content, level and duration of funding, both parties must recognize the implications of this influence. It must also be remembered that CATIE is neither a basic research institute or a substitute for effective national extension ser-

vices. It cannot directly influence end results, but can provide intermediate support that increases the probability for agricultural success. It is a unique resource for a number of reasons such as its regional presence, language, culture, political non-alliance, and the institution should continue to be used by AID were there is a clear match between program needs and institutional capabilities.

INTRODUCTION

This report contains the results of an institutional assessment made of CATIE over a two week period in November 1983. The assessment was carried out by a combined Coopers & Lybrand - AID team. Our investigation centered primarily on assessing the capabilities of the institution itself, and the perceptions of the users of CATIE such as representatives of the national governments in the region and AID project officers at ROCAP and in the bilateral missions.

Our assessment was intended to provide information in the following areas: organizational; technical and financial. During this data gathering process we were also made aware of a number of important issues that influence CATIE's organizational ability and its capacity to effect agricultural development in Central America. An awareness of this factual information and the issues surrounding agricultural development in Central America has allowed us to form certain conclusions about CATIE and agricultural development issues in the region in general, and to make the recommendations that conclude this report.

We sincerely appreciate the cooperation and support provided by the management of CATIE, the ROCAP mission and all of the people who participated in our interviews throughout Central America.

OBJECTIVES AND METHODOLOGY

The overall objective of this institutional assessment of CATIE was to provide information concerning the role the institution can best play in agricultural development in Central America and Panama.

To do this the assessment team carried out a series of interviews and did background research with representatives of CATIE, AID (ROCAP and bilateral mission personnel), and agricultural decision-makers and host country counterparts in Costa Rica, Honduras, Guatemala, El Salvador and Panama. Our questions were designed to provide information in the following areas:

- 1) What role has CATIE played in agricultural development in Central America and Panama?
- 2) What continued role is most appropriate for CATIE given its existing and potential capabilities?
- 3) How might AID most effectively use CATIE in carrying out the agency's agricultural development strategy for the region?

Our findings, conclusions and recommendations are contained in the report that follows.

I. FINDINGS

A. Organizational

CATIE is organized technically along departmental lines. They are animal production, plant production and renewable natural resources. A fourth department provides support to these three departments and to the administering of CATIE's training activities.

The institution is headed by a director. A deputy director's position will also be created in 1984. The overall direction for planning, control and evaluation is the responsibility of the board of directors constituted by representatives from two of the member countries, on a rotating basis, the minister of agriculture of Costa Rica, the director of the Inter-American Institute for Agricultural Science (IICA), a representative of IICA's board (JIA), and the director of CATIE.

Since 1980 CATIE's management has emphasized the need to re-establish financial integrity in the institution. Controls on spending and the management of CATIE assets have been reinforced, and a concerted effort made to capture an increasing amount of external, donor funded projects in the region. With an impending change in directorship (early 1984), it is expected that CATIE will continue to place emphasis on financial control while at the same time increasing efforts to expand growth in its technical and administrative programs.

In line with this emphasis, CATIE continues to implement new financial and planning control systems: e.g. computerized funds accounting and cash flow projections. A separate planning unit has been created to better project future fiscal performance.

CATIE's core activities* are funded by contributions from: Guatemala; Honduras; El Salvador; Costa Rica; Nicaragua; Panama

*Activities separate and apart from externally funded projects.

and the Dominican Republic. Additional funds are contributed by IICA, which may provide up to 5% of its annual operating budget for the support of CATIE.

CATIE's planning horizon has traditionally been short-term in nature, geared to ongoing research and recurring training activities. Presently, momentum appears to be building for longer range planning (up to 10 years into the future) to better ensure economic stability and the continuity of technical programs, as well as to channel external funds into priority programs.

B. Technical

1. Mandate and Role

The Tropical Agricultural Research and Training Center (CATIE) was established to promote and stimulate research and technical cooperation in animal, crop and forestry production, providing alternatives to address the needs of the Central American and Caribbean tropics. The center's principal objectives are:

- . To carry out research for generating technology to address the agricultural problems of the Central American and Caribbean tropics, benefiting primarily small scale, limited resource farmers.
- . To train professionals from Latin America and the Caribbean to upgrade the technical capabilities of national institution personnel.
- . To provide technical assistance and services to national institutions to strengthen their ability to implement agricultural development programs.

CATIE's broad mandate and objectives are generally known in the region. However, the team's meetings with host country and CATIE personnel revealed an inability to clearly articulate CATIE's mandate and role outside the context of existing project activities. For example, both the countries and CATIE had difficulty in addressing questions regarding areas of comparative

advantage for CATIE or future roles and changing mandates for the institution.

Clearly CATIE has yet to establish an effective, interactive planning process with its client countries which would permit both parties to assess the institution's overall objectives and program content. According to the countries, the board of directors has not served as a forum for the countries to present their needs, and as a mechanism to provide guidance to CATIE. In part the countries blame themselves for not assuming a more active role on the board. However, they fully expect that this situation will improve under the newly created technical advisory council. The council, which will include recognized agricultural scientists, will provide board members with recommendations on policies and strategies in the areas of research, training and technology transfer.

Internally, CATIE has not developed an effective planning and evaluation process. None of the technical departments could produce documents which would indicate that they had carried out medium and long-range planning exercises such as problem identification, or an assessment of resources and CATIE's comparative advantage to address given agricultural and natural resources problems.* The technical departments do not carry out evaluations of overall departmental activities. The evaluations that are held are project related and required by the external donor agency. Thus the departments do not have an indication of how individual activities or projects fit into the department's overall objectives.

The interaction between the technical departments and CATIE administration on questions of policy and operational aspects has been extremely limited in the past. Fortunately, the

* The renewable natural resources department did indicate that it was currently carrying out a planning exercise within the department.

new agreement establishes two internal bodies which will increase the advisory role of the technical departments. The technical administrative council will advise the director's office on technical, administrative and financial matters while an academic council will advise on education matters. The institution has undoubtedly been preoccupied with resolving its financial situation and must now devote time to longer range objectives.

2. Program

CATIE's program encompassing research, training and technical services elements is carried out by three technical departments: Crop Production; Animal Production; and Renewable Natural Resources. The technical departments are supported by a Research and Training Resource Development Department. Analyses of the departmental staffing situation reveal: (1) the importance of external donor financing of the CATIE program and staff and (2) the significant number of staff located outside of CATIE's Turrialba headquarters. Table 1 presents a breakdown of professional and auxiliary staff by department, funding source and whether assigned to a country or located at Turrialba.

In general, CATIE has been remarkably successful in attracting an internationally diverse agricultural staff which has an undoubtedly stimulating effect on the institution. Unfortunately, since project financed staff are under contract this does not provide the staff continuity which is beneficial to an institution such as CATIE. Of the approximately 146 professional staff only 26 are core budget financed. Almost 30% are located outside of Turrialba.

Research Program

CATIE's research activities are almost totally dependent on external donor financing. Research activities within a department, are usually financed by several external donors.

Table 1 - CATIE Staff

| <u>Crop Production Department</u> | <u>Professional</u> | <u>Auxiliary</u> | <u>Total</u> |
|-------------------------------------------------------------------|---------------------|------------------|--------------|
| Staff | 62 | 72 | 134 |
| <u>Financing</u> | | | |
| Core Budget | 6 | 12 | 18 |
| Other External Financing | 56 | 60 | 116 |
| <u>Location</u> | | | |
| Turrialba | 39 | 49 | 88 |
| Member Countries | 23 | 23 | 46 |
| <u>Animal Production Department</u> | | | |
| <u>Financing:</u> | | | |
| Core Budget | 5 | 18 | 23 |
| Other External Financing | 19 | 13 | 32 |
| <u>Location</u> | | | |
| Turrialba | 15 | 26 | 41 |
| Member Countries | 9 | 5 | 14 |
| <u>Renewable Natural Resources Department</u> | | | |
| Staff | 37 | 35 | 72 |
| <u>Financing</u> | | | |
| Core Budget | 7 | 3 | 10 |
| Other External Financing | 30 | 32 | |
| <u>Location</u> | | | |
| Turrialba | 27 | 24 | 51 |
| Member Countries | 10 | 9 | 21 |
| <u>Research and Training Resources Development Department</u> | | | |
| Staff | 23 | 39 | |
| <u>Financing</u> | | | |
| Core Budget | 8 | 15 | |
| Other External Financing | 15 | 19 | |
| Total CATIE Staff | 146 | 177 | 323 |
| <u>Financing</u> | | | |
| Core Budget | 26 | 48 | |
| Other External Financing | 120 | 129 | |
| <u>Location</u> | | | |
| Turrialba | 104 | 138 | |
| Member Countries | 42 | 39 | |

While not a result of a formal planning or project selection process, the current research activities do appear to complement each other.

CATIE has been a leader in developing and transferring farming systems methodology to the Central American countries. The farming systems approach has also oriented CATIE research towards applied rather than basic research activities. Apart, however, from project financed research, the team was unable to find evidence that CATIE has a strong, internal, core-funded research agenda.

(1) Crop Production Research

The Crop Production Department addresses the food production technologies and systems of limited resource producers in the low, wet humid, and dry humid tropics, is developing disease resistant, high yielding coffee and cacao varieties and is initiating research in tropical crops with economic potential. Among the research activities directed at the low-wet humid tropics are: use of nitrogen-fixing leguminous trees in association with annual crops; evaluation of cassava corn and pigeon pea varieties; small farmer production systems based on tropical roots and plantains; and weed control systems. Research in the semi-arid and dry-humid tropics has concentrated on alternative crop systems for these areas. The farming systems research has been funded by AID through ROCAP's Small Farm Production Systems Project (SFPS), the Canadian International Development Research Center's Drought Resistant Crops Projects (Phases I and II), the International Fund for Agricultural Developments Research on Annual Crops Projects and the European Economic Community's Pilot Project for Rural Development in El Salvador. Research on coffee is being financed under the AID/IICA Promecafe Project. The German Technical Cooperation Agency (GTZ) is providing financing for the maintenance of a plant genetic resource unit which serves as a source of plant materials for the research carried out by the Crop Production Department. Research efforts have been concentrated primarily on food crops.

