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**CONSULTATIVE GROUP ON INTERNATIONAL
AGRICULTURAL RESEARCH**

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**Report of the Second External Management Review
of the
Centro Internacional de Agricultura Tropical
(CIAT)**

Panel Members **Vijay S Vyas (Chairman)**
 Kenneth Hoadley
 Joan H Joshi

Resource Persons **Selcuk Ozgediz (CGIAR Secretariat)**
 Elizabeth Field (CGIAR Secretariat)

U I F T O - 1 1
DOCUMENTATION

**CGIAR Secretariat
March 1990**

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Consultative Group on International Agricultural Research

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March 28, 1990

Mr W David Hopper
Chairman, CGIAR
The World Bank
1818 H Street, N W
Washington, D C 20433

Dear Mr Hopper

I take pleasure in submitting to you for the consideration of the CGIAR the Second External Management Review (EMR) of CIAT. The panel we commissioned to conduct the review on behalf of the Group was chaired by Mr Vijay Vyas, Director of the Institute of Development Studies in Jaipur and former Director of the Indian Institute of Management in Ahmedabad, India. Mr Vyas has had close association with the CGIAR, particularly during his recent tenure at the World Bank as Senior Adviser in the Agriculture and Rural Development Department. Mr Vyas' colleagues on the panel included Ms Joan Joshi, who previously held several CGIAR management review assignments and was a former Director of Administration at ICARDA, and Mr Kenneth Hoadley, Dean of the Arthur D Little Management Education Institute who has had long management-related experience in several Latin American countries. The Group owes them a debt of gratitude for carrying out a highly professional review.

Debt is also owed to CIAT's board and management for preparing an excellent set of background documents and for their full cooperation with the review teams throughout the exercise. We are thankful to Professor Frederick Hutchinson, CIAT's Board Chairman, for allowing the Secretariat to pretest a board survey questionnaire during this review. The questionnaire was subsequently revised for use in other management reviews.

The first EMR, conducted in 1984, had found CIAT to be a generally well-managed institution and had made some suggestions for improving finance and administration and the functioning of the board. The second EMR notes that the changes suggested by the first EMR have been made and that CIAT is now an even better managed institution, despite the increased complexity of its programs, growth of staff and decentralization of operations since 1984.

The panel's recommendations for further improving CIAT's management effectiveness are described in the Executive Summary of the report. Several of these relate to distribution of authority within the Center. This is a matter the new Director General should

address following the finalization of CIAT's strategic plan which could lead to changes in organizational structure. The panel's suggestions on recruitment are important, as the effectiveness of CIAT's programs depends on the Center's ability to recruit top quality scientists. Most of the remaining recommendations of the EMR have to do with second generation management issues resulting from the improvements made over the last five years and are of a fine-tuning nature.

In their initial response to the EMR (also attached), Messrs Hutchinson and John Nickel, CIAT's recently retired Center Director, note the center's general agreement with the overall conclusions and recommendations of the review.

CIAT's experience in three management areas may be of particular interest to the other centers. First, CIAT has developed one of the most (if not the most) advanced management information systems among the centers in the area of finance and administration. Centers developing similar computerized systems could benefit from learning about CIAT's experience.

Second, CIAT recently underwent a comprehensive culture audit. As questions surrounding organizational culture and values is occupying the minds of the managers of other centers and culture audit methodologies worldwide are still in an evolutionary stage, there is value in CIAT's sharing its experience in this area with other interested centers.

Third, like a few other centers, CIAT is exploring the possibility of entering into a debt conversion scheme. Although conditions for such schemes differ from country to country, as the panel suggests, there is value in having a set of broad system-wide guidelines covering debt swap operations. The Secretariat has already circulated to the centers a set of guidelines covering this area.

We suggest that you ask the Group to endorse the EMR. There is no need for Group-initiated follow-up action concerning this review. Generally speaking, this is a good news EMR. The board has already taken action as follow-up to the review and intends to monitor management's progress in the implementation of the panel's recommendations.

Sincerely,



Alexander von der Osten
Executive Secretary

Attachments

30 September, 1989

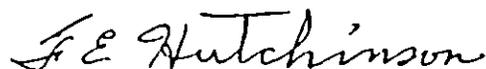
Dr Alexander von der Osten
Executive Secretary
CGIAR
Washington, D C

Dear Dr von der Osten

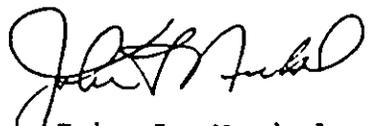
The CIAT Board and Management commend the CGIAR Secretariat for the selection of a well qualified External Management Review (EMR) panel, well qualified both in terms of professional management expertise, extensive management experience, and personal qualities of perceptive insight and sensitivity. We also commend the team members for the great diligence, thoroughness, and sound judgment with which they went about their important tasks, resulting in a rigorous appraisal elucidated in a comprehensive yet very readable report. The team members were particularly thorough and systematic in the large numbers of scheduled interviews with a large number of persons representing all relevant sections of the Center and all levels of staff, in addition they displayed a remarkable openness in making themselves available to receive and listen to the views of staff and spouses who wished to meet them, many of whom took advantage of this invitation. We particularly wish to record our appreciation for the sensitive and mature leadership given to this effort by the Chairman of the EMR.

The CIAT Management, the Board Audit and Operations Review Committee, and the full Board of Trustees have thoroughly reviewed the information contained in the written and verbal reports of the EMR Panel. We greatly appreciate the very positive assessment and are in general agreement with the overall conclusions and recommendations made. Our response to the chapter on Organizational Structure and Process (Chapter 3 of the EMR and Chapter 6 of the EPR reports) is contained in our response to the EPR report. With regard to the rest of the EMR report, as noted in the report, actions to correct many of the relatively minor deficiencies noted were already underway, actions on the remainder of the recommendations will be carefully considered once the views of the TAC and the CGIAR on these matters are known. As an interim measure the CIAT Board has requested Management to give a detailed report to the next meeting of the Board to elucidate what actions have been taken and are planned in response to each of the recommendations, suggestions and observations made.

Respectfully submitted,



Frederick Hutchinson
Chairman, Board of Trustees



John L. Nickel
Director General

29 September 1989

Mr Alexander von der Osten
Executive Secretary
CGIAR Secretariat
The World Bank
1818 H Street, NW
Washington, DC 20433
U S A

Dear Mr von der Osten

It gives me great pleasure to present to you, on behalf of the members of the External Management Review Panel, the report of the second External Management Review of CIAT. We consider it a privilege to have had an opportunity to review the management and administrative systems and processes of this unique institution. Let me state at the outset that we consider CIAT to be a well-managed institution.

In all of our interactions with CIAT staff and with CIAT's partners, there was one common and recurring theme, and that was unreserved praise for John Nickel's leadership and the inspiration he provided CIAT to think constructively and yet boldly. The Panel fully endorses the sentiments expressed and the tributes paid to this very gifted leader and able manager, who more than anyone else contributed to making CIAT what it is today, and is now leaving behind him a mature and well-functioning institution.

Since the first External Management Review, CIAT has changed and upgraded its administration and management systems. Yet as a living and dynamic organization it must always be ready to respond to newer problems and emerging issues. Some of these are "second-generation" problems, that is, the secondary and tertiary effects of measures already undertaken to overcome the initial hurdles. Others will inevitably arise as the organization grows, many of which will be traceable to changes in the Center's external environment. We found in CIAT a willingness to recognize the important changes in its environment, both external and internal, and to take corrective action. This openness provided a very favorable ground for the Panel to interact with staff and management. The willingness to interact was coupled with a readiness to assist the Panel with all necessary documentation.

I would like to say a few words about the manner in which the Panel approached its work. Within the time at our disposal, we made it a point to meet with as many staff as possible and to draw on their accumulated wisdom and insights.

There was another reason to interview a large number of staff at all levels. An organization lives and breathes through its personnel, and it was important for us to know how the management and administrative structures and practices affect them and how, from their respective positions, they react to the organizational milieu. These interviews were not restricted to the Palmira campus. We visited as many outreach sites as possible, as well as some of the research stations in Colombia. Another important source of information and ideas was the interviews with a number of trustees, representatives of donors, and a sample of CIAT's clients. Finally, we met with a select group of managers of the national agriculture and development agencies in Colombia to understand CIAT's position in its host country. We do believe that we have had the opportunity, in the short time available to us, to "touch base" with all the key partners of CIAT.

Even with the vast information available to us, we do not feel competent to make analyses and recommendations on all aspects of management. We have been selective and have focused on those issues that in our view merit special consideration. Also, in discussing these issues, our basic approach has been to maintain a forward look. We have not taken upon ourselves the role of auditors. While making our recommendations, we have taken into account the organizational and managerial implications of CIAT's strategy for the coming years. Another aspect that has influenced our thinking is that, in a by and large smoothly running organization, the changes we suggest should not be disruptive, they should be in tune with the ethos of the organization.

Let me close this letter by pointing out explicitly that many of our comments and recommendations have CGIAR-wide implications. CIAT is not an island. It can cope with the issues and problems identified and make significant strides toward achieving its mandate, if it is encouraged and supported by the system on the vital points made in this report. CIAT management has, as we do, full trust that the needed support will be forthcoming.

This was a challenging assignment. We enjoyed it and trust that with this report we have contributed to some extent to strengthening the structure and processes of this fine Center.

Sincerely yours,

Vijay S Vyas

Vijay S Vyas
Chairman, EMR Panel

EXECUTIVE SUMMARY OF THE EXTERNAL MANAGEMENT REVIEW

CIAT is a well-managed institution. This was the main conclusion of the first External Management Review, which took place in 1984, and it is very much the impression of this Panel.

CIAT Today Since 1984, many changes have taken place in CIAT's internal and external environment. It is a much larger institution, its research programs are more complex, infrastructure and facilities are more developed, and outreach activities are much more extensive. As a result of changes in the external environment, the Center has had to go beyond its primary objective of rapid increase in food production. The issues of sustainability, environmental protection, equity, and gender have had to be accommodated in its plans and programs. The funding position is becoming increasingly difficult, hence, CIAT must be more proactive in the management of its finances. Finally, there is a growing tension between the need and the desire for upstream research and institution-building tasks. In general, CIAT has responded to these changes judiciously and well.

Legal Status and Governance In the past year, CIAT attained international organization status. Although the process was lengthy and difficult, the Center handled it successfully. With this new status, CIAT is now able to operate with greater confidence, both within its host country and in other parts of the world.

CIAT's relationship with Colombian institutions is cordial and constructive. It also has agreements with and staff posted in 12 countries in Latin America, Africa, and Asia, there are less formal arrangements with a number of other countries that permit the Center to work collaboratively with local scientists, distribute nurseries, collect germplasm, etc. In the Panel's view, these relationships are generally excellent.

The Panel reviewed the Board's performance in the areas of policy-making, oversight, management of Board operations, and relationship with management as well as the process of the selection of the new Director General. Overall, the Panel considers the performance of the CIAT Board to be satisfactory. Its committees appear to operate effectively, although the Panel recommends that the terms of reference of the Executive Committee and the Audit and Operations Review Committee be defined more clearly.

Organizational Structure and Process The External Management and Program Review Panels have jointly examined the organizational structure and process of CIAT. Panel members are unanimous in their judgment that CIAT is skillfully managed and its leadership

is well qualified and resourceful. As a recently conducted cultural audit suggests, the management and the staff at all levels widely share the norm to uphold high standards of both research and management in pursuing CIAT's mission.

The Panels believe that the principle of participatory management could be strengthened to the benefit of CIAT as a whole and recommend that top management be redefined to incorporate the third level in the hierarchy (the Program Leaders) and that a Management Committee be established, to be chaired by the Director General and to meet regularly and frequently, with an advance agenda and formal recorded minutes.

Organizational structures invariably evolve over time, based on historical circumstances as well as the talents and abilities of existing personnel. The two Panels recommend that the incoming Director General, in consultation with the Board of Trustees, evaluate the current structure in the light of the criteria listed in Chapter 3 of this report.

The successful identification of upstream research opportunities, particularly in biotechnology and virology, is a strategic goal of CIAT. To promote this, the Panels recommend the appointment of a Coordinator of Research Support to supervise the work of CIAT's advanced biology units as well as all other research services.