(2) Animal Production Department

The applied research activities of the department underwent a drastic change in 1983. Both ROCAP's Small Farm Production Systems Project and the now completed Interamerican Development Bank's (IDB) Milk Production Project emphasized applied research directed at the problems encountered by the small farmer. This included improved animal production systems for limited resource livestock producers such as dual purpose beef/milk systems and dairy modules. These activities were also characterized by significant, in-country technical assistance and training. However, the department is now focusing on large animal genetic improvement and appears to be in the midst of a process of retrenching its activities back to Turrialba, a situation that disturbs the member countries. The work on small ruminants and swine continues with the assistance of the ROCAP SFPS Project.

The research activities of this department were heavily influenced by external funding. With the termination of the IDB Milk Production Project in 1983, the professional staff of the department was reduced by 20% in one year -- rather dramatic evidence of the importance and impact of external project financing.

(3) Renewable Natural Resources Department

The research activities carried out by the department have increased steadily in the past several years. Research is centered in three areas: silviculture; agroforestry systems; and wildlands and watershed management. The major thrust of requests for research stems from a desire by the development assistance community to fill gaps in knowledge, to develop methodologies for planning and management, and to establish demonstration units at the farm level or at the watershed (ecosystem) level by which national institutions can effectively begin to address the problem of resource degradation in an integrated fashion.

Research topics under the Forestry for Wood Production Program have included: research on existing fuelwood gathering and

utilization practices; natural forest and plantation trials; joint action with local forest services in community forest planting; tree improvement through species and varietal trials; and design of forestry techniques for wood production from primary and secondary forests.

The agroforestry program research has involved identification and quantification of traditional and other commonly used agroforestry practices in the American tropics: live fence post management; intercropping fruit and timber trees with crops and pastures; biomass production, nitrogen production and cycling effects on associated food crops (alley cropping) and grass growth; and vegetative propagation.

Some research on agroforestry is also carried out by both the Plant and Animal Production Departments, notably on feeding trials with leaves and branches from leguminous trees. However, the interaction among the departments in these efforts appears minimal.

The Wildland and Watershed Management Program is carrying out primarily applied research such as: design of methodologies for the management of protected areas in Costa Rica, Panama, Honduras, Belize, Nicaragua, El Salvador, Guatemala and Dominican Republic; design of methodologies for interpretation and environmental education; preparation of management plans for selected national parks; use by indigenous populations of resources from forest areas in the Rio Platano (Honduras) Biosphere Reserve and the Kuna territories in Northeast Panama; detailed studies in Panama; detailed studies in the pilot watershed of "La Suiza" (training and research); and horizontal interception ("fog drip") in cloud forests. The AID/ROCAP Watershed Management Project will be initiated in January 1984. It will concentrate on providing training and advisory services to the countries.

Demand for research services are illustrated by the following examples:

- . Incentives and disincentives to arresting deforestation, consumption and market patterns that influence use of fuelwood at the small industries level, soil-site relationships, appropriate nursery techniques and feasibility of demonstration units at the farm level.
- . Developing methodologies for prioritizing watersheds so that critical areas can be identified and protected in an appropriate fashion, while other areas can be utilized to the maximum benefit of local farmers, municipalities and national forestry organizations.
- . Developing appropriate technologies for agroforestry systems that improve upon existing systems, as practiced by small farmers throughout the region.

Future trends indicate that demand for research services will continue as long as CATIE is willing to address the basic human needs of fuel and fiber at the farm level.

Natural resources research activities have been financed by ROCAP through the Fuelwood Project and the Watershed Management Project, the German Technical Cooperation Agency and the Swiss Development Cooperation Program, as well as the United Nations University in Tokyo.

3. Training

The graduate studies program in the Research and Training Resources Development Department is responsible for the courses which are given in collaboration with CATIE's technical departments under the terms of an agreement with the University of Costa Rica (UCR). CATIE has the oldest and most stable agricultural graduate school in Latin America. The University of Costa

Rica is responsible for academic coordination, certain core courses and the awarding of degrees. CATIE provides its specialized technical personnel for courses and thesis supervision, facilities and the financial administration of the program. In 1982 approximately 35 professors participated in programmed courses (26 from CATIE and 9 from the UCR). Additional CATIE staff served as thesis advisors for the students. M.S. degrees are given in the following areas of specialization: crop production; animal production and renewable natural resources. Approximately 30 new students per year are accepted into the program. In 1982 CATIE received 235 applications for the start of course work in March 1983. Only 35 new students were accepted, however. Practically all of the students receive financial support either from scholarships provided by external donors or from their sponsoring institutions. It costs approximately \$8,000/yr to cover the costs of a student at CATIE. The Dutch government provides the majority of the scholarship monies; the United Kingdom and the Federal Republic of Germany are also major contributors.

The student body is geographically diverse although most are from public sector institutions. Students from the Central American region normally account for over 50% of the new students (Costa Rica itself normally accounts for one-third of the new students); however, the remainder are from South American countries particularly Brazil, Ecuador, and Colombia. CATIE graduates normally fill administrative and managerial level rather than research positions. The graduate program is not heavily discipline oriented but appears to provide the student with a good general overview of the area of specialization.

The facilities at CATIE available for the graduate program appear to have reached the peak utilization level. However, CATIE has no master infrastructure plan. This results in rather ad hoc dormitory and classroom arrangements as peak load problems occur.

Non-Degree Training

CATIE has developed a series of short courses, workshops and seminars which have been presented at the regional level and in specific countries. In addition longer term, in-service training opportunities have been available for selected national participants at Turrialba. The training has been in areas such as: crop and animal production systems; disease and pest control; agroforestry practices; forestry; natural resources management; fuelwood production; research methodology; information systems; genetic resources; research data analysis and management; and other specialized areas. Since 1979 CATIE has held over 141 training events at which over 2,700 persons participated. Approximately sixty-six of these courses, workshops and seminars were tailored for and held in a specific country.

CATIE has successfully integrated various funding sources to ensure that farming systems methodologies and applied research results from other project activities have been disseminated to the member countries. With funding from the W.K. Kellogg Foundation, CATIE has been able to disseminate results from AID and other donor funded projects that did not include significant training components. These short courses have been extremely useful in disseminating information and also for gathering feedback on unique national agricultural problems as well as common regional problems.

4. Technical Assistance

During the past ten years CATIE's technical assistance activities to the member countries have increased and consist of a highly visible, in-country presence. Using an operational format which was established and continues to be incorporated in all ROCAP projects, in-country CATIE resident professionals provide technical assistance to national agricultural/natural resource institutions via formal cooperative agreements. These professionals provide a continuity to CATIE projects at the country level, serve as feedback mechanisms for both CATIE and the

national institution, and provide a direct link to additional technical assistance available from Turrialba. This format was used by the IDB in its Milk Production Project and has also been utilized by other donors such as the International Fund for Agricultural Development (IFAD) and the Canadian Center for International Development Research.

The technical assistance which is available to the countries has been primarily project related. Thus crop and animal production technical assistance has been in the areas of farming systems methodology, experimental design and assistance in dealing with production problems of local crop and animal systems. Fuelwood project technical assistance has also been directed primarily at working on activities such as fast-growing species trials. Increasingly in natural resources, countries are utilizing technical assistance from CATIE and reimbursing the institution for services apart from specific CATIE projects. For example, Costa Rica requested a forestry inventory of the Sarapiquí area and a national park master plan. Honduras requested master plans for the Rio Platano Biosphere Reserve while Panama requested a master plan for Tigre National Park and the preparation of a land use management plan for the Kuna Indian Reservation. Future trends indicate that, with increased emphasis on arresting environmental degradation by the development assistance community and by natural resource institutions in the region, CATIE will be a logical place to come to secure the technical services. Other less known examples of technical assistance include work on insect pests by the CATIE entomologist and requests for assistance by CATIE's cacao and coffee experts.

5. Technical Services

CATIE provides a wide range of technical services including: maintenance and distribution of plant and animal germplasm; tissue culture propagation of coffee; plantains and other plants; data processing and analysis information services such as biblio-

ographies; documents and photocopies as well as pest inventories. Many of these services are handled by units of the Research and Training Development Department. For example, the Tissue Culture Laboratory, constructed and equipped with AID funds under the PROMCAFE Project, can rapidly propagate disease-free plant materials. These are made available to researchers working on disease resistant varieties of coffee, plantains and can also be used to propagate forest tree species. The Plant Genetic Resources Unit, funded by the German Technical Cooperation Agency since 1976, maintains genetic material of important traditional and exotic tropical crops as well as a seed bank with refrigerated chambers for seed storage. There are over 3,800 seed and 4,500 live entries in the Genetic Resources Unit. The unit has received samples of avocado, mangoes, beans and plantains and carried out chemical analysis of varieties of the achiote plant (a source of natural red food coloring). CATIE has a liberal plant germplasm exchange policy with national institutions and international agricultural centers as well as with individuals. CATIE's other plant germplasm services include the 1,200 cultivars of arabica coffees and the extensive collection of cacao at Turrialba and CATIE's La Lola experimental farm. CATIE sells hybrid cacao seeds in Central America and to other countries. Another example of CATIE's intensive germplasm services is the Latin American Forest Seed Bank which makes available tree seeds to countries throughout the world.

CATIE's information services are also significant. The Orton Commemorative Library, administered and operated jointly by CATIE and IICA, has a collection of approximately 80,000 volumes in agriculture or related fields, probably the most complete collection on tropical agriculture in Latin America. It offers services such as the preparation of short bibliographies and reproduction of documents. Two of the technical departments also maintain separate documentation mechanisms. The Crop Production Department compiles and distributes documents on crop production systems prepared by the department which are distributed to other researchers. The American Tropical Forest Information and

Documentation Service (INFORAT), in the Renewable Natural Resources Department, is financed by the Swiss Development Cooperation Agency. It maintains natural resources documents and also publishes and disseminates technical publications in the field of natural resources.