CIAT's strategic plan asserts the intention to continue management of its research on the basis of multidisciplinary teams organized around single commodities and supported by specialized research units. It does recognize, however, the importance of maintaining excellence in relevant scientific disciplines. The Panels suggest that the Center design mechanisms to promote intradisciplinary interaction.

The Panels endorse the close integration of CIAT's outposted scientists in the four commodity programs and commend the collegial relationships they have developed with the national agricultural research services with which they work. There is a need, however, for CIAT headquarters to help them reduce time spent on financial management and administrative chores.

Planning, Budgeting, and Review Over the past two years, CIAT has engaged in an elaborate process of strategic planning and, at the time of this review, has a plan in final draft. The next step is to revise its medium-term and annual operational plans to better reflect these strategic objectives.

CIAT's budgeting and reporting system has been improved since the last EMR, and the final budget for each cost center serves as a firm plan against which expenses can be controlled. However, participation in the budgeting process has not been as broad as it

might be, and the Panel recommends that the process be revised to include consultation on all aspects of the budget, including staffing patterns and costs, with those who will have the responsibility for budget implementation, down to the level of each cost center. This revision, by building staff commitment, should enhance budget compliance.

Management of Human Resources CIAT has an extremely well-qualified local staff, many of whom have been employed by the Center for an unusually long period. The personnel function is highly professional and uses careful analyses of the local employment market to set salaries and benefits. The fact that CIAT has shown great sensitivity to the concerns of the local staff is reflected in the positive results of the recently completed cultural audit. Partly in response to strongly felt interest, a training needs assessment is now underway. We recommend that management pursue vigorously the assessment of needs in the area of staff training and career development, design a more systematic set of policies to respond to the identified needs, and commit adequate resources to assure their realization. Communications with this staff group is another area that needs attention.

There are currently 86 Senior Staff positions at CIAT, in addition to 18 Postdoctoral Fellowships and 16 Senior Research Fellowships. Management pays considerable attention to recruitment for these positions, each of which represents a substantial investment by the Center and an important element in its ability to reach strategic goals. It needs to investigate remedies to recruitment constraints. To assist members of the Senior Staff to better fulfill their management responsibilities, we recommend that all first-line supervisors be trained in financial management as is relevant to their assignments, as well as in supervisory skills. To meet the career development interests of staff, CIAT has recently instituted a policy of short-term study leaves. As another measure, that could as well help scientists translate their substantial data into scientific publications, we recommend that CIAT seek or help identify funding for and recruit well-qualified Masters and Ph D candidates to conduct their dissertation research under the supervision of CIAT Senior Staff scientists.

CIAT has shown itself to be committed to planning at every level. We believe that preparation of an annual workplan by each individual scientist is a rung on the planning continuum that will ultimately ensure fulfillment of the strategic goals. In addition, such workplans become the basis for an equitable and objective performance evaluation and a means for course correction for the subsequent year. Therefore, we recommend that CIAT design and implement a system of individual performance planning and evaluation.

Financial Management Financial management at CIAT has improved substantially since the last EMR and is one of CIAT's

areas of strength The development and implementation of an improved management information system has led to important improvements in financial control and reporting, especially at the Palmira headquarters We recommend that efforts be continued to extend these improvements to CIAT's outposted staff

Changes in the international economy have affected CIAT by both altering its usual cash flow pattern and by causing changes in its expected income due to fluctuations in currency exchange rates We recommend that CIAT increase its working capital reserves to protect itself against delays in the receipt of contributions from donors, and that it pursue, with the CGIAR and other centers, the development of innovative funding mechanisms so as to improve its long-term financial stability We also recommend that the CGIAR Secretariat and the centers jointly establish procedures so as to take advantage of opportunities for debt conversion operations

General Administration CIAT's general administration was commended by the Panel not only for its service and efficiency but also for its deep commitment to improving its own capabilities in providing the necessary support for the Center's research operations

The CIAT of tomorrow may differ significantly from the CIAT of today programmatically and in terms of its mandate, yet we believe its administrative structure and managerial processes have imparted a resilience to the institution to cope with the uncertainties of the future

ACKNOWLEDGMENTS

In conducting an assignment of the nature we undertook, debts of gratitude are contracted with many people, in fact too many to mention individually. The members of the Board of Trustees, a few representatives of donors, and the leaders of NARS and managers of the agricultural and development agencies in the host country, whom we contacted in connection with this review, were generous with their time and shared unhesitatingly their assessment as well as their vision of CIAT. However, it was with the CIAT staff that most of the learning experience took place. John Nickel, Doug Laing, Filemn Torres, and Fritz Kramer, together with their outstanding team of Program Leaders, scientists, and research and support staff, were as helpful as one could ask. We found in our two secretaries, Delia de Franco and Gloria de Escobar, and our editor Bill Hardy, diligence and conscientiousness that went much beyond the normal call of duty. Usually such short-period assignments generate anxiety and even tension. That none of this happened in our case was largely due to the warmth, care, and understanding of the people with whom we interacted.

We have two more professional debts to acknowledge. We were fortunate to have an outstanding team of External Program Review members to interact with, and we had excellent support and guidance from Selcuk Ozgediz of the CGIAR Secretariat and, part of the time, his able colleague Elizabeth Field. We are grateful to each one of them.

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1 CIAT TODAY THE CENTER AND ITS ENVIRONMENT

1 1 Introduction

The first External Management Review (EMR) of CIAT was undertaken in 1984. The review began with the statement, "A close-up view of CIAT from a management point of view discloses a very dynamic, active and apparently successful international research center. A few suggestions were made to improve the functioning of the Center. The review concluded that "our study has revealed nothing that cannot be speedily corrected to ensure continued success."

At the very outset, we would like to endorse both statements. What we have observed is that CIAT is, without question, a well-managed institution. Whatever problems or issues we have raised in the report are symptomatic of a growing, dynamic, and dedicated institution and should be seen in that spirit.

One of the objectives of this report is to follow-up on the recommendations made by the first EMR and to comment on their implementation. There are two other, and probably more important, objectives that we have kept before ourselves. First, since the report of the first EMR a number of significant changes have taken place in the external environment facing CIAT. We have taken upon ourselves the task of examining the effectiveness of the management response in coping with these changes. Second, CIAT has developed, through an elaborate consultative process, a strategic plan for the future. It may be helpful to comment on the extent to which the present structures, procedures, and style of management will be helpful in fulfilling the objectives of the strategic plan.

The Panel that conducted this review was comprised of Vijay Vyas (chairman), Joan Joshi, and Kenneth Hoadley. (See Appendix 5 for brief biographies of the members.) We, along with the chairman of the EPR, assembled in the CGIAR offices in June 1989 for a briefing by Selcuk Ozgediz and other CGIAR Secretariat staff on management reviews generally and the CIAT review in particular, then visited CIAT headquarters at Cali twice. The first visit was arranged to acquaint ourselves generally with the organization and functioning of CIAT. The second visit, in September 1989, was to follow-up with discussion on important issues with staff and management, and to finalize our report. Between the two visits to CIAT, the individual members visited the outreach programs in Thailand, Brazil, Costa Rica, and in eastern and southern Africa. Meetings with a few Board members and donor representatives were also organized. Both visits to CIAT coincided with the visits of the External Program Review Panel and presented an opportunity for joint consultation on issues of common concern. The results of these deliberations are reflected primarily in the chapter on Organizational Structure and Process.

1 2 First EMR and Follow-up

The first External Management Review made in all 44 recommendations, observations, and suggestions. The principal ones, however, were few and pertained to finance and administration, which at the time of the first review were considered relatively weaker than other areas of CIAT's management. The CIAT management responded to these suggestions positively and promptly. A thorough overhaul of the financial structure and functions was initiated. The results of the efforts in these two areas are more closely examined in Chapters 6 and 7 of this report.

The first EMR also made suggestions with respect to the functioning of the Board, mainly in the area of Board oversight on audits, assets, and inventories. It recommended a change in membership of the nominating committee with the responsibility for proposing new Board members. It goes to the credit of the Board that the recommendations in this regard were acted upon expeditiously. The first EMR panel also emphasized the need for formal management training for key functionaries, and with the support of the CGIAR Secretariat, CIAT's top management personnel subsequently took part in such training programs. Similarly, the recommendation on the review of the research support units, particularly the Seed Unit, was accepted and acted upon.

It is quite clear to us that the Board and the management of CIAT examined the first EMR's recommendations very carefully and acted on them promptly and in a constructive manner. This is reflected, among other evidence, in the detailed response to the recommendations made available to the CGIAR within a few months of the submission of the Panel's report.

Now that these initial corrections have been made, our agenda in preparing this report is to help CIAT cope with second generation problems in resource management, human resource development, governance structures, planning, and budgeting.

1 3 The Changed Environment

The CIAT of 1989, however, is not the CIAT of 1984. For one thing it is a much larger institution. Its research programs are more complex, its infrastructure and facilities more developed, and its outreach activities much more extensive. We will be commenting on internal growth and resulting complexities of operations in subsequent chapters. However, it is important to underline that significant changes have also taken place in the external environment facing the institution. Among these changes, the following clearly stand out:

- A In its initial years, CIAT's primary objective was to generate technologies for a rapid increase in food production. In a food-deficit world, that objective has an obvious appeal. There are still regions of the world with serious food shortages, and large sections of the world population that do not have the purchasing power to obtain adequate food supplies. However, for the time being at least, global food supplies are outstripping global population growth. This development, together with greater consciousness of environmental, gender, and equity issues, has caused a deemphasis on the drive for high-yielding varieties to which most of the efforts of the centers, including CIAT, had been directed. Thus, the organizational structure that focused essentially on germplasm improvement had to be modified to accommodate other objectives.
- B Until recently, CIAT, and for that matter the whole CGIAR system, was relatively well-funded. The mission of the Center in the context of the urgent need to increase food supplies fully justified it. But the situation has now changed substantially. The growth in CGIAR resources is decelerating, and there are many more claimants to them. In recent years, cash flow has also become quite a serious problem. One of the inevitable implications is a greater resort to bilateral funding, and this has resulted in a larger number of special projects and made the integration and coordination of the Center's program more difficult. Another corollary is progressively more stringent reporting requirements.
- C There is a growing tension between the need and the desire for upstream research and institution building. The scientists in centers such as CIAT are fully cognizant of the need to upgrade their knowledge in some of the frontier areas of science and to use advanced skills in conducting their scientific work. Yet many of the clients they work with, i.e., the national agricultural research systems (NARS), place a higher priority on assistance in the transfer and adaptation of technologies from the centers to their respective countries as well as training of local staff in research methodology.

1.4 CIAT's Response

CIAT has responded to these changes with good judgment. Some of the organizational changes emanating from, or inspired by, the external stimuli should be noted.

- The Center responded to changes summarized in (A) by greater collaborative arrangements between different programs, greater concern for resource conservation, a greater role given to social scientists, and greater emphasis on technology for ecosystems
- It responded to changes summarized in (B) by systematization and institutionalization of financial management, of reporting procedures, and other aspects of administration, a vigorous search for special funds, and greater attention to reducing costs
- The Center responded to changes summarized in (C) by creation of research support units, most of which cater to "upstream" research, assignment of Postdoctoral Fellows to work on "frontier areas", closer collaboration with institutions of advanced learning, encouragement to scientists from the same discipline to work on themes cutting across programs, greater emphasis on outreach activities, a more discriminating approach in dealing with different NARS, and a greater emphasis on team function and "network building"

Not all these responses were new nor were all changes equally effective. Many of the activities listed above were initiated quite some time back, but recent years have seen a significant enhancement. In the following chapters, we examine in greater detail how some of these activities are organized and managed and with what results.

2 CIAT'S LEGAL STATUS AND GOVERNANCE

2 1 Legal Status

CIAT was originally established through an agreement between the Colombian Government and the Rockefeller Foundation signed on May 12, 1967. The agreement, stipulating that the Center would be incorporated in Colombia as an autonomous, philanthropic, non-profit, tax-exempt organization to exist over an indefinite period," was recognized by the Ministry of Justice in a resolution of December 4 of the same year. A Colombian Government decree (Decree No 301) signed by the President of the Republic on March 7, 1968, outlined the privileges and prerogatives of the Center itself and of its internationally recruited staff.

As a result of changes in Colombian law and socioeconomic conditions, as well as CIAT's increasing involvement in countries outside Colombia and even Latin America, an effort to obtain full-fledged international status for the Center began in 1982. The World Bank and the United Nations Development Programme signed an agreement establishing the new CIAT on May 28, 1986, recognizing the Center as an international organization with full juridical personality, albeit retaining the same by-laws and Board of Trustees as the original Colombian corporation. A new Host Country Agreement was approved on May 5, 1987, subsequently ratified by the Colombian Congress, and signed into law (Law 29 of 1988) by President Virgilio Barco Vargas on March 18, 1988. The law went into effect on May 14, 1988.

Law 29 guarantees to CIAT the following

- inviolability of its headquarters facilities, of the Director General's residence (a Cali property belonging to CIAT), and of its files,
- exemption from taxation of the Center's operations and of salaries of its internationally recruited staff (except for Colombian nationals),
- freedom to import and export equipment/supplies and genetic material,
- the right to handle and operate with different currencies,
- immunity for the Director General and members of the Board of Trustees, and
- other privileges with respect to visas, international staff, and communications

The old CIAT was dissolved on December 31, 1988, at which time staff resigned their positions and signed waivers releasing the Colombian corporation of any liability. They were affirmed as employees of CIAT International on January 1, 1989.

CIAT management indicates that relations with the Colombian Government, always positive, have been greatly eased under these new arrangements. The Center is able to operate in greater confidence and without the need to negotiate individual transactions. The international organization status was a significant achievement for CIAT, which evolved after considerable investigation, and may be instructive for other centers in the system.^{1/}

1/ It took almost six years for CIAT to attain international organization status, primarily because a process consistent with international law had never been defined.

An original plan put forward by the legal department of the World Bank called for the conclusion of an agreement between the World Bank and UNDP creating CIAT International, and a posterior agreement between CIAT and the Government of Colombia in order for CIAT to maintain its headquarters in Colombia.

According to CIAT's legal adviser, such an arrangement would not be valid, since neither the World Bank nor UNDP had the authority to create an international organization. He argued that an international organization could only be created via an agreement among sovereign states, either in a bilateral or multilateral form. In order to provide CIAT with the flexibility to operate throughout the world as an international organization, it was felt that CIAT International should be created by a resolution of the United Nations' General Assembly, which, under international law, would represent an action taken by sovereign states.

After considerable discussion, in which the World Bank's outside legal advisers concurred with CIAT's legal adviser, the issue was brought before the UN General Assembly under the co-sponsorship of the World Bank and the UNDP, in their capacities as specialized agencies of the UN. A resolution, in the form of approval of a UN Secretariat Report, World Bank and UNDP, acting collectively, to create CIAT International, and a subsequent agreement was signed by the two agencies, citing the authority given to them by the General Assembly. Subsequent negotiations between CIAT and the Government of Colombia led to a headquarters agreement and the transfer of CIAT's assets to the new international organization.

2 1 1 Relations with the host country CIAT's main contact in its host country is the National Agricultural Research Institute of Colombia (ICA), but the Center has established very cordial and constructive relationships with other Colombian development and producers' organizations in recent years. In visits to these agencies, we gathered the strong impression that CIAT's programs are considered well designed and, in general, valuable to the country. As should be expected, there are elements of competitiveness in these relationships and, occasionally, a real or perceived clash of interest. At times, for example, CIAT may give priority to a research activity critical to other countries the Center seeks to serve, but less important to Colombia.

We were especially impressed, however, with the example of effective collaboration evident between CIAT and ICA at Carimagua in the Colombian Llanos. The station there is owned by ICA but jointly managed and funded by ICA and CIAT's Tropical Pastures Program. Carefully selected research activities and elaborate and high-level coordination provided by the senior managers of the two institutions are mainly responsible for the apparent success of this enterprise.

The Colombian institutions would also like CIAT to play an intermediary role in collaboration with other IARCs (e.g., ICRISAT in its work in semi-arid areas), and we suggest some attention be given to this matter. We recognize that this raises a CGIAR-wide question on the recognition of a center as a lead institution for a given region.

2 1 2 Relations with other countries CIAT also has agreements with, and staff posted in, Brazil, Costa Rica, the Dominican Republic, Ecuador, Ethiopia, Guatemala, Haiti, Peru, Rwanda, Tanzania, Thailand, and Uganda. In general, these agreements are concluded with Ministries of Agriculture, sometimes with Ministry of Foreign Affairs involvement, to guarantee CIAT certain privileges and immunities and to stipulate counterpart support from the country in question. In the case of Latin America, CIAT has signed an umbrella agreement with the Inter-American Institute for Cooperation on Agriculture (IICA), a specialized agency of the Organization of American States (OAS) headquartered in Costa Rica. Under the terms of this accord, subagreements pertaining to individual countries in which CIAT plans to work are drawn up. There are less formal agreements with Ministries of Agriculture in a number of other countries that enable CIAT to work collaboratively with local scientists, distribute nurseries, collect germplasm, etc. They seem to be serving CIAT well.

Again, in countries visited by members of the Panel, we observed relations with national programs to be cordial and cooperative. As noted elsewhere, the CIAT staff selected for outreach activities have, in general, been responsive to both the

needs and sensitivities of national staff and NARS leadership, and they appear to be welcome collaborators

2 2 Governance

CIAT's constitution limits membership on the Center's Board of Trustees to 17, including three members, designated by the host country and the Director General, who serve ex officio. The 1988-89 Board includes 17 voting members, representing Latin America (7), the United States and Canada (4), Europe (3), Asia (2), and Africa (1), as well as one member emeritus (Colombian). There are two female members. (See Table 2.1 on the composition of the Board.)

The Board elects its own members beyond those serving ex officio but must select three from among persons nominated by the CGIAR. Members serve for three-year terms and are eligible for reelection once. The Board also elects a Chairman and Vice-Chairman from among its members. A majority of the members constitutes a quorum, decisions are taken by a majority of the votes cast. The full Board of Trustees normally meets once a year, occasionally twice, such as in a year of external reviews. The Assistant to the Director General serves as Secretary.

The constitution mandates establishment of an Executive Committee consisting of seven members, including the Chairman, the Director General, and at least one citizen of the host country. Ordinarily, this committee meets twice annually and is responsible for all Board functions between full Board meetings, including review of the budget.

In addition, the Board has established a Program Committee, usually with six members, that meets twice each year, once in conjunction with the annual internal review, and is primarily responsible for oversight of CIAT's scientific work, a Nominations Committee of two or three, meeting once a year, and an Audit and Operations Review Committee of four members that also meets once a year. The functions of the last-named committee have recently been expanded beyond those normally assigned audit committees. Its members, now including several persons elected to the Board on the basis of their management experience, will consider the efficient utilization of resources as well as the effectiveness of financial controls. This was consistent with a recommendation of the first EMR.

In response to another concern of the first review Panel, the Board makes an effort to elect new members to fill unexpired terms for a period that will ensure Board continuity, i.e., ensuring that only a reasonable number of new members are admitted at any given time. In many cases, Board members do serve for the full two terms permitted in the constitution, however, and committee chairs tend

Table 2 1 CIAT s current Board members

Name	Board committees ¹	Sex	Nationality	Discipline	Nominated by	Start term	End term
CARLSON W	M AC M NC	M	United States	Administration	Board	06/01/87	05/31/90
DE VACCARO L	M PC	F	Peru	Genetics	Board	06/01/88	05/31/91
FLAVELL R	M PC	M	United Kingdom	Genetics	Board	06/01/88	05/31/91
GAPASIN D	M PC M SC	F	Philippines	Entomology	Board	06/01/88	04/30/91
HUTCHINSON F	C BOT C-NC C EC C-SC	M	United States	Agronomy	Board	06/01/85	05/31/91
KANEDA C		M	Japan	Agronomy	Board	10/01/89	09/31/92
MONTES G	M EC	M	Colombia	Economics	Member Co	11/01/86	12/31/89
MOSQUERA MEZA R	M AC	M	Colombia	Economics	Member Co	06/01/88	05/31/90
NICKEL J	M EC	M	United States	Entomology	Ex officio	01/01/74	02/28/89
NOESBERGER J	C PC M EC	M	Switzerland	Plant Physiology	Board	06/01/87	05/31/89
PETIT M	M PC	M	France	Agricultural Economics	CGIAR	06/01/87	05/31/90
ROSAS G		M	Colombia	Economics	Member Co	06/01/88	05/31/90
SALAZAR J	C AC M EC	M	Colombia	Veterinary Science	Board	06/01/87	05/31/90
TANNER J	M AC	M	Canada	Crop Physiology	CGIAR	06/01/88	05/31/91
TARTE R	M PC	M	Costa Rica	Plant Pathology	Board	03/01/84	05/31/90
TOLLINI B	M EC M SC VC BOT	M	Brazil	Agricultural Economics	Board	06/01/86	05/31/89
WANG ATI F	M EC	M	Kenya	Agricultural Physics	CGIAR	06/01/83	05/31/89

^{1/} BOT = Board of Trustees AC = Audit Committee PC = Program Committee SC = Selection & Search Committee NC = Nominations Committee EC = Executive Committee C = Chairman VC = Vice Chairman M = Member

to be persons already in their second term or in the last year of their first term. Although regular turnover is mandated, some stability is also desirable, especially in the critical posts. The current Executive Committee thus includes the Board Chair and Vice-Chair and Chairs of the three other committees, who have served from two to six years on the Board, in addition to the Director General and one of the three Colombian ex officio members.

CIAT has prepared a comprehensive handbook for its Board of Trustees that has served as a model for other centers and is an excellent orientation tool with respect to Board procedures. At its recent meeting, the Board determined to develop a plan to ensure that new members are also thoroughly acquainted with the substantive work of CIAT, as well as with its administrative procedures and issues.

In addition to the documentation prepared for meetings of the Board and Committees, the Director General distributes a "Trustees Newsletter" several times a year covering developments in each of the programs, financial patterns, and news of the staff. We judge Board communications to be excellent.

In preparation for this review, a consultant, Miles G. Wedeman, attended the April 1989 Board meeting and administered a survey instrument designed by Selcuk Ozgediz of the CGIAR Secretariat. On the basis of Mr. Wedeman's report, our interviews with a few Board members, and a review of recent Board and committee minutes, we were able to formulate our views on some of the key questions posed to us in the terms of reference prepared by the CGIAR Secretariat. It should be noted at the outset that, in conducting a review of Board performance, we are only able to view it in the context of the governance system that exists in the CGIAR today.

The aspects of Board performance considered in the following paragraphs pertain to policy-making, oversight, management of Board operations, relations with management, and selection of the new Director General. Our overall conclusion is that the CIAT Board has performed well on all these counts. The following paragraphs address the specific questions listed.

Policy-making Board members' perception of their own role is that they are a policy-making rather than an advisory body. The Director General echoes this view. Board members see themselves as heavily involved with policy-making and value-setting on all aspects of the Center's management. For example, the Board was consulted frequently in the preparation of the Center's strategic plan. The Board also plays an active role in the preparation and review of both medium-term and annual programs. Several management matters (such as the retirement plan for staff and the debt swap proposal) were discussed at the meeting observed on behalf of the EMR.

In response to the statement "As a Board we act as if we are accountable to _____, among the four choices, the CIAT Board members showed a strong preference for our clients in developing countries." This was followed closely by the CGIAR, with individual donors who fund us a distant third, and management and staff" last. Perhaps more important, there was wide disagreement among the members of the Board on the rankings. In view of this observation, we support the Chairman's intentions to organize a Board orientation and suggest that the topic of the Board's role and accountability be covered in this program in sufficient detail.

Our overall conclusion is that during the last few years the CIAT Board has attended appropriately to the major policy questions arising in the Center.

Oversight The conclusion of the Wedeman visit, corroborated by our own observations, is that the Board plays a strong oversight role in financial management. It does so through the mechanisms of budget approval, the review of financial reports, and selection of the external auditors. The same, however, cannot be said about the management of physical resources or, for that matter, human resources.

The Board's capacity to oversee Center policy is accomplished, as we mentioned earlier, mainly through the committees of the Board, which seem to be working well for the most part. There is some feeling on the part of Board members, however, that the line between the agenda of the Executive Committee and the Audit and Operations Review Committee needs to be drawn more sharply, and we agree that this is important. Thus, we recommend that the line between the terms of reference of the Executive Committee and the Audit and Operations Review Committee be drawn more sharply.