6. Program Quality

CATIE is known internationally as a regional, tropical agriculture institution. Its involvement in farming systems research methodology is also widely known. AID project evaluations and interviews, held with representatives of national counterpart institutions and USAID missions, demonstrated a general satisfaction with the quality of services received from CATIE. Contributions from other international donors have increased and the composition of the donors has been stable over the past several years. Overall, the institution is viewed as an effective project implementator and service delivery agent by the donors and the countries.

Research

Acceptance and incorporation of research results by national institutions are indicators of the quality of research of CATIE. The farming systems methodological approach has been accepted by the ministries of agriculture in Panama, Honduras, Guatemala and El Salvador. The countries consider the approach useful in providing their research and extension services with a common framework for addressing agricultural production constraints. Broad dissemination of improved production system alternatives to farmers has not been as successful. Failure may be due to problems inherent in national extension systems and problems with the validation and transfer of production alternatives to sites with similar agro-climatic characteristics. CATIE has been successful in developing cropping alternatives for limited resource farmers which will increase their net incomes. However, these production alternatives have been based primarily on basic grains and other food crops where income gains have not been dramatic.

CATIE is perceived as carrying out worthwhile applied research but the institution finds it difficult to find a niche in crops such as cassava, beans, or corn when two international centers, CIMMYT and CIAT, are already working on these crops. In the area of cacao and coffee, CATIE's research on disease resistant varieties for Central America is highly respected and considered excellent. For example, the American Cacao Research Institute funds cacao research and students at CATIE.

CATIE developed excellent reputations in applied research and development of animal production technologies directed towards limited resource farmers, e.g., milk production modules and dual purpose beef/milk systems. However, there is serious concern by the countries that this excellence can be maintained in the future.

The quality of natural resources research is considered to be reasonably high although a criticism is that peer review procedures commonly found in U.S. institutions are somewhat lax. Much of the research is published in Turrialba as a series of technical reports. Hence, reviews are not conducted by individuals from outside institutions. While staff can publish in reputable scientific journals and present results at international scientific meetings, in actuality there is no requirement that they do so. The lack of peer review is applicable to practically all the research carried out at CATIE.

There is also a general need to strengthen the economic analysis carried out by CATIE as part of its research efforts. Only three professional agricultural economists (M.S. or Ph.D.) are located in the Crop Production Department, none in the Animal Production Department and one in the Renewable Natural Resources Department. Given that so much of CATIE's research is to develop viable production alternatives for limited resource farmers, such research should be backed by reliable and rigorous economic analysis.

Training

(1) M.S. Program

The measures used to assess the quality of the program included the quality of the curriculum, length of training, technical qualifications of the faculty, composition of the student body, reputation of the program and follow-on employment of the students. The M.S. degree program is recognized by the member countries as providing an adequate general program in plant, animal production and natural resources. It is not perceived nor is it "sold" as a strong discipline-oriented program. Therefore, individuals with a strong research and disciplinary orientation would be encouraged to attend a U.S. university. Students are required to take a Graduate Record-type exam for admission. The program is in great demand by students in Latin America. CATIE graduates tend to occupy administrative and managerial positions with national, public sector agricultural institutions.

The quality of the masters program is comparable to many smaller universities in the U.S. but it is dependent on particular faculty input to the program in terms of formal courses and their physical presence during the semester. Thus, staff on contract to projects are sometimes drawn away from teaching because of project tasks that have greater priority.

The program is generally weak in the area of agricultural economics and economic analysis. It also lacks any course work in the management and administration of research and extension institutions, though the majority of the graduates ultimately occupy positions where they are asked to manage research and extension programs.

(2) Non-degree Training

The countries are extremely pleased with the quality of the short courses and other informal training offered by CATIE. The training provides their agricultural staff with exposure to generalized concepts and methodologies, as well as specific and

practical technologies in crop and animal production as well as natural resources. CATIE is recognized as a leader in the region in organizing and administering informal training opportunities.

Technical Services

Measures used to assess the quality of technical assistance and services included the demand for these services and the perceptions of users of these services. Overall, the country representatives interviewed reported the technical services offered by CATIE as generally good to excellent. There were specific references to the cacao and coffee germplasm programs at CATIE. There was general agreement that CATIE's in-country project representatives were extremely valuable to the country and CATIE because they served as an effective feedback mechanism for both parties. Countries are making increasing use of technical assistance from the Renewable Natural Resources Department. Countries were concerned about the Animal Production Department maintaining its technical services capability now that the IDB Milk Production Project has ended.

7. Program Relevance

Interviews with representatives of national institutions revealed that in general they consider the CATIE program relevant to national problems. Member countries consider that CATIE's natural resources research, technical services and training activities, while fairly new, are extremely beneficial to countries and will be increasingly utilized in national programs. Likewise, countries were extremely pleased with CATIE activities in developing appropriate animal production technology. The coffee and cacao programs are viewed as highly relevant by the countries since CATIE is working on disease resistant varieties for these export crops. CATIE is recognized as an innovator in farming systems methodology. With the exception of Costa Rica, CATIE's farming systems efforts have been viewed as effective in orienting individual national

research and extension institutions. However, there is a general feeling that it is now the responsibility of national research or extension institutions to apply farming systems methodologies.

It is now up to CATIE to stay ahead of the national institutions in farming systems research and not dwell on methodological sophistication. CATIE is viewed as an institution that is relevant to the region and countries plan to take a more active role in articulating their needs and providing CATIE with more direction so that the institute can better address these needs.

AID Priorities

CATIE's mandate conforms closely to AID priorities in food and agriculture development, especially as related to increasing small farm income and productivity. It is also in the forefront of work in the natural resources area. In addressing these problems, CATIE works with national agricultural and natural resources organizations via technology transfer and the institution building approaches of formal and informal training and in-country technicians. CATIE's direct role with the private sector has been informal, but relatively important in the provision of improved plant germplasm to individuals and producer groups. For example, CATIE supplies hybrid cacao seeds which are extremely important to the Central American cacao industry. CATIE has also been responsible for supporting research work on macadamia and the pejibaye palm that are now the focus of solid investments by the private sector in Costa Rica.

C. Financial

1. Analyses of Revenues

Contract or project related income represented 76% of CATIE's total revenues in 1982* (68% project direct and 8% overhead contribution). This indicates the importance to CATIE of external project funding. AID was the largest single source of CATIE funding in 1982: 45% of project revenues; 30% of total revenues. (1981 = 43%; 1983 estimate = 42%.) Refer to Exhibit 1 for further detail.

The remaining 55% of project funds was contributed by more than eleven project donors, none individually representing more than 15% of total project funds. A decrease in funding by any one donor (other than AID) would not have a significant impact on the overall level of CATIE operation.

Basic or core revenues were generated from member contributions, the administration of goods and services, donations and the sale of agricultural products. In addition, project donors contribute funds for project administration or overhead.

| REVENUES | AMOUNT** | % OF BASIC REVENUES | % OF TOTAL REVENUES |
|-------------------------------|----------|------------------------|------------------------|
| IICA | \$ 740 | 29% | 9% |
| Governments | 250 | 10 | 3 |
| Total Member Contributions | 990 | 39 | 12 |
| Admin. of Goods & Services | 482 | 19 | 6 |
| Donations, Others | 431 | 17 | 5 |
| Admin. of Contracts | 654 | 26 | 8 |
| Total Basic Revenues | \$2,557 | 100% | 31% |

* 1982 is the most recent year for which complete data are available.

** Amounts shown in thousands of U.S. dollars.

Member government contributions were \$50,000 each. IICA's contribution of \$740,000 was therefore a significant source of basic revenues.

Total revenues grew by 8% in 1982, reaching \$7.9 million primarily due to a 20% increase in project funding. Total revenues are expected to grow by 6% including a 7% increase in project funding, according to an extrapolation of actual data available through October 1983. Total 1983 revenues will be approximately \$8.4 million.

2. Analysis of Costs

A separate accounting is maintained of expenditures associated with each contract. As expenditures occur withdrawals are made on deposit accounts or funding requests are issued to donors. Project revenues are not recognized until the expenditure has occurred.

Project expenditures are primarily personnel-related; personnel expenses are projected to total 51% in 1984. Projects provide research and teaching personnel and fund the hiring of local workers for project implementation.

Other project costs include the acquisition of materials and equipment, purchase of services, and scholarship funds.

Basic funds also pay for departmental (non-administrative) personnel. In some cases, the basic-funded departmental personnel are CATIE's counterpart contribution to projects. In 1984, basic funds are expected to cover 44% of total personnel costs (including administrative personnel) while projects will provide 56%.

Basic funds also provide departmental administrative as well as general administrative staff, and the maintenance of

facilities and equipment. The development of courses is another area of basic fund expenditures.

3. Cash Flow Projections

A summary of projected revenues and expenses prepared by CATIE management follows. These were prepared on a cash-basis for the years 1984-1988 in thousands of U.S. dollars. No assumption was made regarding inflation. The current exchange rate of US\$1=43.6 colones was applied.

REVENUES*

| I. Basic Revenues | <u>1984</u> | <u>1985</u> | <u>1986</u> | <u>1987</u> | <u>1988</u> |
|-------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| IICA | \$ 957 | \$ 1,004 | \$ 1,055 | \$ 1,100 | \$ 1,150 |
| Governments | <u>300</u> | <u>300</u> | <u>300</u> | <u>300</u> | <u>300</u> |
| Total member quotas | 1,257 | 1,304 | 1,355 | 1,400 | 1,450 |
| Admin. of Goods & Services | 295 | 291 | 310 | 320 | 335 |
| Commercial production | 995 | 1,120 | 1,192 | 1,222 | 1,302 |
| Other | 379 | 350 | 370 | 412 | 432 |
| Admin. of Contracts | <u>989</u> | <u>1,838</u> | <u>2,011</u> | <u>2,134</u> | <u>2,177</u> |
| Total basic revenues | 3,915 | 4,903 | 5,238 | 5,488 | 5,696 |
| II. Project Revenues | | | | | |
| Continuing Contracts | 7,172 | 8,254 | 7,547 | 7,456 | 7,288 |
| New Contracts | <u>- 0 -</u> | <u>8,400</u> | <u>1,200</u> | <u>1,600</u> | <u>2,000</u> |
| Total revenues | <u>\$11,087</u> | <u>\$13,557</u> | <u>\$13,985</u> | <u>\$14,544</u> | <u>\$14,984</u> |

EXPENSES

| | | | | | |
|--------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Personnel | \$ 6,575 | \$ 7,650 | \$ 7,930 | \$ 8,300 | \$ 8,600 |
| Cost of operations | 2,999 | 3,850 | 3,970 | 4,060 | 4,178 |
| Investments | 822 | 903 | 897 | 920 | 896 |
| General services | 541 | 754 | 838 | 964 | 1,010 |
| Operating reserve | <u>150</u> | <u>400</u> | <u>350</u> | <u>300</u> | <u>300</u> |
| Total Expenses | <u>\$11,087</u> | <u>\$13,557</u> | <u>\$13,985</u> | <u>\$14,544</u> | <u>\$14,984</u> |

* Refer to Appendix 1 for a listing of assumptions used in the preparation of these projections.