Management of Board operations The Board members, and also the EMR Panel, are highly impressed with the leadership and guidance provided by the present Chairman. The attention paid to the advance planning of Board business on his and his predecessor's initiatives has borne fruit. Also, the process of selection of new members, mainly designed by the previous Chairman, is meticulously followed. The induction to the Board in recent years of several members with management expertise is an indication of such careful planning. Some members have commented that the CIAT Board is too large (17 members) and that it has an over-representation of ex officio members from the host country (three). On both these counts, it is on the high side among CGIAR center boards and may bear Board consideration.

Relations with management The relationships of the Board and management are cordial and healthy, and based on mutual

respect The Chairman and the members of the Board maintain an excellent dialogue with the Director General They have expressed in our conversations their high regard for the DG's management ability and his overall performance

Selection of the new Director General One of the most important functions exercised by the Board in 1988 and 1989 was the recruitment and selection of a Director General to succeed Dr Nickel This was also an occasion to test the Board's objectivity and foresight A Search Committee of the Board was named in 1988, and the process was initiated when the Committee met to establish plans and define the qualifications for the position In August, over 550 letters soliciting nominations were sent to organizations and individuals around the world, including CIAT's Senior Staff, who might be in a position to identify highly qualified candidates

The Committee ultimately received and screened approximately 70 nominees and drew up a preliminary short list of 12 persons Committee members felt that they had an excellent list of names--in number, in breadth of experience within and outside the CGIAR system, and in geographical representation--to work with in selecting candidates for interview After consultation, seven of the 12 agreed to stand as candidates and to appear for interviews with Committee members This process resulted in the identification of four to take part in a series of final interviews with CIAT program staff and Board members at the time of the April 1989 full Board meeting The Board made its selection as planned in April and announced acceptance of the position by Dr Gustavo Nores Dr Nores is expected to take over the post of Director General in April 1990

We are impressed with the care and attention given to the process, which led to the appointment of an extremely well-qualified candidate

Overall, we consider the performance of the CIAT Board to be satisfactory and commend the Chairman and members for their hard and systematic work, and their devotion to the Center

3 ORGANIZATIONAL STRUCTURE AND PROCESS

3 1 Introduction

CIAT's management, like that of the other IARCs, faces a continuing challenge of balancing requirements for greater efficiency and accountability with the need to create an environment that fosters innovation and scientific progress. Increasing size and growing pressure from donors seeking reassurance for their treasuries that their money is being used effectively impose the demand for accountability, and the need to respond to donor pressure is a fact of life for the centers. If anything, it is likely to grow if the rate of funding increase declines and more activities are added to the CGIAR System. On the other hand, scientists worry that more and more of their time is taken up in responding to these pressures.

CIAT's scientific staff are already extremely busy. The reasons are obvious: a heavy travel schedule, a huge number of visitors, many reviews and meetings, and no closed season for field work. They have a large cadre of excellent support staff who must be kept busy on the essential routine work. Time for analysis and reflection on the progress of research is limited.

There are other pressures upon CIAT as well. The Center must decide how to incorporate the issue of sustainability, how best to respond to the pressing but disparate needs of the NARS, and how far and how fast to move some of its work upstream. Most of this will require increasing collaborative work: collaboration among CGIAR and non-CGIAR centers as they work with national programs and regional networks and organize training, collaboration with other centers, multilateral organizations, and national programs on sustainability issues, and collaboration with advanced laboratories in upstream work. The elements of all these have existed in previous decades, but they will certainly grow stronger in the 1990s.

These pressures are also certain to lead to changes in research thinking. For example, upstream research may well be more speculative than the research that is currently the norm, the probabilities of success are less, while the possibility of a high payoff from such isolated successes is greater. It is relatively easy to predict that a plant breeding program, given time and resources, will come up with an improved plant and to measure progress accordingly. Progress in upstream research will be much more difficult to measure, its management will require a lighter rein, and its impact is likely to have a different time perspective.

This chapter, prepared jointly by the EMR and EPR Panels, reflects upon these concerns, upon past achievements of the Center, and upon its future goals. Here the Panels suggest some directions

CIAT might follow as it enters the next decade, when demands will inevitably change, and new challenges will come to the fore

3 2 Structure and Process at CIAT Today

3 2 1 Overall organizational structure The current CIAT organizational structure is charted on Figure 3 1 Below the Director General (DG), responsibility for the programmatic work of the Center is divided between two Deputy Directors General (DDGs) One handles Tropical Pastures, Rice, and Training and Communications Support, plus several of the research support units, and is responsible for NARS relations in Latin America and the Caribbean The second oversees the Bean and Cassava Programs, three of the advanced biology units, station operations, and is responsible for NARS relations in Africa and Asia

A Director of Finance and Administration (DFA), on the same level, supervises an Executive Officer, who, in turn, manages human resources (for locally recruited staff) and other administrative functions, and a Controller, responsible for financial management Several small units report directly to the DFA a Projects Office to coordinate reporting to donors, a personnel office for internationally recruited staff, an office handling administrative systems and procedures, and the CIAT Miami Office

An office of internal auditing has an administrative relationship to the DFA but a direct reporting line to the DG The DG also has an internationally recruited Assistant who, among other functions, serves as Secretary to the Board of Trustees

3 2 2 Organization of CIAT's programmatic work CIAT was founded with and has maintained a commodity focus, although the orientation of the units, and thus their names, have changed over time Currently, there are four commodity programs Beans, Cassava, Rice, and Tropical Pastures Each has responsibility for both research and institution-building via training and collaborative research with national programs In addition, a Training and Communications Support Program has been placed recently on the same organizational level

The Bean Program is CIAT's largest in terms of the number of internationally recruited staff, a substantial number of whom are outposted in Brazil, Costa Rica, Ethiopia, Rwanda, Tanzania, and Uganda All report to the Program Leader, although there is also a Coordinator for East and southern Africa and the Great Lakes Region, resident in Ethiopia

The Cassava Program has scientists in Brazil, Ecuador, and Thailand as well as at Palmira, all report to the Program Leader

The Rice Program is CIAT's smallest, and its Program Leader is thus able to participate in research as well as management. It has staff outposted in the Caribbean region and strong ties to IRRI including collaboration with an IRRI liaison scientist posted at CIAT and responsible for international rice testing.

The Tropical Pastures Program, with outposted staff in Brazil and Costa Rica, is the only commodity program organized into three functional units (Germplasm Evaluation, Pasture Evaluation, and Production Systems), whose heads report to the Program Leader while they, in turn, supervise the units' scientists.

The Training and Communications Support Program is also comprised of specialized units, five in number: Training and Conferences, Publications, Information (library and bibliographic), Graphic Arts, and Public Information and Public Relations. Again, it is headed by a Program Leader to whom the unit heads report. Two staff members of this program are actually housed within each of the commodity programs in order to organize training events focusing on the commodity.

The Genetic Resources and Seed Units were established prior to the second EPR, the other three units are relatively new. The Agroecological Studies Unit was made independent of Data Services in 1984, the Biotechnology Unit was set up in 1985, the Virology Unit in 1987. Four of the units (Genetic Resources, Biotechnology, Virology, and Agroecology) are upstream, feeding into and, in the case of the Agroecology Unit, helping to focus research of the commodity programs. The Seed Unit works downstream, seeking methods, processes, and organizational forms to move research products to the small-farmer clients of the commodity programs.

The units are managed by their respective heads under a DDG. Research projects are formulated by an ongoing, informal dialogue among unit heads, program scientists, and Program Leaders to identify thrusts important to the programs. The DDG arbitrates on priorities. With respect to the Genetic Resources Unit, the Program Leaders make up an informal committee to negotiate priorities among themselves. To the best of the Panels' knowledge, this mechanism has not yet been extended to the newer units.

The units themselves may identify opportunities they see as having potential and bring these to the programs to gain support for their initiatives.

The main research service is Station Operations, with responsibility for the upkeep and operation of the CIAT experimental stations at Palmira, Santa Rosa, Quilichao, and Popayan. The Data Services Unit provides computer services, maintains the databases, and gives advice on experimental design and analysis through its Biometry Section. The centrally organized Analytical Services Laboratory (ASL) supplements laboratory

services within each program Its main function is the analysis of soil and plant tissue

All three of these services respond to demands from the programs and the research support units Scientists put forward their needs independently Problems in resolving demands are negotiated with Program Leaders In the cases of Station Operations and the ASL, in the last resort there is arbitration by small committees, for Station Operations this is composed of the Program Leaders and the Superintendent of the service, for the ASL it is the Research Services Committee, made up of a scientist from each program Again, final arbitration is with the DDG

3 2 3 Leadership style and practices For the past fifteen years, CIAT has had a forceful leader who has imparted to the Center his own strongly held values regarding the critical importance of CIAT's mission and the need to uphold high standards of both research and management in pursuing it His own commitment and confidence have generated the same among the staff, and the Panels are very pleased to note the widespread pride in CIAT's achievements

CIAT's senior management also benefits from the combination of skills, experience, and knowledge brought to the Center by its two DDGs, who share with the DG a strong commitment to CIAT's mission and fundamental values

CIAT defines its management team" as made up of the DG, the two DDGs, and the DFA, whom it currently refers to as the "Directors " They meet frequently but irregularly, perhaps three times a week for varying periods of time averaging an hour per meeting There are also countless one-on-one meetings among these persons to discuss issues as they arise, and they circulate their chronological files of correspondence to keep abreast of each other's concerns Since all four travel frequently, it often occurs that one must make a decision in an area normally the responsibility of another

The DG holds monthly staff meetings one month with all so-called principal staff--Senior Staff, Postdoctoral Fellows, Senior Research Fellows, Visiting Scientists, and the top rank (GAS) of the locally recruited administrative staff, the second month with Senior Staff only Biennially, he has a private meeting with each member of the Senior Staff

In pursuit of his goal of participatory management, the DG has appointed staff to a number of cross-unit standing committees

The Administrative Policy Committee, chaired by the DG, meets as needed--every two to three months--to advise the DG on matters related to personnel policies, management procedures, and key administrative issues, and is a sounding board for staff concerns

on these matters. The management team, the Executive Officer, and two elected Senior Staff representatives comprise the membership.

The Leadership Group is composed of all members of the management team except the DG, plus all Program Leaders. Chaired by one of the DDGs, it was established to discuss various inter-program and Center-wide research and cooperation issues and recommend action to the DG. Of late, it has met only every three to four months.

There are also committees to discuss/coordinate research services, sustainable production systems, field operations, electronic data processing, personnel classification, space planning, Palmira landscaping, and ARCOS (CIAT's staff newsletter).

The third important layer of management on the scientific side includes the Program Leaders. These are all senior and well-recognized scientists, most of whom have spent a number of years at CIAT and seem to have imbibed what may be called the CIAT Culture. Although their individual styles differ, the Panels have the impression that they believe in, and practice, participatory management within their respective programs. The senior scientists participate in research program planning and program implementation through constant, though informal, interaction. Most of the units also organize weekly staff meetings to share information and raise substantive research-related issues. From all the evidence, the Program Leaders provide strong and supportive leadership while, at the same time, they have succeeded in creating a collegial atmosphere.

The Program Leaders must depend on the two DDGs for coordination of their research and outreach activities and for resolution of any conflicts of interest.

3 2 4 Planning and review processes CIAT began work on its earlier strategic plan in 1979, culminating in the publication of CIAT in the 1980s. A Long-range Plan for the Centro Internacional de Agricultura Tropical in 1981. This plan was developed through a consultative process involving CIAT staff, the Board of Trustees, and representatives from collaborating NARS and advanced research institutions. In 1985, the Center prepared a rolling five-year version of the original plan, CIAT in the 1980s Revisited. A Medium-term Plan for 1986 to 1990. This was drafted following the 1984 External Program Review and was designed to address the key strategic issues raised by the Review.

Planning for the subsequent strategy--"CIAT in the 1990s"--started in October 1987 with discussion by the Board's Executive Committee on the planning process. The process thereafter consisted of Center staff dialogue, interactions with Board members, and meetings with research leaders from Asia, Africa, and Latin America. Regional meetings and the Annual

Program Reviews that occurred during the period provided additional opportunities to discuss ideas and review progress

In April 1989, the Program Committee and the full Board considered a completed draft. The refinement of this document has been used by the Panels as a framework against which to review the Center's programs and management. Panel members were impressed by the care devoted to the process and by the wide-ranging consultation involved. Nonetheless, they believe that, while the strategy properly charts a path for CIAT's future, it should not form a straitjacket to constrain the creativity of the Center's scientists.