These projections show increases of 24% and 20% respectively, for 1984 and 1985 project revenues. This is based on existing and known new projects. From 1986 through 1988 the rates of growth slow to the 2% to 4% range. Management feels that these are generally conservative projections of CATIE's expected level of activity.

Project overhead revenues are projected to reach about 23% of direct project revenues in 1987 and 1988, or \$2.1 and \$2.2 million respectively.

Of the membership quotas, IICA's contribution is expected to increase by 5% per year, reaching \$1.2 million in 1988. Government contributions are expected to remain the same as 1983, a total of \$300,000.

Commercial production revenue is projected to increase by 13% in 1985 as newly planted acreage begins to yield saleable products. By 1983 \$1.3 million is expected to be generated by these activities.

Project expenses equal project revenues. The timing of project funding will generally match the timing of expenses. If any difference should occur, a net prepayment of contracts is expected.

Both project and basic expenses will continue to be distributed among the categories of expense in proportions similar to 1983. At the projected level of operations, costs are expected to increase at about the same rate as revenues.

The operating reserve began accruing in 1982. Drawn from basic resources, the expense amount is projected to total 2% to 3% of annual expenses. By 1988 the reserve is targeted to total \$1.6 million.

4. Accounting Procedures and Controls

Accounting systems have improved substantially from 1980 to present. This process is expected to continue through 1984 when implementation of CATIE's revised and computerized system will occur. This will provide better consistency in the treatment and accuracy of entries.

Controls in the handling of cash and revenues have been recommended by outside consultants and have been or are in the process of being implemented.

Controls on expenditures have been tightened. The budgeting process has been improved and a monthly report of actual expenditures versus budget is produced. Senior management has made the control of expenditures and enforcement of the budget a top priority.

Financial statements are prepared on the basis of local need. Most generally accepted accounting systems would contain more detailed information. At CATIE, for example, there is no description of fixed assets owned or in CATIE control, which were estimated to be \$1.4 million in 1982. Also, a cash-basis rather than accrual-basis for accounting is used in some cases. However, if CATIE's statements were to contain more detail it is most likely that they would present a more favorable picture of its financial position than is now exhibited.

5. Overhead

CATIE has recently completed a study to provide a method for calculating overhead rates charged to project contractors. However, the system has not been widely implemented yet.

Ten variables were identified which represent project administrative costs, such as:

- . the number of international and national personnel assigned;
- . the system to be used for expense reimbursement;
- . the number of countries where project activity will take place; and
- . purchasing activities.

In calculating a project's overhead rate, a number is assigned to each cost variable representing its level of complexity. The total of these numbers indicates which classification and overhead rate is to be assigned to the project. This is a reasonable allocation formula, but, like any other overhead allocation scheme, is dependent on an accurate cost accounting system.

Once a project has begun, if administrative costs incurred vary from those estimated its overhead classification will be examined for adjustment. CATIE's new accounting system is expected to accumulate actual overhead expenses related to each project as they occur.

Overhead rates assigned to various projects using this method include:

| <u>Project</u> | <u>Overhead Percent</u> |
|---------------------------|-------------------------|
| AID - Production Systems | 30% |
| BID - Production Systems | 30 |
| GTZ - Cultivation Systems | 20 |
| W.K. Kellogg Foundation | 15 |
| Scholarship Funds | 10 |

6. Pricing of Goods and Services

CATIE provides a number of goods and services to its local community, the member nations and to other people. Some of these items are as follows:

| <u>PRODUCT/SERVICE</u> | <u>PRICING</u> |
|------------------------------------|-------------------------------------------------------------|
| Germ bank/seeds | Lower than market |
| Research results/publications | Token fee |
| Master's degree training | Most student pay no tuition, being covered by scholarships. |
| Research projects | Cost |
| Commercial agricultural production | Market price |

7. Return on Investment

National governments each contribute \$50,000 per year. These membership quotas are part of CATIE's basic budget. In return for this investment member countries receive:

- . benefits of continuing tropical agriculture research;
- . advanced training of citizens who will return to member nations and apply their knowledge and techniques to the improvement of domestic agriculture;
- . access to technical specialists.

In addition, member countries benefit from actual in-country project expenditures. In 1982 actual in-country expenditures were as follow:

| | |
|--------------------------------|-----------|
| Costa Rica (outside Turrialba) | \$168,313 |
| El Salvador | 197,935 |
| Guatemala | 218,053 |
| Honduras | 546,994 |
| Nicaragua | 654,166 |
| Panama | 219,188 |
| Other areas | 21,315 |

Member nations believe that they receive good value and quality of results for their membership quotas. This general

conclusion was based on favorable comments made by representatives of the national governments in Central America and Panama, who were interviewed by the assessment team.

8. Financial Viability

CATIE is financially "viable" on a long-term basis, in the sense that it could continue to operate, even at a much reduced level of income. CATIE does not rely solely on project funding for its viability. However, it is clear that without project revenues CATIE's current activities would be severely curtailed.

One way of analyzing financial viability is to identify the areas of activity which will continue at CATIE regardless of project activity. If these areas can be supported financially by stable, long-term funding sources then the continued existence of the organization appears fairly certain in the long-run. Zero project income can be defined as theoretically the "worst case" for revenues. Basic expenses can be viewed as a proxy for minimum operating costs of the institution.

In 1982 basic revenues, adjusted to exclude the overhead portion of contract revenues were in thousands of U.S. dollars:

| | |
|------------------------------------|---------------|
| Member Contributions | \$ 990 |
| Administration of Goods & Services | 482 |
| Donations, Other Revenues | <u>430</u> |
| - Adjusted Basic Revenues | <u>\$1903</u> |

1982 basic expenses, adjusted to exclude the portion arising directly from the administration of contracts, were:

| | |
|-------------------------------------------------|----------------|
| General Management | \$ 153* |
| General Administration | 484 |
| (Less: Contracts Portion) | (24) |
| Technical Programs | 691 |
| Development of Research & Instruction Resources | 239 |
| Field Operations | 179 |
| Financial Expenses | 39 |
| Incidental Expenses | <u>107</u> |
| Adjusted Basic Expenses | <u>\$1,869</u> |
| Total Basic Revenues - adjusted | \$ 1903 |
| Total Basic Expenses - adjusted | <u>1869</u> |
| Net Revenue - adjusted | \$ 34 |

Therefore, CATIE's basic activities are not dependent upon project revenues. All basic operating, training and research costs can be provided from basic revenues, excluding the portion derived from project overhead revenues. This is expected to be the case in 1983, as well as in future years.

In 1983 it is expected that net profits from commercial production will increase, as they are expected to do in 1984 and 1985 also. This further reinforces the conclusion that basic revenues will continue to be sufficient to support all basic expenses.

* Based on 1982 Price Waterhouse statements.

EXHIBIT 1

CATIE's revenues in 1982* were from the following sources:

| <u>Amount</u> <u>(\$000)</u> | <u>% of</u> <u>Total</u> | <u>% of</u> <u>Basic</u> | |
|-----------------------------------------|-----------------------------|---------------------------------|-------------|
| Basic Revenues | | | |
| Members - IICA | \$ 740 | 9% | 29% |
| - Others | <u>250</u> | <u>3</u> | <u>10</u> |
| 990 | 12 | 39 | |
| | 990 | 12 | 39 |
| Administration of Goods and Services | 482 | 6 | 19 |
| Donations, Other | 431 | 5 | 17 |
| Admin. of Contracts | <u>654</u> | <u>8</u> | <u>26</u> |
| Total Basic | \$2,557 | 32 | <u>100%</u> |
| | | <u>% of</u> <u>Contracts</u> | |
| Contract Revenues | | | |
| AID/ROCAP | 2,410 | 30 | 45% |
| FIDA** | 796 | 10 | 15 |
| IDB 498 | 6 | 9 | |
| GTZ <u>357</u> | <u>4</u> | <u>7</u> | |
| 4,061 | 50 | 76 | |
| Others | <u>1,317</u> | <u>18</u> | <u>24</u> |
| Total Contracts | <u>5,378</u> | <u>68</u> | <u>100%</u> |
| Total Revenues | <u>\$7,935</u> | <u>100%</u> | |

* Most recent year available. This data is from externally audited financial statements.

** FIDA = International Fund for the Development of Agriculture
IDB = Interamerican Development Bank
GTZ = German Agency for Technical Cooperation

EXHIBIT 2

CATIE PROJECT EXPENSE
in millions of dollars)

1981, 82 = actual
1983 = YTD

| | <u>1981 Actual</u> | <u>1981 %</u> | <u>1982 Actual</u> | <u>1982 %</u> | <u>1983 YTD (Jan-Oct)</u> | <u>1983 YTD %</u> |
|-----------------------------|------------------------|-------------------|------------------------|-------------------|-------------------------------|-----------------------|
| AID | \$1,947.8 | 43% | \$2,409.9 | 45% | \$1,815.2 | 42% |
| FIDA | 470.3 | 10 | 795.5 | 15 | 767.1 | 18 |
| IDB | 370.5 | 8 | 497.5 | 9 | 295.0 | 7 |
| GTZ | 647.4 | 14 | 356.6 | 7 | 286.0 | 7 |
| Kellog | 243.7 | 5 | 252.2 | 5 | 218.8 | 5 |
| IDRC | 158.3 | 3 | 218.7 | 4 | 216.0 | 5 |
| Netherlands | 179.0 | 4 | 184.0 | 3 | 193.8 | 5 |
| EEC | 119.5 | 3 | 174.1 | 3 | 145.0 | 3 |
| Honduras | 176.7 | 4 | 131.9 | 2 | 24.9 | 1 |
| Switzerland | 95.8 | 2 | 129.3 | 2 | 118.1 | 3 |
| UNA | 60.4 | 1 | 93.2 | 2 | 68.1 | 2 |
| Others | <u>122.8</u> | <u>3</u> | <u>135.0</u> | <u>2</u> | <u>123.4</u> | <u>3</u> |
| Total Project expense | <u>\$4,592.2</u> | <u>100%</u> | <u>\$5,377.9</u> | <u>100%</u> | <u>\$4,271.4</u> | <u>100%</u> |

- FIDA = Fondo Internacional para el Desarrollo de la Agricultura
(International Fund for the Development of Agriculture)
IDB = Inter-American Development Bank
GTZ = German Agency for Technical Cooperation
Kellog = WK Kellog Foundation
IDRC = Centro Internacional de Investigacion para el Desarrollo - Canada
(International Center for Development Research - Canada)
UNU = United Nations University

APPENDIX I

Assumptions for Projections

General

In U.S. dollars, in thousands. Does not include inflation assumption. At current exchange rate U.S.\$1=43.6 colones. On a cash basis.

Revenues

Project/contract revenues: 1984, based on continuing and known new contracts. 1985, additional minimum amount for new unknown projects. 1986-1988, contract revenues growth in 2%-4% range.

Management views this as a fairly conservative projection. It takes into account the capacity of CATIE's physical facilities.

Member Contributions:

IICA - increase 5%/year

Countries - no increase, stable at \$50,000/year, no new member countries expected.

Goods & Services:

Housing facilities - same pricing thru 1985, increase 10% in 1986, 7% in 1988.

Transportation and equipment - no increase.

Communications, other services - stable, no increase.

Technical assistance - no change in publication prices.

Miscellaneous:

Interest - expect deposits to remain stable, small increases in rate.

Membership fees, other - stable, no change.

Departmental Technical assistance - most items stable.

Small decrease in revenues from production of educational media; small increase in revenues from short course services.

Instruction activities:

1984 to 1985 - 8% increase

1986 - stable

1987 - 12% increase

1988 - stable

Commercial agricultural production:

1985 - 13% increase to \$1120. As new hectares planted in 1983 begin producing.

1986 - 6% increase to \$1192.

1987 - 3% increase to \$1222. Stable

1988 - 7% increase to \$1302. Yield from new hectares.

Infrastructure:

1984 - an expected donation.

1985 thru 1988 - no assurance of donations, no capital expansion plans.

Overhead for administration of contracts:

Slow growth from 35% of contract revenues in 1984, to 38% in 1988.

Expenses

Project expenses:

Equal project revenues. The timing of project funding (either by drawdown of deposit accounts or by submission of expense voucher to contractor) generally matches contract expenses. Overall, net prepayment of contracts is expected (vs. net accounts receivable). Project expenses are expected to arise from personnel, operating costs, acquisition of equipment and purchase of services in proportions similar to those in 1983.

Basic expenses:

Also expected to be incurred in proportions similar to those of 1983. A slight decrease in the proportion of personnel expenses will be offset by an increase in expenditures for services.

At the level of operations defined by the revenue projection, costs are assumed to increase at rates similar to the increase in revenues.

Some economies of scale in commercial production will be offset by the increase in area under cultivation, which will not begin producing revenues until 1 to 3 years later.

Cost of personnel:

Largest expense area. Will remain at 56% - 59% of total expenses.

Operating reserve:

Since working capital turned from deficit to surplus in 1982, CATIE has begun accumulating a working capital cushion. Drawn from basic resources, this amount will total 2% - 3% of total expenses each year. By 1988 the reserve is expected to total \$1,630,000.

II. ISSUES

1. Varying Country Needs and Planning

CATIE as a regional institution has a difficult task in developing a consensus among the member countries as to what constitutes a relevant program. On the one hand it must forge a program based on common themes or problems while taking into consideration unique national requirements and conditions in terms of its project assistance. While many of the agricultural needs of Central America are commonly shared, each country has unique conditions and requirements for project assistance. CATIE is in an increasingly better position to respond to national needs by virtue of its in-country representation achieved through its project activities. The team found that the countries were pleased with CATIE's field orientation and in-country project representatives. There are benefits both to CATIE and the country from in-country representation which can serve as a feedback mechanism for both parties. However, the countries appeared less pleased with their level of active participation in the process of setting CATIE priorities and program directions. Several host country personnel stated that CATIE asks for their input in the project implementation phase but not necessarily in the planning and design phase. There is a need for the member countries to play a more active role in CATIE's goal setting, planning and evaluation processes. To better represent the needs of its member countries, CATIE must have the active involvement of its board of directors to provide an external perspective on research, training and technical assistance needs. This is especially important for CATIE's basic activities.

Clearly, an interaction with the countries' planning process has to be established. CATIE can assist the member countries in identifying issues of longer term importance that may be neglected as the national governments concentrate on immediate priorities which, in many cases, absorb the full time attention of their decision-makers. Likewise, the countries should take a

more active role in setting CATIE's priorities and program directions.

2. CATIE's Role

The team found that CATIE's role was not clearly defined within the institution or externally. Yet, CATIE obviously has carried out a number of roles in the past which are recognized and approved by the member countries. Most of the countries mentioned that CATIE served as a source of continuity and "memory" for the region. While the countries were subject to political and policy changes, CATIE provided stability so that long-term problems could be addressed. CATIE also is seen as an innovator/leader/concept presenter and is particularly effective at this role because of its in-country project representatives. CATIE's farming systems methodology work was mentioned as an example of its concept presenter role. CATIE is also viewed within a specific project context as an applied research, technical resources and training center. CATIE can serve as a regional, technical resource center for natural resources, agro-climatic, pest and disease information, socio-economic data and descriptive information on the region's farming systems, and it already is viewed as a regional repository of plant germplasm and animal registers. The institution has also taken on a role as a regional problem solver in addressing coffee and cacao diseases. Its future work on integrated pest management and watershed management will probably increase its reputation as a regional problem solver.

CATIE is in a unique position to assume a leadership and innovative role as an identifier of priority regional needs in research, training, and service. CATIE is removed from political pressures influencing national institution's research priorities. A continuous dialogue is required with national research institutions, international agricultural research centers and donors to identify long-term research, training and service needs. CATIE if it improves its own internal planning mechanisms

could take on this role. Its board of directors and advisory boards would permit the right mix of political and technical interests to identify regional needs. CATIE could also serve as an initiator of projects to donors if it were successful in assuming this leadership role. In this role, CATIE may be able to reverse the traditional role it has played in taking donor projects to national governments for cooperation and implementation. This may be done by taking national needs and ideas for projects to donors for funding.

CATIE could also serve as an institutional gap filler between the international agricultural research centers (IARCs) which are not located in the hemisphere and the member countries. Unless formal and active working relationships are established with CIMMYT and CIAT there is little hope for CATIE to act as an intermediary. Also, the countries do not appear willing to let CATIE play this role, preferring to deal directly with the IARC's. At a minimum, CATIE and the IARC's should work more closely in each country to avoid duplication and to complement each others programs.

3. CATIE's Relative Strength

The team found that CATIE's relative strength can change quickly because of its dependence on externally funded projects and that the member countries pick up rather quickly on CATIE's strengths and weaknesses. Stability, continuity, regional mandate, personnel and facilities and a donor base are among the overall relative strengths of CATIE. CATIE also has recognized prestige in certain areas such as in cacao, coffee and agricultural information from its library and farming systems methodologies. Its prestige is decreasing in animal production while increasing in the natural resources area, especially agroforestry, fuelwood production and wildlands management. These perceptions of prestige extend to training, technical services and applied research in the technical areas. CATIE generally is not seen as strong in basic research or extension services. For

example, while farming systems methodologies have focused on food crops, countries have continued to rely on and maintain close relationships with international centers such as CIMMYT and CIAT. CATIE needs to maintain an edge in the face of increasing sophistication of agricultural researchers and policy makers in the various countries. These individuals are results oriented and will utilize institutions which they consider to have the delivery capability.

CATIE will need to continue to improve and diversify if it is to maintain its edge in the area of agricultural research for the region. It must keep pace with improvements and the advancement of national research capabilities to continue to be a leader.

4. Image and Identity

CATIE's image is highly varied because it has no "impact product" as do the international research centers which are commodity based. The change from commodity specialization (e.g. coffee, cacao) to farming systems was perceived as weakening the image of CATIE by those who are commodity or discipline inclined. Farming systems work is viewed by these individuals as an intangible product. Therefore, those who share this view respond with negative perceptions of CATIE, i.e., that the program lacks focus because it does not specialize and that there is a lack of depth in the disciplines, both in the research as well as the M.S. programs.

In the past the institution was criticized for being Turrialba based and having an "ivory tower" orientation. Fortunately, this view is no longer as widely held. ROCAP projects have probably done much to change this image.

CATIE has a positive external image vis-a-vis its training program, particularly its informal short courses and its library. Its applied research orientation also received praise. Finally, it gets high marks as a source of technical assistance. The natural resources program is the subject of increasing attention as a strong and extremely valuable program. Its traditional

coffee and cacao work continues to be viewed as an institutional strength.

On balance, the positive comments far exceeded the negative ones. Most emphasis was placed on accentuating what more CATIE could do rather than what it is not doing now.

5. Linkages

CATIE has developed strong linkages with national agricultural research and natural resources institutions involved in implementing CATIE projects. It has also developed networking relationships with national counterparts based on both its formal and informal training programs, as well as its project field work. CATIE has an excellent reputation among the member countries for the caliber of its in-country field staff.

CATIE also has developed extremely strong linkages with the donor community. Since the 1970s it has fostered relationships with the Federal Republic of Germany, the European Economic Community, the United Kingdom, Holland, Switzerland and Japan. CATIE's strong linkages with the donors have not only resulted in financial assistance but also contacts and linkages with agricultural researchers and institutions in these countries which are extremely valuable to CATIE, although strong, formal, continuing relationships are scarce.