In 1988, after the start but well before the completion of the strategic planning process, CIAT responded to requests from the Technical Advisory Committee (TAC) and the CGIAR to prepare a five-year program and funding plan. In spite of the timing vis-a-vis the long-term planning underway, this "operational" document reflected many of the ideas being considered in the long-term plan. CIAT expects to develop a revised five-year plan on the completion of the strategic plan.

On an annual basis, CIAT prepares a program and budget plan in accordance with the requirements and timetable established by the CGIAR. This document is reviewed by the CGIAR Secretariat and the TAC, submitted to the donors for funding, and finally approved to become the operating plan for the fiscal (calendar) year.

There are three other planning and review mechanisms at CIAT designed to uphold scientific standards and ensure relevance to the Center's objectives:

- Internal Program Review, held program-by-program and including all headquarters and outposted staff, usually scheduled just prior to the Annual Program Review, to examine ongoing activities in considerable depth,
- Annual Program Review, a one-week event held at the end of each calendar year and attended by all staff (including outposted) and involving an intensive evaluation of one program each year with brief reports on the activities of the other three, members of the Program Committee, new Board members, and, of late, some external scientists have been co-opted to participate in these proceedings,
- Program Committee of the Board of Trustees meets twice annually, once in conjunction with the Annual Program Review, to assess and report to the full Board on the Center's program plans.

The Report of the External Management Review contains additional discussion on the planning process, particularly on its relation to budgeting, and makes several recommendations to better integrate planning at all levels

3 3 Organizational Issues and Recommendations

Panel members are unanimous in their judgment that CIAT is a skillfully managed institution. Management problems that have arisen have been attacked vigorously, with the result that none of the issues raised below represent matters of critical concern, although they deserve attention

3 3 1 Decision-making As demonstrated by the establishment of standing committees and the other lines of communication, top management seeks to encourage broad participation in decision-making. Management's philosophy is to delegate whenever possible to the level closest to the action and to make policy and resource allocation decisions that are Center-wide or that involve more than one unit on the basis of appropriate consultation with those involved, but without abrogating the authority of the responsible officer

It is extremely difficult in a short visit to any institution to determine whether or not an expressed management philosophy is actualized. Certainly the Panels observed general, and in many cases high, satisfaction with the work environment, a finding that would be unlikely if staff perceived they were not listened to. The recent culture audit also evidenced widespread agreement that "frequent internal consultation facilitates work." On the other hand, the Panels believe that the principle of participatory management could be strengthened to the benefit of CIAT as a whole if closer communication between the second and third layers of the organization could be achieved and if there were a clearer delegation of authority to the Program Leaders

The commodity programs are the heart of CIAT's research system, and commodity Program Leaders have a good deal of autonomy, although some claim that management occasionally makes decisions on both staffing and programmatic matters without consultation. The Panels have every belief that the Program Leaders manage their programs well. The scientific staff appear to have great loyalty to their leaders and generally feel that they receive solid support for their research. However, Program Leaders are strongly defensive of their programs, concerned about whether they will get the kind of service they need from research support units, and somewhat apprehensive of interdisciplinary collaboration across programs, lest it diminish the main thrust of the programs, where their first loyalty lies. The Panels did not find this surprising, but believe that, while it will not stop changes in direction--CIAT's past record emphasizes this--it does make it harder for the Center to respond to new situations

As noted, the DG, the two DDGs, and the DFA comprise top management. They meet frequently, share their chronological files, and otherwise communicate so as to be able to serve as alter egos for one another during their recurrent travel absences. The Panels sense, despite the existence of the Administrative Policy Committee (chaired by the DG) and the Leadership Group (chaired by one of the DDGs), that staff perceive this to be a somewhat closed group that does not adequately touch base vertically. However, the management thinks that informal communication does take place on a day-to-day basis.

The Panels believe that decision-making and intra-center cooperation would be enhanced if the next layer of authority were incorporated into the top management team. This does not imply any change in hierarchical authority, rather it promotes CIAT's accepted principle of participatory management. The Program Leaders are in close touch with the scientific staff and with conditions and concerns of the NARS, and they would bring a valuable perspective to management deliberations. In addition, and perhaps more importantly, their participation would stimulate a broader view of overall CIAT strategic issues on their part, help break down the four-centers-in-one mentality, and foster greater inter-program collaboration. Thus the Leadership Group should be superseded by a formal Management Committee constituted by the DG, the two DDGs, the DFA, the four commodity Program Leaders, and the Program Leader for Training and Communications Support. The inclusion of the last-named leader is necessary because of the increasing role of training as an input into NARS development. When appropriate to the agenda, the Executive Officer and/or the Controller should also join the group, and the Assistant to the DG should serve as Secretary.

The Committee's meetings should be sufficiently regular and frequent. They should be chaired by the Director General whenever he is available, with an agenda planned in advance and minutes prepared and distributed. The agenda might include mechanisms for joint ventures between/among programs, strategies to relate to NARS, new initiatives for the Center, and administrative issues. In fact, the Administrative Policy Committee should probably be abolished, with its issues brought before this group.

The Panels recommend that top management at CIAT be redefined to incorporate the third level in the hierarchy (the Program Leaders) and that a Management Committee be established, to be chaired by the Director General and to meet regularly and frequently, with an advance agenda and formal minutes recorded.

In addition, the Panels would like to see steps taken to ensure that the Program Leaders' authority is in accord with the responsibility expected of them. While they should be held accountable for the outcome of program work and for the management of program resources, they should also be delegated concomitant

authority For example, they should direct recruitment and selection of staff--to be sure, with adequate consultation and the right of final approval reserved to the DG and the respective DDG, they should be their scientists' first line of contact in decisions related to workplans, sabbatical leaves, performance evaluation, and other personnel matters, they should be involved more directly in resource planning, and they should design the special projects for their programs The image of authority would be effectively strengthened, in the Panels' view, if the title of Program Leader were upgraded to Director (If this were done, the DFA might be titled Associate Director General for Finance and Administration, thus placing the function above program leadership while still below the DDGs and emphasizing the preeminence of CIAT's programmatic work)

The Panels recognize that an increase in delegated authority may absorb more of the Leaders' time and divert them from personal research The fact is, however, that program staffs are large, and someone close to the front line must attend to management of research within the program and coordination with other units, oversee relations with national programs, manage the program's resources, and deal with inevitable personnel issues

3 3 2 Organizational structure Organizational structures invariably evolve over time, based on historical circumstance as well as the talents and abilities of existing personnel From time to time, therefore, it is appropriate to reconsider whether or not there would be a more efficient and effective way to allocate authority and responsibility The Panels feel that CIAT should carefully assess its present organizational structure in terms of the following criteria

- appropriateness of the structure to accomplish the Center's strategic goals,
- simplicity of reporting relationships (for example, at the moment most of the Program Leaders report to both DDGs on research and international cooperation matters),
- reduction to a minimum of complex coordination processes at all levels of the organization,
- effective delegation of authority to the lowest level in which responsibility for a given activity is placed, and especially reduction to a minimum of the number of decisions that must be made by the Director General,
- sharing of personnel, facilities, and other resources whenever practicable,
- coordination of research support units and research services with the research of the commodity programs,

while leaving the door open for leadership in upstream research,

- demonstration of the preeminence of CIAT's programmatic work vis-a-vis its administrative side

The Panels recognize that there are several structural models that could achieve these objectives, each with some advantages and some disadvantages, but have not carried out a detailed analysis of all the alternatives

The Panels recommend that the incoming Director General, in consultation with the Board of Trustees, evaluate the current structure in the light of the criteria listed in Chapters 6 and 3, respectively, of the External Program and Management Review Reports

3 3 3 Coordination of the research support units The successful identification of upstream opportunities, particularly in both biotechnology and virology, signals that the units--while still support units in that their efforts must further the commodity improvement goals of CIAT to be relevant and acceptable--will be a growing source of research initiatives

Given the strategic move upstream, it is important that the organization and structure of CIAT encourage such moves and, if management finds it appropriate in pursuit of Center goals, further development of the units. While the Panels see no reason for their amalgamation, a course that has been contemplated, these considerations suggest that coordination and collaboration will allow cost-effective use of facilities and will generate synergy among unit staff in the search for new ideas and research opportunities

In support of these objectives, the Panels believe management should appoint a new internationally recruited staff member on the level of the Program Leaders to oversee and coordinate the three advanced biology units (Genetic Resources, Biotechnology, Virology), the Agroecological Studies Unit, and the Seed Unit. At the outset, the holder of this position should concentrate on coordinating the work of the advanced units with the research plans of the commodity programs, which themselves would be responsible for commissioning any other upstream work needed from advanced institutions. Overall coordination of university contacts would then rest with the DDGs. Initially, the new leader might also be responsible for supervision of Data Services, the Analytical Services Laboratory, and Station Operations, ensuring that they serve the research needs of the commodity programs efficiently and effectively. Therefore,

The Panels recommend the appointment of a Coordinator of Research Support to supervise the work of CIAT's advanced biology units, as well as all the other research services in the interim

At some later point when programs in these areas are mature, it may prove desirable to give these activities the status and increased autonomy of a "Program" and designate the person involved as Program Leader (or Director)

To promote coordination with the more immediate problem-solving work of the programs, the Panels suggest that informal committees involving the Program Leaders be established with respect to biotechnology, virology, and seed production, similar to the one already in place for genetic resources

3 3 4 Strengthening competence in disciplines CIAT's strategic plan asserts the intention to continue management of its research on the basis of multidisciplinary teams organized around single commodities and supported by specialized research units. However, the Center does raise the question as to how researchers in individual disciplines can maintain scientific excellence

One way it suggests is through publication in high-quality refereed journals, as was also recommended by the second EPR. The Panels noted that CIAT scientists turn out large numbers of publications--about 300 in 1987--with 12% published in international journals and most of the remainder in CIAT-sponsored publications

CIAT argues rightly that its mandate is to produce improved technology. Nonetheless, its task is also to contribute to scientific leadership in tropical agricultural science and to scientific thinking that has global applicability. Thus, the Panels endorse the encouragement of increased publication in refereed journals included in the CIAT "Policies and Procedures Manual" (No. 108 of 15 July 1985) and inclusion of this item in the personal evaluation form, and suggest that management devise other specific means for accomplishing this objective

Another way the Center could strengthen competence in disciplines would be to provide opportunities for intradisciplinary interaction. This occurs naturally in the advanced biology units, more effort will be required to bring it about with respect to scientists attached to the commodity programs. Measures might include encouraging scientists to set aside some research time for collaboration on an opportunity or a problem area with potential benefit to more than one program, encouraging regular attendance at disciplinary meetings, and informal workshops to focus on new findings or new methodologies in a given discipline

There is another side to the coin, however. Some program staff see a danger that scientists in the highly specialized research units will develop their own disciplinary agendas that might not be relevant to the perceived research needs of the programs. The challenge will likely increase as the Center moves into more upstream research, where breadth versus depth of

knowledge in a particular segment of science will have to be determined. In the final analysis, however, the personality and ambitions of the individual scientist will probably be a decisive factor in settling this issue.

3 3 5 Management of outposted scientists Various members of the two Panels had the opportunity to meet many of the scientists in CIAT's outreach operations. There are 32 currently stationed outside Colombia, projected to increase to 37 in 1993. Unlike some of the IARCs where outposted staff report to a Director for Outreach, CIAT's outposted scientists are an integral part of their respective commodity programs. The Panels confirmed that this is a satisfactory arrangement as far as the individual scientists are concerned.

However, the problems facing outposted staff are very different from those facing staff at Palmira, and it is difficult for managers from headquarters visiting for short periods to appreciate fully the petty frustrations that are the hallmark of their day-to-day operations. Among them are seemingly irrelevant financial reporting requirements, delays and misunderstandings in decisions, problematical research infrastructure, and the need to spend considerable time on administrative matters that would be dealt with by support units at headquarters. For example, scientists must themselves recruit assistants and manage them in accordance with local laws and customs, sometimes involving several countries. The Panels want to emphasize, however, that these problems do not affect the high quality of the work done by CIAT's outposted scientists. They are recorded as perceptions that deserve management attention.