At a technical level CATIE's linkages with the international agricultural research centers is informal and generally carried out at a personal level among researchers. The IARCs such as CIMMYT and CIAT tend to work directly with national institutions in varietal trials, etc. CATIE has not been able to assume an intermediary position between those centers and the countries, nor have joint projects been undertaken. However, there may be possibilities for these types of relationship with centers not located within the hemisphere.

CATIE's linkages with universities vary from the informal to the formal. For example, linkages have been established with the

University of Florida and in the past, with Oregon State University under a centrally funded weed control project. However, it does not appear that CATIE has made a formal effort to match its program with universities' strengths which might prove extremely beneficial to CATIE in the long run.

The creation of formal cooperative M.S. and Ph.D. programs between CATIE and U.S. universities could provide the countries in the region with an option to the present choice of sending students to either CATIE (not as prestigious as U.S. universities, AID money for scholarships tends to go to U.S. based education, highly technical specialization not possible) or to a U.S. institution (expensive, long absence from home and job, often irrelevant thesis topics). It could also increase the chance for peer review of CATIE's research and publications.

Problems that exist because of a lack of a more formal technical linkage are: an absence of peer review of CATIE's technical findings and publications; a lack of access to professional resources (i.e., professors on sabbatical who could teach courses at CATIE), technical information, and to other disciplines.

6. CATIE and Its Support of AID Policies

CATIE's greatest potential for contribution to AID policy objectives is at the regional level due to the fact that the need for its program activities extend beyond one country and that they are medium and long term in nature. Its core strength is applied research and training. However, the institution has built an increasing capability for outreach assistance, off-station research, transfer of methodologies and in-field, short-term training.

However, it is important that AID Washington, ROCAP and the bilateral missions understand what CATIE is most capable of doing well and what can best be done by other organizations involved in agricultural development. CATIE is a truly regional institution with connections to all countries in Central America. It has good research and training facilities and a well qualified pro-

fessional staff. It has experience with AID and understands the agency's technical and contractual needs. CATIE has long-term stability, both in terms of it as an institution and its professional staff.

What CATIE should not be thought in terms of is as an organization that can control "end-product" results. This is more properly a function of the national extension services. End-product results may be considered as the large scale adaptation of new grain varieties, increased crop production beyond the pilot-farm level or creation of large volume markets. Any evaluation of CATIE must be careful to gauge its performance upon what it does and not what is expected from an agricultural program in its entirety.

7. Impact of Multiple Donors

External donors increasingly influence the direction and expenditures of CATIE. Currently external donors provide 76% of CATIE's operating budget. Donors control, through their projects, much of the direction of CATIE's departmental activities. They contribute most of the funds used for facilities construction and for acquiring capital equipment.

There are risks associated with this level of donor-related activities. Donor project requirements for scientific staff may siphon off staff from on-going training and research activities. There is a danger that in responding to donor requirements CATIE may diversify in too many directions without carefully considering the implications and then find that the donors have changed direction, reduced their activities or shifted their priorities technically, programmatically or geographically.

Multiple donors can help to minimize these potential implications by broadening the sources of funding and thereby reducing the potential for financial disruption and allowing for a broader range of technical activities. Multiple donors in each of CATIE's programs will also serve to minimize future disruption in those areas. Because of their importance to CATIE, it may be

worthwhile to have donors play a role in board decisions, especially for those donors with multiple or long range projects.

8. Use of Basic Funds

Basic funds are used for: ongoing research; long and short-term training; general management; organizational administration; and the maintenance of facilities and equipment.

Basic funds are provided mainly through three sources: member country contributions; an IICA annual contribution and the sale of products produced at Turrialba by CATIE staff.

Basic funds, in the short run, are relatively fixed. Member countries' annual quotas are \$50,000 each. There is a need to differentiate between the use of basic funds for CATIE's own ongoing activities (e.g., research and training) and the indirect (or overhead) costs that should be properly associated with a donor project. In fact, without this recognition there is the risk that CATIE's basic activities could be eroded over time by a continuing expansion in donor projects unless an adequate contribution is made by donors to the incremental indirect costs that should be properly associated with these activities.

Indirect costs to be considered include: general management time; project control and reporting systems support; cost of utilities; maintenance and depreciation of equipment and facilities and non-capital expense materials and supplies.

If CATIE can be faulted in this area it would be in its inability to date to develop a rational for explaining its indirect costing system and the numbers applied. All indirect costs systems are arbitrary by definition, i.e., if the costs were direct they could be directly applied. Therefore an artificial allocation devise is employed. There is no one "right" scheme and any one of several may be used, but the one selected should have a logical connection to the costs to be recovered. Possibly the overhead system recently devised by CATIE will meet this requirement.

9. Current Changes that Affect CATIE

CATIE is currently facing a number of internal and external changes. It has recently implemented a new convention between itself, IICA and the government of Costa Rica. This convention has implications for CATIE's program planning, administrative operations and organizational autonomy. Its board of directors has also, as a result of the convention, been reconstituted to include the minister of agriculture from Costa Rica, the director of IICA, the director of CATIE and two member country representatives who serve on a rotating basis. The institution has a newly appointed director and a new structure, which includes, for the first time, a deputy director's position. It also has two new technical and academic advisory committees to advise its board on technical program decisions. A new non-Central American member - the Dominican Republic - has been added to its list of member countries. These, coupled with a likely revigorated interest in technical efforts, place CATIE in a good position for pursuing new growth and directions. It also creates the potential for change and uncertainty. CATIE's director, and the member countries, through their participation on the board of directors, will need to play more of an active role now than, possibly, at any time in the past.

10. Impact of Externally-Funded Projects

CATIE's dependence on externally-funded projects has advantages and disadvantages for the institution. There is no doubt that they contribute to a tight focus in the short run. ROCAP projects in particular have pushed the institution outside of Turrialba, helping it shed its "ivory tower" image. The project input-output format emphasizes a results-oriented approach which is extremely valuable to CATIE. CATIE is forced to carefully analyze the quality and quantity of its inputs and outputs because of project evaluations.

Nevertheless, the dependence on externally funded projects can have serious implications for the institution. For example,

it can detract from long-term institution building of CATIE because of a tendency to direct research and training programs and dilute long-term basic activities. It can upset and distort institutional equilibrium. For example the animal production Department was seriously affected by the termination of an IDB project this year, while the Renewable Natural Resources department is currently receiving substantial project related funding. There is no doubt that project funding can contribute to difficulties in attracting and maintaining strong professional staff because of the fixed term contracts that are normally offered to project staff. In our interviews with country representatives it was mentioned that projects can have a negative impact on the continuity of national outreach efforts giving the example of the IDB Milk Production Project.

The negative impacts from a heavy dependence on project funding could be lessened if CATIE had a viable, institutional long-range planning mechanism. Unfortunately, since it lacks such a mechanism it is subjected to practically all of the negative impacts mentioned above.

11. Changes in CATIE's Mix of Services

Potential changes in Central American agriculture policy and direction may necessitate a change in CATIE's technical assistance activities. Among the factors to be considered may be:

- . a balancing of emphasis between small farmer, single unit production and increased larger scale production of food crops at the national level;
- . the development and export of non-traditional crops;
- . crop diversification in wet humid tropical areas;
- . shifting rural to urban population;
- . Increasing concerns for natural resources.

Thus, possible new activities might include:

- . use of farming systems methodology to incorporate non-traditional cash crops into the region's small

farm production systems, crop substitution and diversification;

- . tissue culture propagation of high yielding disease/pest/drought resistant forest and tree crop species;
- . technology transfer research and training programs including MS level degree programs;
- . research administration and management training programs;
- . greater service to the private sector, particularly in areas of non-traditional crops;
- . greater attention to on farm production of wood and wood products, mainly for food, fuel, fodder and soil stabilization and amelioration.

CATIE will have to follow trends in regional and national needs actively. It will increasingly need to be more pro-active than reactive. CATIE may need to place more emphasis on quick, results-oriented applied research. It may need to involve other disciplines as end results are increasingly stressed.

Sustained growth on the part of CATIE is considered to be likely if the institution's activities for the future are well thought out and managed.

12. CATIE and the Private Sector

As the agricultural needs of the Central American region change, there may be an increasing opportunity for CATIE to more actively pursue research and technical assistance activities in the private sector.

Historically, CATIE has not been heavily involved with, or promoted its services to, the private sector which is (theoretically) better able to pay for CATIE's services at fees above the government client level.

A Priori there should be a match between CATIE's crops research skills and an expanding private production and export sector in the region. CATIE has recognized skills in coffee cacao and plantains, etc. The emergence of "non-traditional"

export crops could raise a series of new production questions appropriate for solution by CATIE's technical and analytical skills.

There is a need to do a private sector market assessment and promotion program for CATIE.

13. Pricing of Goods and Services

CATIE has not made an explicit decision regarding its purpose in selling goods and services. If CATIE becomes involved with research projects for private enterprises, it will be even more important to have a clear pricing policy.

CATIE should decide which items are to be priced as:

(1) general contributions to the region; (2) at cost, with a break-even policy; and (3) at market rates including a profit margin.

14. Physical Capacity Limitations

In 1982 and 1983 actual project expenditures have totaled less than the budgeted amounts. This indicates that there have been barriers to spending the project funds made available. Management has identified physical capacity limitations as the major barrier to the full utilization of project funds.

This condition may indicate a need for capital expansion planning, and solicitation of funds for specific capital expansion needs.

15. Realignment of Funding Sources with Institutional Needs

The present structure of revenues, which are primarily tied to specific research projects, does not allow management adequate discretion to fund all areas of need at CATIE, especially long-term needs for facilities, training and CATIE-initiated technical programs. In particular, facilities replacement and expansion and curriculum development are not allocated sufficient funding by the current revenue mix to allow for growth. This problem

could be alleviated by either a larger proportion of basic or "untied" funds, or by solicitation of project funding tied to particular needs as determined by a long range master plan for CATIE.

III. CONCLUSIONS AND RECOMMENDATIONS

Our interviews with agricultural professionals in Guatemala, Honduras, El Salvador, Panama and Costa Rica strongly indicated that CATIE serves as a valuable resource to the region. It is perceived as an effective implementor of projects by sponsoring agencies as well as by the national government counterparts with which it carries out most of its project activities.

CATIE is best known for its capabilities in three areas: applied agricultural research; training and technical assistance. It is a source of scientific agricultural continuity in Central America and "memory" for applied research and technology appropriate to the region. It has an excellent laboratory and the best library facilities available in the region.

CATIE has developed a very good reputation for the quality of its applied research and technical assistance activities in farming systems methodology, animal production, coffee and cacao. It is rapidly building an excellent reputation in the natural resources area. Practically all of these efforts were initiated (with the exception of the cacao and coffee) by ROCAP projects such as the Small Farmer Cropping Systems, Small Farm Production Systems and Fuelwood Projects.

The institute has a reputation for getting involved in the field and is considered an important, regional agricultural institution by the countries. However, while it has tremendous potential for assuming a true regional leadership role in agriculture, CATIE is viewed more as an excellent project implementor than as a regional, agricultural needs identifier.

It has developed excellent working relationships with agricultural institutions involved in agricultural research and natural resources but is faulted for not involving the countries in the planning and design phases of its own projects.

As important as it is to understand what CATIE is, it is equally important to understand what it is not.

CATIE is not a basic research organization. Nor is it a substitute for an effective agricultural extension service at the national level. Its role properly falls between these two poles of the agricultural development spectrum. CATIE cannot directly influence the large scale impact of end-results. However, it does provide valuable assistance in the preliminary activities that eventually make such an impact possible.

CATIE's mandate is assistance to small farmer production. We found in our assessment that this does not provide enough of a focus to either the institution or its clientele to create a strong identity. CATIE has been an innovator in farming systems methodology, but it appears from our discussions with practitioners in the field that it is now up to national institutions to utilize the methodology. This is based on the fact that CATIE's research activities have been successful and that national institutions are increasingly capable of doing it themselves. At the same time CATIE needs to maintain its competitive edge, when compared to institutes at the national level, if it is to continue to maintain a leadership role in its field.

CATIE needs to create a long range plan to guide its core activities, assist it in choosing external donor projects and to advise national governments of longer range agricultural needs.

CATIE does not have an effective internal planning and evaluation process. It appears that CATIE has not carried out any rigorous internal problem identification, resource assessments, or institutional, comparative advantage analyses in the past several years.

Unless it does this CATIE will not be able to play a regional leadership role in agriculture, and articulate a mandate for current and future programs. The institution as well as the member countries and donors, including AID, perceive the institution primarily in a project context.

CATIE should not be required to do this alone. Each of the member governments, by virtue of their membership on the board of directors, should also play an active part. Donor's could assist by providing technical assistance and financing.

In conjunction with this, CATIE should also conduct periodic evaluations of its technical services. Activities should be evaluated in terms of their contribution to overall institutional and departmental objectives and mandates.

CATIE should establish an effective and interactive, long-range planning process which involves the member countries. CATIE needs to take the initiative in this area since the countries indicate that they intend to take a much more active role in determining the direction and programs of CATIE.

Much emphasis in CATIE's long range planning should be given to its basic activities of research, training and technical assistance. These basic activities are those ongoing activities that are paid for separately from the institution's external donor project activities. Their focus sets the tone for long range organizational identity.

CATIE also can serve a useful role at the national government level by providing insights into research and education needs to be considered in the national agricultural plan.

Closely linked to a strategic plan is the need for CATIE to create a long range facilities and equipment plan. Historically CATIE's building and other facilities have been provided by donors, usually in conjunction with specific project activities. Increasingly the institute is finding itself at maximum capacity, for example, in the area of classroom and dormitory facilities. With a long range facilities plan CATIE would be better prepared to identify its needs and systematically program its building and acquisitions. Such a plan would also make collaborative efforts by interested donors easier.

We found that project activities have both good and bad implications for CATIE's ongoing training activities. Core

technical staff are subject to being drawn away from their teaching assignments to fulfill the institutional's project demands. On the other hand, contract staff, employed primarily for project related activities, often can be used to enrich segments of the curriculum, when time permits. We recommend that AID be aware of this phenomenon as it programs project activities with a CATIE component to minimize any disruptive influences on the institution's ongoing training programs.

Before leaving the subject of training, we would like to point out that many of the CATIE graduates eventually end up in the national agricultural systems of their countries, usually as managers and administrators. Therefore, we believe it would be in their best interest if CATIE was to include in future curriculums courses in management and public administration. Also courses in economics would be useful if the emphasis on productivity and production for export continues to grow as a general policy for the region.

Our assessment indicated a need for more peer review of the publications and technical reports of the institute. We are not suggesting that CATIE's efforts in this area are bad or suspect, only that the quality and dissemination of CATIE's published results can be strengthened if subject to more testing and scrutiny by colleagues in the agricultural scientific community.

CATIE also needs to tighten standards for publication and establish different document series. Currently it has a technical series for research results.

Closely associated with peer review is the question of linkages. CATIE has developed strong linkages with national agricultural and natural resource institutions through its in-country, applied research activities and informal and formal training. CATIE has also developed various formal and informal linkages with U.S. and European universities.

However, formal linkages between CATIE and international agricultural research centers such as CIMMYT and CATIE do not

appear possible in the near future because of differences in institutional idiology. CATIE perhaps can act as an intermediary for other international centers not easily accessible to the region.

It is recommended that CATIE identify key areas and universities where increased linkages might prove useful. For example, CATIE could utilize more formal linkages with U.S. universities to upgrade economic analysis and research/extension administration specific to technical areas. AID or other donors might consider funding university chairs or the exchange of professors over several years at CATIE. Also collaborative M.S. or Ph.D programs could be established.

We found that CATIE's incountry representatives have had a very positive effect. They have provided increased exposure of CATIE to the national governments and are also able to provide valuable feedback to CATIE about national concerns and agricultural priorities. Much of this incountry presence has been directly related to AID (ROCAP) funded projects.

Extended projects like AID's, have the potential to significantly impact the size and program dimensions of the CATIE organization. Projects in the area of national resources, management, are responsible for that department's very rapid growth. Conversely, the demise of the IDB's Milk Production Project has seen the animal production department reduced dramatically in size and stature. CATIE, hopefully based upon a long range plan, must ensure that its organizational integrity is maintained regardless of the external donor projects that may be made available to it.

As part of its planning activities, CATIE should be sensitive to sectoral trends, one of which is likely to be an increasing role in agriculture for the private sector. CATIE already has credentials in the areas of germplasm, cacao seeds and macadamias. Both traditional and non-traditional crops from the region may become more in demand for export, most probably to North America. CATIE should began to explore markets with

private producers as their production increases in response to this demand.

To do this successfully, however, CATIE will need to devise a better pricing formula for its services. Its present approach tends to be ad hoc and geared to the national government customer. As such it is primarily intended for cost recovery.

Overhead is an element of cost and pricing and is directly linked to core funding. Basic funds are provided for basic activities. When external projects draw-off basic fund resources the projects should make a proportionate contribution, in the form of overhead, to replenish these funds so that basic activities do not suffer. National governments should recognize that project activities undertaken by CATIE for them, which are in addition to the institution's basic activities, must be reimbursed in addition to their annual quota contributions.

AID may want to consider basic budget funding in program areas which have been identified through collaborative planning between CATIE and the member countries.

CATIE is a valuable institutional resource in the Central American region. Over the years it has established a reputation as an excellent project implementor. It has also developed and made available, with external assistance, a number of services to the region's agricultural sector that would be costly to duplicate elsewhere such as the germplasm collection, library facilities and its experience and facilities to carry out long and short-term agricultural training. The team feels that CATIE has a continuing role to play as a regional institution and that now is an opportune time for the institution to carefully analyze and plan for its future - a new agreement has been signed with the member countries and CATIE's dire financial situation has improved considerably.

AID should consider providing some non-projectized support to the institution to minimize some of the adverse impacts of projectized funding mentioned previously. However such support

should be conditionally based on a long range plan for the institution. Among the possible areas of support are the following:

- . Long-term funding of specific, professional positions as indicated in the long range plan. These could be specialists in cacao or non-traditional crops, livestock specialists in perhaps the areas of small animals research/extension administration and management, agricultural economics and natural resources, particularly soil and water conservation.
- . Funding for upgrading buildings and equipment to carry out short-term training courses. These facilities could be used by other institutions to carry out agricultural training. For example, USDA could then use CATIE facilities to carry out training programs in Spanish. The international research center's could also avail themselves of these regional facilities.
- . Title XII universities so that they could develop linkages in areas identified by CATIE in their long-range plans. This would include faculty and student exchanges and would increase linkages between CATIE and the U.S. universities and, through them, increased peer group interaction.

BRIEFING
INSTITUTIONAL ASSESSMENT
THE TROPICAL AGRICULTURAL RESEARCH AND TRAINING CENTER
CATIE

COOPERS & LYBRAND
FEBRUARY 9, 1984

OBJECTIVES OF ASSESSMENT

1. TO DETERMINE WHAT ROLE CATIE HAS PLAYED IN AGRICULTURAL DEVELOPMENT IN CENTRAL AMERICA AND PANAMA.
2. TO ADDRESS WHAT CONTINUED ROLE IS MOST APPROPRIATE FOR CATIE GIVEN ITS EXISTING AND POTENTIAL CAPABILITIES.
3. TO SUGGEST HOW AID MIGHT MOST EFFECTIVELY USE CATIE IN CARRYING OUT THE AGENCY'S AGRICULTURAL DEVELOPMENT STRATEGY FOR THE REGION.