Clearly, the independence demanded of outposted staff as well as the nature of their work with national programs suggests that special personal characteristics must be among the qualifications sought. These include cultural sensitivity, adaptability, competence in negotiation, and pedagogic skills as well as substantial research experience. The CIAT scientists met by the Panels seemed especially well suited to their assignments.

The Panels would also consider it valuable for staff to spend more time at headquarters before being posted elsewhere than appears to be the case presently. There is probably no better way to understand CIAT's culture and purposes or to build a commitment to the Center's strategic goals and operational objectives.

The Panels strongly endorse the placement of CIAT's outposted scientists in the NARS facilities in most countries in which they are posted, while retaining a regional brief. This close association has certainly strengthened CIAT's responsiveness to its clients' needs and could be practiced by other CGIAR centers. The development of steering committees in the African bean program has been very successful in giving the national scientists a major role.

in determining program direction. On occasion, however, there may be conflicts within the steering committees about priorities. It is essential that the members themselves resolve these before the Center becomes involved. The steering committees should be encouraged in their independence and the Center and donors should be very sensitive to imposing their views on the committees. This is likely to be counterproductive.

3 3 6 Increasing NARS participation in operational planning
An important element of CIAT's mandate is assistance in building research capacity within national programs. As Center staff have so clearly demonstrated, a long-term impact is most effectively pursued through a collegial approach. In order to ensure, therefore, that the Center's operational plans are in harmony with the current needs and interests of the NARS, the Panels suggest that management consider inviting a few selected leaders of the appropriate commodity research programs of the relevant NARS to take part in the Annual Program Review.

4 PLANNING, BUDGETING, AND REVIEW

4 1 The Planning, Budgeting, and Review Process at CIAT Today

Formal planning, budgeting, and review processes have long formed a part of the CIAT culture, and have contributed greatly to the Center's tradition of excellence. The Internal Program Reviews and the Annual Program Reviews are a long-established tradition both at CIAT and other centers in the system. Until 1987, annual or biennial Programs and Budgets, with forward projections, were prepared for submission to donor organizations. Beginning in 1988, at the request of TAC and CGIAR, a five-year program and funding plan was prepared to be used as a basis for annual funding requests. During 1988 and 1989, CIAT also developed its ten-year strategic plan for the 1990s, with wide participation in the planning process from both CIAT staff and outside constituencies. CIAT recognizes that the strategic plan might logically have preceded the development of the five-year program and funding plan, and considers the latter to be an interim document, to be replaced in 1990 with a revised five-year program and funding plan based on its just completed strategic plan.

This chapter briefly presents the process used to develop strategic plans and both medium-term and annual program plans. Considerably more attention is devoted to the process by which annual budgets are made. The Annual Program Review is discussed in terms of its relationship with the planning process. Project- and program-based management are then compared before suggesting a set of criteria to assist CIAT in determining which is most appropriate given the nature of a particular activity or set of activities.

4 1 1 Strategic planning CIAT in the 1990s. A Strategic Plan is the Center's third long-term strategic plan, and neared completion in September 1989 after many months of intensive work. Ten years ago CIAT produced its first long-term strategic plan, and that plan was the subject of a mid-term revision in 1985.

CIAT's new strategic plan is the result of a complex, two-stage planning and consultation process. The first stage included a series of internal and external activities, including an analysis of commodity trends and the development of the NARS, which led to the design of a Center-wide strategy. In the second stage, planning activities took place within each program to develop individual strategies consistent with the Center-wide strategy.

The resulting strategic plan (which is still in draft form as this report is written) establishes Center-wide directional guidelines in the areas of relationships with NARS, sustainability, and the Center's balance of activities, and specific goals and strategic objectives for each of the four commodity programs, the research support units, and the Training and Communications Support

Program Finally, a series of policy guidelines are presented covering the Center's management functions

The strategic plan for the 1990s is a complete, well-prepared and well-presented statement of Center-wide and program directions. It does not, however, discuss the cost implications of these new directions, nor does it discuss how they might affect the way the Center is organized, staffed, or funded. It also does not deal with the issue of balance among CIAT's four major commodity programs. Such a discussion may well be the subject of an operational plan, but until such a plan is elaborated, there are few indications of what might be required for CIAT to reach its strategic objectives.

4 1 2 Program planning A program plan should translate an organization's strategic objectives into a set of specific activities designed to realize those objectives, and should indicate the general level of resource requirements necessary to carry out the planned activities. A short-term program plan, such as an annual plan, should contain sufficient detail concerning resource requirements in order to develop an operating budget.

Until 1987, CIAT prepared annual or biennial program plans and budgets for submission to its donors. These plans included long-term Senior Staff projections and were based in part on the outcomes of the Annual Program Review process. They discussed the focus, objectives, and recent achievements of each of CIAT's programs, as well as the direction of their continuing research, were accompanied by formal budget requests for the following year, and were developed according to the process described in the next section.

In 1988, in response to requests from TAC and CGIAR, CIAT developed and presented a five-year program and funding plan, similar in format to the plans presented previously. Since this plan was written before CIAT had fully developed its ten-year strategic plan, it is considered to be a preliminary plan, and the Center intends to develop a revised medium-term program plan based on the final outcome of the strategic planning process.

4 1 3 Budget The budgeting process begins early each calendar year with the development of preliminary working budgets for the following year. At this time, the budget office generates and distributes to each Program Leader and Unit Head copies of the previous year's outcome and the current year's approved plan. This material includes both the dollar values for all items except wages

and salaries, and a complete staffing report listing all positions authorized and filled at each level 1/

Upon receipt of this information, Program Leaders are requested to indicate any changes necessary for the following year and return these revised budgets to the budget office. While it is suggested that Program Leaders consult with section heads and other members of their respective programs, there is no deliberate or organized process to ensure such consultation, and it is our impression that little consultation has, in fact, actually occurred with respect to budget preparation.

Personnel costs are not included in the budgets sent to section heads, and are determined separately by Finance and Administration, which estimates personnel costs for each staff position.

These budgets are then consolidated and presented for review, adjustment, and approval by the Director General, with the assistance of the Deputy Directors General and the Director of Finance and Administration 2/

The resulting consolidated budget as well as the annual program plan (currently based on the five-year program plan) are discussed with the Board's Executive Committee during its March/April meeting. A final presentation is made to CIAT's Board, including both the budget and the annual program plan. This proposed budget may contain various elements of a contingency plan indicating which activities would be curtailed if funding for the entire budget is unavailable.

Once the budget has been approved by CIAT's Board, it is presented to TAC for its consideration and recommendation to the CGIAR. The CGIAR Secretariat, after consultation with donors, then provides the Center with an estimate of the probable funding.

1/ A cost center at CIAT is the smallest organizational unit for which a separate budget is prepared, expenses are accumulated, and a single individual is held responsible for budgetary compliance. Within the commodity programs, cost centers generally correspond to sections, each headed by a member of CIAT's Senior Staff.

2/ It was suggested to us that a mechanism might be developed to inform CIAT's personnel office of any planned additions to the local staff as early as possible in order to make the appropriate arrangements for their recruitment. Under the current system, personnel does not learn of new appointments until they are needed, and then is given too little time to carry out a thorough search process. Since decisions to hire new staff are made early in the planning process, this might be an opportunity to pass along this information to the personnel office.

level Based on the CGIAR's funding indication, Finance and Administration then makes the necessary adjustments and forwards a final working budget to each of nearly 160 individual cost centers This budget becomes the base against which non-personnel expenses are measured as the year progresses

CIAT's budgeting system has been vastly improved over the past five years due to the improved availability of historical accounting information, and the final budget for each cost center now serves as a firm plan against which expenses may be controlled However, lack of wider participation in the budgeting process may have reduced some staff members' commitment to budget compliance ^{1/} It may also have contributed to the creation of a climate in which program and section leaders sometimes feel frustrated by their difficulty in influencing or, in some cases, even understanding the decision-making process

4 1 4 Program reviews The Internal Program Reviews and the Annual Program Review, involving all of CIAT's principal staff (including those posted in other countries), are held each December The Annual Program Review is also attended by the Board Program Committee, and serves as the principal means by which the Board oversees program activities During the Annual Program Review, one of CIAT's four major commodity programs is analyzed in detail, while shorter presentations are made on the focus, achievements, and future plans of the remaining programs

We feel that the Annual Program Review is of great importance in maintaining the high research standards which characterize CIAT's work We also feel that it is a useful device for assessing the Center's progress toward its strategic and program goals, and providing input for the annual planning cycle by identifying future activities and resource requirements based on program results

4 2 Program- and Project-based Management

CIAT's organizational structure and process must be mutually reinforcing in order to maximize the effectiveness with which its strategic objectives are pursued The planning process described in the previous section establishes broad strategic objectives, translates those objectives into programs and activities within those programs, and ensures periodic reviews of progress toward the accomplishment of the strategic objectives

^{1/} As observed in the 1987 IRRI External Management Review, In any organization, the most effective management and motivation are achieved by delegating planning and control to the same level This puts accountability in the same hands as cost generation

The structural context in which this process takes place is characterized by a program, as opposed to project, form of management. This implies that the organizational unit within which an activity is carried out exists independently from the activity itself, and will continue after the activity is finished. It also implies that budgets may or may not be tied to particular activities or sets of activities, and may well be based on the costs of maintaining the unit fully staffed, etc., rather than on the specific costs involved in carrying out a specific activity or reaching a specific goal.

The project form of management, on the other hand, implies an ad hoc grouping of staff and other resources to meet the specific needs of an activity. The project has a finite life, after which staff and other resources are released back for future assignment to other projects.

Project-based management has been recommended by several EMR panels within the CGIAR system, and has been successfully implemented in a number of centers throughout the system. The principal advantages of project-based budgeting are generally seen in terms of its ability to

- assign the resources needed to a specific task regardless of the existing organizational structure,
- delegate the authority necessary to accomplish the project to its leader,
- allocate costs to the accomplishment of a specific objective,
- measure progress and costs against that objective,
- evaluate the effectiveness of both the project and its members in the accomplishment of their objectives, and
- reward members of a project team based on the objective evaluation of their accomplishments.

Project-based management also helps to ensure that the operational plan is designed to implement activities indicated in the long-range plan, which in turn is designed to accomplish the objectives of the strategic plan.

Project-based management has been sharply criticized by many scientists within the system for a perceived rigidity in the definition of activities, and for the need for complex and time-consuming record keeping and reporting.

A program-based form of management, on the other hand, provides the advantages of a permanent, interdisciplinary research

team dedicated to a long-term strategic agenda with sufficient flexibility to permit changes of course and the exploration of promising but unplanned avenues of research. From an administrative point of view, programs are easier to manage since staffing and budget plans can be made on a yearly basis and need not be reformulated for each new activity. Finally, a finite group of individuals can be charged with managerial responsibility, leaving the remainder of the organization free to pursue research unfettered by the need to perform administrative tasks.

The distinction between project- and program-based management may be more apparent than real, and depends primarily on the definition of the activities to be accomplished. In some cases, a program-based form of management will provide most of the benefits of the project-based form, while at the same time preserving the unity and organizational simplicity of the program. These cases occur when long-term strategic objectives can be translated into a set of interrelated activities requiring essentially the same mix of professional and technical resources, and when checkpoints can be identified to measure progress toward a strategic objective. At CIAT, strategic objectives as well as programmed activities tend to be long term, and may generally be best pursued using existing procedures. This, however, may change as increasing amounts of cross-program, disciplinary work is undertaken, as issues of sustainability are pursued, or as CIAT seeks to provide more of an integrated and unified response to the needs of the NARS. In such cases, CIAT should maintain the flexibility to utilize professional resources from different organizational units on an ad hoc basis, through the project-based form of management.

Whether a project- or program-based form of management is selected, there are several criteria which may be useful in improving the design of managerial procedures so as to ensure the effectiveness of the work.

- Short-term operating plans and activities should be related to elements of the medium-term plan, which in turn should be related to strategic objectives. (This does not mean that no time should be programmed for such activities as professional development, Center-wide activities, or other legitimate uses of downtime.)
- Planning and budgeting should take place at the same level where responsibility for execution and results lies. Managers of projects, programs, or subprograms should have full control over all aspects of their budget, including both the staffing plan and expenses, should be able to administer their projects or units according to the requirements of their task, and should be held accountable for their results.