CONSULTANTS' ASSESSMENT

- o ACTIVE REGIONAL ROLE IN APPLIED RESEARCH AND TECHNOLOGY ADVANCEMENT IN ANIMAL, CROP AND FORESTRY PRODUCTION
- o PARTICULARLY APPLICABLE TO THE NEEDS OF SMALL SCALE, LIMITED RESOURCE FARMING AND FARMING SYSTEMS METHODOLOGY
- o PRINCIPALLY KNOWN FOR RESEARCH, TRAINING AND TECHNICAL ASSISTANCE
- o ACTS AS A CATALYST FOR NEW IDEAS AT NATIONAL LEVEL
- o CHANNELS EXTERNAL DONOR PROJECTS INTO THE COUNTRIES OF THE REGION
- o APPLICABLE TO A NUMBER OF AID POLICY OBJECTIVES; AN EFFECTIVE PROJECT IMPLEMENTOR
- o INCREASING POTENTIAL FOR ASSISTING PRIVATE SECTOR AND NATURAL RESOURCES DEVELOPMENT
- o NEED FOR MORE COMPREHENSIVE LONG RANGE PLANNING
- o NEED TO ASSIST NATIONAL GOVERNMENTS IN LONGER RANGE NEEDS IDENTIFICATION FOR AGRICULTURAL RESEARCH, TRAINING AND TECHNICAL ASSISTANCE
- o NOT A SUBSTITUTE FOR EFFECTIVE NATIONAL EXTENSION SERVICES

I. FINDINGS

A. ORGANIZATIONAL

- o INSTITUTION ORGANIZED ALONG DEPARTMENTAL LINES: 1) ANIMAL PRODUCTION; 2) PLANT PRODUCTION; AND 3) RENEWABLE NATURAL RESOURCES
- o BOARD OF DIRECTORS: REPRESENTATIVES FROM MEMBER COUNTRIES (TWO ON A ROTATIONAL BASIS); COSTA RICAN MINISTER OF AGRICULTURE; DIRECTOR OF IICA; A MEMBER OF IICA'S TECHNICAL COMMITTEE; DIRECTOR OF CATIE
- o BASIC FUNDING PROVIDED BY: GUATEMALA; HONDURAS; EL SALVADOR; COSTA RICA; NICARAGUA; PANAMA; AND THE DOMINICAN REPUBLIC,
- o TRADITIONALLY SHORT TERM IN PLANNING
- o MOST RECENT EMPHASIS ON FINANCIAL INTEGRITY AND STABILITY

B. TECHNICAL

1. MANDATE AND ROLE

- o TO CARRY OUT RESEARCH FOR GENERATING TECHNOLOGY TO ADDRESS THE AGRICULTURAL PROBLEMS OF THE CENTRAL AMERICAN AND CARIBBEAN TROPICS, BENEFITING PRIMARILY SMALL SCALE, LIMITED RESOURCE FARMERS.
- o TO TRAIN PROFESSIONALS FROM LATIN AMERICA AND THE CARIBBEAN TO UPGRADE THE TECHNICAL CAPABILITIES OF NATIONAL INSTITUTION PERSONNEL.
- o TO PROVIDE TECHNICAL ASSISTANCE AND SERVICES TO NATIONAL INSTITUTIONS TO STRENGTHEN THEIR ABILITY TO IMPLEMENT AGRICULTURAL DEVELOPMENT PROGRAMS.

2. PROGRAMS

o RESEARCH

- CROP PRODUCTION: FOOD PRODUCTION TECHNOLOGIES AND SYSTEMS OF LIMITED RESOURCE PRODUCERS IN LOW, WET HUMID, AND DRY HUMID TROPICS (E.G. COFFEE AND COCO).

ALTERNATIVE CROP SYSTEMS FOR SEMI-ARID AND DRY-HUMID TROPICS.

- ANIMAL PRODUCTION: IMPROVED ANIMAL PRODUCTION SYSTEMS FOR LIMITED RESOURCE LIVESTOCK PRODUCERS, E.G. DUAL PURPOSE BEEF/MILK SYSTEMS AND DAIRY MODULES.

LARGE ANIMAL GENETIC IMPROVEMENT
SMALL RUMINANTS AND SWINE

- RENEWABLE NATURAL
RESOURCES:

SILVICULTURE
AGROFORESTRY SYSTEMS
WILDLANDS AND WATERSHED MANAGEMENT

WIDE ACCEPTANCE OF FARMING SYSTEMS METHODOLOGY

SUCCESSFUL IN DEVELOPING CROPPING ALTERNATIVES FOR SMALL FARMERS TO INCREASE INCOME
DERIVED FROM BASIC GRAINS

RESEARCH BEST KNOWN FOR COFFEE AND COCO

ANIMAL PRODUCTION PROGRAM DECLINING

NEED FOR MORE PEER REVIEW OF RESEARCH RESULTS

o TRAINING

- GRADUATE STUDIES: M.S. DEGREES IN CROP PRODUCTION, ANIMAL PRODUCTION AND RENEWABLE NATURAL RESOURCES.
- NON-DEGREE: SHORT COURSES, WORKSHOPS AND SEMINARS AT THE REGIONAL AND COUNTRY LEVEL, E.G., CROP AND ANIMAL PRODUCTION SYSTEMS, DISEASE AND PEST CONTROL, AGROFORESTRY PRACTICES, FUELWOOD PRODUCTION, GENETIC RESOURCES.

64
ADEQUATE GENERAL M.S. PROGRAM; NOT STRONGLY DISCIPLINE-ORIENTED

FACULTY AVAILABILITY INFLUENCED BY PROJECT ACTIVITIES

NEED FOR COURSE WORK IN MANAGEMENT, ADMINISTRATION AND ECONOMICS

- o TECHNICAL ASSISTANCE: PROVIDED TO NATIONAL AGRICULTURAL/NATURAL RESOURCE INSTITUTIONS THROUGH COOPERATIVE AGREEMENTS. PRIMARILY PROJECT RELATED. INCREASING INTEREST IN NONPROJECT TECHNICAL ASSISTANCE ON A DIRECT REIMBURSEABLE BASIS IN NATURAL RESOURCES.
- o TECHNICAL SERVICES: PLANT AND ANIMAL GERMPLASM; TISSUE CULTURE PROPAGATION; TECHNICAL INFORMATION; SEED BANK; LIBRARY; DOCUMENTATION CENTER

PROGRAMS PERCEIVED AS "GENERALLY GOOD TO EXCELLENT"

PROVIDES COMMUNICATIONS BETWEEN BOTH PARTIES

AID PRIORITIES

- o FOOD AND AGRICULTURAL DEVELOPMENT, ESPECIALLY AS IT RELATES TO INCREASED SMALL FARM INCOME AND PRODUCTIVITY
- o IN THE FOREFRONT OF NATURAL RESOURCES RESEARCH, TRAINING AND TECHNICAL ASSISTANCE

15

- o PROVIDES IMPROVED PLANT GERMPLASM TO PRIVATE INDUSTRY, AND APPLIED RESEARCH
- o TECHNOLOGY TRAINING AND INSTITUTIONAL BUILDING IN NATIONAL AGRICULTURAL ORGANIZATIONS

C. FINANCIAL

- o ANNUAL REVENUES OF ⁸³\$8.4 MILLION WITH PROJECTED GROWTH OF 22% FOR 1984 AND 1985
- o CONTRACT PROJECTS PROVIDED OVER 75% OF TOTAL REVENUES (AID PROVIDED 30% OF TOTAL REVENUES)
- o MEMBER COUNTRIES CONTRIBUTE \$50,000 ANNUALLY
- o PERSONNEL EXPENSES = 52% OF TOTAL EXPENSES
- o IICA CONTRIBUTES UP TO 50% OF ITS TOTAL ANNUAL BUDGET
- o COMMERCIAL PRODUCTION IS PROJECTED TO BE \$1.3 MILLION FOR 1983
- o PROJECT RELATED EXPENSES FOR 1982 BY COUNTRY WERE:

8.4
 1.3

 7.1
 5.5 plus

 1.6

| | |
|--------------------------------|-----------|
| COSTA RICA (OUTSIDE TURRIALBA) | \$268,313 |
| EL SALVADOR | 197,935 |
| GUATEMALA | 218,053 |
| HONDURAS | 546,994 |
| NICARAGUA | 654,166 |
| PANAMA | 219,188 |
| OTHER AREAS | 21,315 |

II. ISSUES

1. VARYING COUNTRY NEEDS AND PLANNING
2. CATIE'S ROLE
3. CATIE'S RELATIVE STRENGTH
4. IMAGE AND IDENTITY
5. LINKAGES
6. CATIE AND ITS SUPPORT OF AID POLICIES
7. IMPACT OF MULTIPLE DONORS
8. USE OF CORE FUNDS
9. CURRENT CHANGES THAT AFFECT CATIE
10. IMPACT OF EXTERNALLY-FUNDED PROJECTS
11. CHANGES IN CATIE'S MIX OF SERVICES
12. CATIE AND THE PRIVATE SECTOR
13. PRICING OF GOODS AND SERVICES

14. PHYSICAL CAPACITY LIMITATIONS

25. REALIGNMENT OF FUNDING SOURCES WITH NEEDS

III. RECOMMENDATIONS

1. CREATE A LONG-RANGE PLAN FOR BASIC ACTIVITIES, SELECTING DONOR PROJECTS AND FOR IDENTIFYING LONGER RANGE AGRICULTURAL NEEDS FOR THE REGION.
2. INCREASE THE PARTICIPATION OF THE BOARD OF DIRECTORS.
3. INVOLVE THE MEMBER COUNTRIES IN CATIE PLANNING.
4. PLACE MORE EMPHASIS ON THE PLANNING AND LONG-RANGE EXECUTION OF BASIC ACTIVITIES.
5. CREATE A LONG-RANGE FACILITIES PLAN.
6. AID CONSIDER THE IMPACT OF ITS PROJECTS ON CATIE'S BASIC ACTIVITIES
7. INCLUDE COURSES IN MANAGEMENT, PUBLIC ADMINISTRATION AND ECONOMICS IN THE M.S. PROGRAM
8. INCREASE PEER REVIEW OF CATIE PUBLICATIONS AND TECHNICAL REPORTS.
9. INCREASE FORMAL LINKAGES WITH U.S. UNIVERSITIES.
10. MAINTAIN ORGANIZATION INTEGRITY.
11. ACTIVELY PURSUE PRIVATE SECTOR ASSISTANCE.
12. DEVISE BETTER PRICING FOR TECHNICAL SERVICES.