- Explicit objectives as well as progress checkpoints should be identified in advance and used to monitor progress of the program or project unit (Checkpoints should not be designed to depend on the outcome of the research process itself but rather on the execution of elements in a research plan which can be charted independently of the research results)
- The relationship between costs and progress toward program or project objectives should be apparent
- Individual performance evaluations should be based in part on the attainment of the objectives contained in the program, subprogram, or project workplan, and rewards should be linked to the performance evaluation in a way which is transparent to the individual (see Chapter 5 for additional comments concerning performance planning and evaluation)

Most of these attributes are already present in much of CIAT's work

We recommend that the budgeting process be revised to include consultation on all aspects of the budget, including staffing patterns and costs, with those who will have the responsibility for budget implementation, down to the level of each cost center

We further suggest that CIAT remain flexible in its approach to program- and project-based management, depending on the nature of the specific activity, but that it seek to ensure that all program activities are strategy driven, that all programs or projects are structured to permit an evaluation of progress and costs against objective criteria, and that program, subprogram, or project leaders are held accountable for their progress and the associated cost

5 MANAGEMENT OF HUMAN RESOURCES

5 1 Introduction

Members of the Panel were pleased to note the positive attitude toward CIAT expressed to us by staff at all levels^{1/} Suggestions for change were invariably prefaced by expressions of job satisfaction, stemming from the work atmosphere and excellent facilities as well as CIAT's social mission

CIAT's staff is substantial in size and has grown considerably over the past five years as noted below, where figures refer to approved positions^{2/}

	<u>1984</u>	<u>1989</u>
Senior Staff	61	84
Postdoctoral Fellows	14	18
Senior Research Fellows	12	16
Locally recruited staff ^{3/}	1290	1500

Not surprisingly, some 55% of the budget, amounting to \$16.5 million in 1988, is expended for personnel services. Despite the growth in staff numbers, the dollar cost of personnel has dropped in the past years as a result of the peso devaluation.

5 2 Locally Recruited Staff

CIAT is fortunate to have an extremely well-qualified local staff. Educational levels in Cali and in Colombia generally are high, and thus the Center is able to recruit easily from the local employment market. Employment longevity is common, with substantial number of staff having served at CIAT for more than ten years (45%) and even fifteen years (15%). Turnover has averaged only 5.3% annually over the last few years. The fact that the number of internationally recruited staff has increased by 36% over the past five years while the locally recruited complement has increased by only 17% suggests that CIAT has taken steps to review staffing ratios. The ratio of internationally to locally recruited staff was 1:14.8 in 1984, it is 1:12.7 today.

1/ Appendix 2 contains A Note on CIAT's Culture, describing a recently completed culture audit and CIAT's plans to manage its organizational culture proactively.

2/ Currently, 108 of the total of 118 internationally recruited positions are filled. Senior Staff--76, Postdoctoral Fellows--16, Senior Research Fellows--16.

3/ Includes approximately 200 field workers hired seasonally.

Local positions are classified in eleven categories, from I (including experienced research associates and administrative supervisors) to XI (including field workers, cafeteria attendants, etc) In addition, there is a supercategory of General Administrative Services (GAS) comprised of some eleven positions with major responsibilities like those that are often assigned to international staff at other centers These positions carry special benefits as well as higher remuneration

Salaries for the local staff are reviewed regularly against surveys of the local market and maintained just above the local average Benefits are also maintained at a competitive level Management has been especially concerned about the welfare of staff in the lowest paid categories and has made an effort to ensure the workers and their families access to adequate housing, education, diet, and health care An employee credit union, "CRECIAT," manages staff savings and a CIAT contribution of 5% of wages offers both housing and education loans There is great, and justifiable, pride in the fact that 96% of staff with three or more years of service at CIAT own their own homes A separate plan, PROCIAT, is responsible for family health care Despite the fact that benefits may appear to exceed common practice in other countries, we believe that concurrence with the local market and local customs should be the guiding principle

A staff union has a membership including 25 5% of the staff, generally those at lower levels, a decrease from 38% in 1984 Contracts are negotiated biennially, the last was signed at the end of 1988 The union leadership was eager to emphasize to us its excellent relationship with management

The personnel function for this staff group is carried out by the Office of Human Resources, reporting to the Executive Officer, with a staff of 18 headed by a GAS officer Not unlike other units in Administration, the Office appears to be a highly professional operation There are well-developed and frequently analyzed systems for personnel classification, salary and benefit administration, etc , as well as carefully documented personnel policies This is the result of a major effort on the part of the human resources staff to bring order and equity to a previously somewhat ad hoc set of policies and procedures

The Office seems open to acknowledging new needs and to making an effort to address them A case in point is the widely expressed staff interest in training to upgrade their skills and acquire new ones that might lead to promotion, an interest that we consider very commendable Policies and resources in this area have not been fully adequate in the past, especially with regard to staff in the research area, but management is now undertaking an assessment of training needs and negotiating with SENA, Colombia's training organization, to determine the opportunities available from that source The strategic plan makes a commitment to staff

training. If it is to be fulfilled, the Center must, of course, back the commitment with resources. They would probably be utilized most effectively and equitably if centrally managed.

A major related issue for the local staff involves the opportunity for advancement of those who reach the ceiling salary assigned to the highest category of their job type. Because of unusual staff longevity, these cases arise more and more frequently, and this argues for a flexible training policy that will offer skill development beyond that needed for an employee's current assignment.

In addition, although career development is a valid concern of all staff, special attention is probably warranted to the most experienced and valued senior research associates, a supercategory in the research area analogous to the GAS should be considered as should opportunities for such staff to attend professional meetings, occasionally travel abroad, and participate more frequently in research decision-making. We hope that Senior Staff can be made aware of the aspirations of the research associates to put their skills and experience more fully to use. These suggestions are made not to deny the fact that real upward mobility for national staff in an international institution is necessarily limited, and, for some, employment outside CIAT will be the most appropriate personal decision.

We recommend that management pursue vigorously the assessment of needs in the area of staff training and career development, design a more systematic set of policies to respond to the identified needs, and commit adequate resources to assure their realization.

Commendable efforts are also being made by Human Resources staff to equate benefits to CIAT employees working off-station with those available in Palmira, to design equitable benefit packages and other personnel policies for local staff employed in the increasing number of countries in which the Center operates, and--with help from CRECIAT--to study the need for more staff recreational facilities in accordance with local company practice. Review of the performance evaluation procedures is another objective for 1989, a matter on which we place considerable importance (see recommendation in 5.3.4 with respect to internationally recruited staff).

Finally, we believe there is room for improvement with respect to communications with staff, while again acknowledging that this concern is felt by management as well. Among other measures, CIAT is preparing informational materials directed at keeping staff abreast of Center-wide work and achievements. At another level, however, staff complain of a communications gap between senior scientists and their junior assistants and field workers, asking that more time and effort be spent explaining why

a given task is assigned, what part it plays in the research project, and what outcome is expected. One person claimed that workers don't always know what to say when asked, "What are you doing at CIAT?" We suspect the solution to this lies in better training of senior staff in supervisory skills and refer the reader to section 5.3.2 below.

5.3 Internationally Recruited Staff

The internationally recruited staff as a whole currently includes 97 men and 11 women (10.2%) and is comprised of 28 nationalities (up from 16 in 1984) divided as follows:

Latin America	39
USA/Canada	32
Europe	23
Asia	6
Africa	5
Australia	3

In addition, there are currently two Visiting Scientists (from France and Venezuela) and eight Senior Staff from sister IARCs (seven nationalities) working at CIAT.

One of the most marked changes since 1984 has been the decentralization of staff. In that year, 13 internationally recruited staff were stationed outside Colombia, in 1989, there are 32 such staff, with the most dramatic staff increase in Africa.

Members of the Senior Staff are on fixed-term contracts (usually due to budgetary constraints), or have continuing employment status, both clearly defined in the personnel policy manual. CIAT does not recognize subcategories within its Senior Staff contingent other than unit heads. Postdoctoral Fellows are scientists with no or only limited experience after obtaining the doctorate. They are appointed for one year with the possibility of extension up to three years. In many cases, they are then named to Senior Research Fellowships, positions that require at least two years experience beyond the doctorate. This pathway frequently leads to positions on the Senior Staff. From time to time, in addition, CIAT welcomes experienced researchers on short-term appointments, giving them the title of Visiting Scientist, and invites scientists from collaborating national institutions to spend a period at Palmira as CIAT Fellows.

In view of the fact that there are no grade levels, management might wish to consider designating as "Senior" or "Distinguished Scientist" an occasional member of the research staff who has made extraordinary contributions to CIAT's objectives but who should not, for a variety of reasons, be moved into a managerial role.

CIAT international staff salaries fall at about the midpoint of CGIAR center levels. Management prepares careful analyses to ensure that salaries and benefits relate appropriately to sister IARCs and other comparator organizations as well as to ensure proper recognition of experience, responsibility, and performance.

The personnel function for these groups is handled by one local officer, with support staff, reporting directly to the Director of Finance and Administration. The officer maintains records, interprets policies for staff, assists with administrative matters, and provides liaison with the payroll function at the Institute of International Education.

5 3 1 Recruitment Senior Staff turnover has averaged only about 7% annually over the last five years, but as the staff has grown, recruitment has been an important concern. The consensus seems to be that the quality of candidates attracted has declined somewhat for a number of reasons: perceptions about security in Colombia, the proliferation of dual-professional families, and some doubt as to whether skills enhanced at CIAT are valued elsewhere. It is not easy to respond to these factors. They may suggest an increase in remuneration offered, however, both to outcompete university alternatives and to compensate somewhat for loss of a second family income. More aggressive assistance with spousal employment may also be warranted, particularly if CIAT is serious about improving the gender balance, professional women almost invariably have professional spouses. There is already a new policy permitting CIAT employment of spouses in outreach programs under specified conditions. This issue is, of course, endemic to all of the CGIAR centers, and a concerted, collaborative effort to identify solutions would probably be useful.

In any event, we observed a feeling that wider sourcing and, perhaps, more targeted recruitment might yield better candidates and that recruitment efforts could be speeded up. Currently, short-listed candidates are invited for interviews seriatim, and this can spread out the process over a long period. In addition, since those engaged as Postdoctoral Fellows often move into Senior Staff positions (a practice about which there is some disagreement, but which does give the Center a period to test the candidate), great care should be put into recruitment and selection at this level.

5 3 2 Training Whatever their research or institution-building assignment, all international staff at CIAT have substantial administrative responsibilities as well. They manage budgets and supervise staff, but they rarely have training or experience in these areas, and not infrequently their competence and confidence levels are low as well. No doubt there are inefficiencies that absorb more time than the tasks require. We understand and applaud the fact that a move is already afoot to bring Senior Staff up to speed in financial management and

supervision, noting that the management training offered by the CGIAR Secretariat to CIAT's principal managers has made a great impact on the Center. In fact, CIAT is contemplating the training of trainers on staff who will provide a permanent resource in this area, this may well serve as a model for other CGIAR centers

Among other points, the training should focus on communications with staff and address human resource concerns such as career development, thus to ensure equitable offering of training opportunities for locally recruited staff (see 5.2 above). In fact, management might well prepare and distribute a set of guidelines pertaining to human resource management responsibilities of first-line supervisors

Other training needs of internationally recruited staff should also be assessed, including the need for training in pedagogic skills, in new statistical methodology, and in use of sophisticated computer programs

We recommend that all first-line supervisors be trained in financial management as is relevant to their assignments as well as in supervisory skills

5.3.3 Career development Several months ago, CIAT changed its policy to permit study leaves of from one to five months with no minimum employment period before submission of the request. This is a significant expression of management's concern for Senior Staff career development in the light of rapid changes in science. We have heard several other suggestions that might be useful in this regard as well. More interaction among staff of a given discipline at the Center should be encouraged, and staff should be given the opportunity to attend discipline meetings even when they are not scheduled to present a paper. In addition, we understand that, despite massive data collection at CIAT, staff are hard put to find time--or assistance--for analysis that might lead to publication in a refereed journal. As a possible solution,

We recommend that CIAT seek or help identify funding for and recruit well-qualified Masters and Ph.D. candidates to conduct their dissertation research under the supervision of CIAT Senior Staff scientists

5.3.4 Performance planning and evaluation Chapter 4 above discusses the planning process at CIAT and urges its vertical extension. In fact, if the Center is to realize the objectives of its overall strategic and operational plans, the realization must emerge from the contribution of each individual scientist and administrator. CIAT is not analogous to a university where academic freedom permits total individuality, it is rather a collaborative research institution working toward specific, agreed-upon goals--albeit an institution where creativity must be nourished

We believe that planning at all levels can increase productivity and ensure that goals are attained. It should be viewed and implemented this way, not as a means of control.

At the individual's level, effective planning should involve his/her preparation of an annual workplan developed by the scientist in consultation with his/her immediate supervisor. It should incorporate strategy-focused and strategy-enhancing objectives that are substantive, clear, realistic, and verifiable. The plan should be flexible, allowing for adjustment as new opportunities arise in the course of the year just as, in the financial area, budgets are drawn up to guide rather than dictate annual spending. Further, it should be consistent with the individual's personal career interests, possibly including training or other activities that will promote his/her professional development.

At the conclusion of the year, then, these plans--as amended--should become the basis for an individual's performance evaluation, moving such evaluations from subjective judgments of staff qualities to a more objective form of measurement. Were the objectives met or exceeded? If not, why not? How should the next year's plan be adjusted? What could be done to overcome any staff weakness or weakness in support provided? The evaluation can thus become a means of individual course correction toward Center goals.

Staff members might analyze their own performance for subsequent discussion with management, or the evaluation might be made by the immediate supervisor. In any event, face-to-face discussion with the individual is essential. It is also essential that the system of merit increases based on the annual evaluation be made fully transparent, both to the staff member concerned and to the Program Leader or other supervisor who prepared the original evaluation. A percentage increase out of the context in which it was determined sends no message and fails either to reward good performance or stimulate improvement.

The design and implementation of such an individual planning and evaluation system for CIAT will take time, care, and training in its use, but we believe it will reap benefits in productivity and in staff equity. We note and commend a commitment in the strategic plan to further institutionalize performance planning to facilitate adherence to established goals and priorities within the framework of flexibility and creativity. We note, too, that the Director General prepared such an annual plan to guide his own performance in 1989. Therefore,

We recommend that CIAT design and implement a system of individual performance planning and evaluation.

In due course, a similar system of performance planning and evaluation should be extended to the upper levels of the locally recruited staff as well.

5 3 5 Family issues We made a special point of speaking to expatriate spouses during our visit to CIAT in the firm belief that family contentment is a major factor in the retention of good staff Except for security concerns, which are real but were at an unusually high point at that moment, families find Cali a pleasant and relatively comfortable city in which to live The international school most widely used has a good reputation Import rights soften inconveniences from local market limitations The region is quite beautiful Comfortable housing is available (All live in private housing throughout the city, some 30 minutes to an hour from Palmira) As usual, however, spousal employment is an issue (see 5 3 1 above)

CIAT wives have devised an informal arrangement to welcome newcomers, sparked by the wife of the Director General, who has extended great--and very well-appreciated--hospitality throughout her stay in Colombia

Occasionally, however, questions come up for families settling into a new environment that might appropriately be directed to a central point of contact on CIAT's staff Although CIAT offers considerable assistance to families already, the problem is sometimes knowing where and how to tap it, and some newcomers hesitate to take what might be considered undue advantage of colleagues' families

5 4 Human Resource Planning

Effective and timely recruitment requires advance planning This is especially necessary as CIAT revises its operational plans toward fulfillment of strategic objectives As noted in Chapter 4, we support development of a mechanism to trigger early action by those responsible for recruitment (the Office of Human Resources in the case of locally recruited staff, the respective DDG in the case of internationally recruited staff) This might well be a standardized part of the budgeting process, with a form included in the budget packet to elicit information regarding the proposed timing of recruitment, the qualifications sought, and the tasks or research area to be assigned

6 FINANCIAL MANAGEMENT

The financial management function at CIAT has been headed by the Director of Finance and Administration (DFA), who reports directly to the Director General and joins with him and the two Deputy Directors General to form the Center's senior management. During the period of this review, the DFA directly supervised and coordinated the various financial management functions, including budgeting, accounting, treasury, and payroll. A new, internationally recruited controller joined CIAT during the time of our visit, and will assume primary responsibility for the Center's financial management under the guidance of the DFA after a period of orientation.

CIAT's financial management during the five-year period subject to this review appears to have been more than satisfactory, and a number of truly remarkable improvements have been made in the Center's financial reporting and control systems. CIAT, like other centers, has begun to feel the pressure of limited donor resources available for an ever-expanding number of activities. These pressures as well as other external factors, including currency fluctuations, have led to increased complexities in budget and resource allocation, cash flow management, and foreign exchange risk management. CIAT has taken a lead in exploring new approaches to many of these problems, and is to be commended for its innovative thinking regarding both revenue generation and risk exposure management. At the same time, during our second visit to CIAT in September 1989, the Center was experiencing a cash flow problem, with a short-term revenue shortfall equal to 27% of its total expenses to date. Due to the Center's low levels of cash reserves, CIAT had arranged for short-term commercial lines of credit totaling six million dollars, and had drawn down or otherwise committed over four million dollars in order to cover its current operating expenses.

In the analysis that follows, we examine the Center's overall financial performance, including growth and changes in both revenue and expenses, the Center's cash flow and liquidity, and the efforts taken to minimize the Center's foreign exchange risk exposure. In this section, we also briefly discuss CIAT's debt swap proposal as a method of revenue enhancement. A section on the organization and staffing of the financial management function will lead directly to a discussion of CIAT's much improved financial reporting and control systems. The chapter will conclude with a review of the Center's internal and external auditing functions.^{1/}

^{1/} A discussion of CIAT's operational planning and budgeting practices is included in Chapter 4 of this report.

6 1 Overall Financial Performance

CIAT's income and expenses, expressed in real dollar terms, have remained relatively flat over the five-year period. However, this masks important changes within the period, changes in total purchasing power due to the devaluation of the Colombian peso, and shifts in resource allocation between programs and between expense categories.

6 1 1 Growth and change in revenue While CIAT's real dollar income in 1988 was only 4% higher than its 1984 income, significant fluctuations occurred during the five-year period. CIAT experienced a 12% decline in real dollar income in 1985 as compared with the previous year, which resulted in both a reduction in the dollar value of expenditures and a revenue shortfall for the year. Since that time, CIAT has increased its total dollar income in real terms by an average of 5.5% per year.

Although real dollar income declined in 1985 and only grew by 5.5% per year since then, CIAT's purchasing power increased significantly beginning in 1985, due to a 42% devaluation in the Colombian peso. After adjustment for inflation, this devaluation resulted in a net improvement in the purchasing power of the dollar, and the 12% decline in real dollar income actually translated into a 4.8% increase in CIAT's purchasing power in 1985. Taking into account the peso devaluation through 1988, and adjusting for inflation in pesos and dollars, CIAT's total purchasing power has actually increased by a total of 25.7% over the five-year period, or an average of 5.9% per year.

Income received from donors has fluctuated significantly during the period under study. A reduction in income from one major donor in 1985, and little or no upward adjustment in income from most other major donors, led to the decline in real donor income that year. Since 1985, modest increases have been witnessed in overall donor income, although individual donor behavior has varied widely (see Table 6 1).

We noted a trend in the restrictions placed on donor income received during the period. Core income, which accounted for 92% of CIAT's total income in 1984, declined by nearly 8% in real terms by 1988. This decline was offset by a 125% growth in special project income over the five-year period, which by 1988 accounted for 15% of total revenue (Table 6 2).

Given the uncertain and increasingly restricted nature of donor funding, CIAT's flexibility to undertake those activities it has planned may become more limited. A proactive approach to fund raising will continue to be critical in ensuring that CIAT maintains control of the direction of its programs.

Table 6 1 Sources of CIAT's funds 1984 - 1988

Fund sources	Year				
	1984	1985	1986	1987	1988
(000 of 1988 US dollars)					
Five major donors	17,749	15,422	17,632	17,749	18,202
United States (AID)	6,504	6,304	6,062	5,209	5,565
IDB	4,639	4,482	4,627	4,826	4,640
Switzerland (SDC)	3,445	1,287	2,616	2,886	3,157
Japan	1,755	1,540	2,338	2,702	2,795
EEC	1,406	1,809	1,989	2,126	2,045
All other donors	10,734	9,803	8,671	9,520	10,744
Other income	430	335	565	1,044	1,086
TOTAL INCOME	28,913	25,560	26,868	28,313	30,032
(percentage of total income)					
Five major donors	61.4%	60.3%	65.6%	62.7%	60.6%
United States (AID)	22.5%	24.7%	22.6%	18.4%	18.5%
IDB	16.0%	17.5%	17.2%	17.0%	15.5%
Switzerland (SDC)	11.9%	5.0%	9.7%	10.2%	10.5%
Japan	6.1%	6.0%	8.7%	9.5%	9.3%
EEC	4.9%	7.1%	7.4%	7.5%	6.8%
All other donors	37.1%	38.4%	32.3%	33.6%	35.8%
Other income	1.5%	1.3%	2.1%	3.7%	3.6%
TOTAL INCOME	100.0%	100.0%	100.0%	100.0%	100.0%

Table 6 2 Types of CIAT's funds 1984-1988

Fund types	Year				
	1984	1985	1986	1987	1988
(000 of 1988 US dollars)					
Core	26,491	23,048	23,110	25,026	24,452
Unrestricted	14,336	12,879	11,918	11,682	11,606
Restricted	12,155	10,169	11,192	13,344	12,846
Special project	1,992	2,177	3,193	2,243	4,494
Other income	430	335	565	1,044	1,086
Total income	28,913	25,560	26,868	28,313	30,032
(percentage of total income)					
Core	92%	90%	86%	88%	81%
Unrestricted	50%	50%	44%	41%	39%
Restricted	42%	40%	42%	47%	43%
Special project	7%	9%	12%	8%	15%
Other income	1%	1%	2%	4%	4%
TOTAL INCOME	100%	100%	100%	100%	100%

During the period under review, CIAT has significantly expanded its own income-generating activities. These have included increased sales of commodities produced as a by-product of research programs, interest on the investment of surplus cash from donors, and recovery of indirect costs on special projects. Taken together, these amounts have accounted for as much as 4% of CIAT's total income.

CIAT's management is to be commended for its aggressive pursuit of self-generated income, and should be encouraged to continue to develop additional self-generated income as further protection against fluctuations in donor income. The CGIAR Secretariat's policy of reducing the level of the World Bank contribution as self-generated income increases may, however, reduce the incentive for individual centers to generate such income.

6.1.2 Growth and change in expenses While CIAT's expenses have obviously moved roughly in line with its income, significant changes are observed in their distribution, both in programmatic terms and by category of expense. In programmatic terms (see Table 6.3), the Bean Program has significantly increased its share of total resources, primarily due to the specially funded projects in Africa. The Rice Program, while much smaller, has increased its resources by 50% in real terms over the five-year period. The Cassava and Tropical Pastures Programs, as well as research support, have maintained their share of total resources, while Training and Communications has declined slightly. The cost of administration and plant operations has dropped in both absolute terms and as a percentage of total expenses, from 24% to 17%.^{1/} Personnel costs have decreased in their percentage claim on total resources,^{2/} with most other items remaining more or less constant, indicating a relatively stable expense structure at CIAT over the five-year period.

1/ The decrease of approximately 1.5 million 1988 dollars over the five-year period is due to a combination of the transfer of approximately \$200 thousand of operating expenses directly to the programs, and the decrease in the dollar value of much of the administrative budget due to the heavy devaluation of the Colombian peso beginning in 1985. The staffing pattern and overall level of support in the area of administration and plant operations appear to have been held constant during the five-year period, despite the increase in research activities.

2/ Again, this is due primarily to the decrease, because of devaluation, in the dollar value of salaries paid in Colombian pesos.

Table 6 3 Distribution of total expenditures by activity
1984-1988

Activity	Year				
	1984	1985	1986	1987	1988
(000 of 1988 US dollars)					
Bean Program	3,454	3,899	4,058	4,701	6,085
Cassava Program	2,305	2,482	2,434	2,588	2,316
Rice Program	1,209	1,388	1,260	1,567	1,783
Tropical Pastures Program	3,710	3,509	3,452	3,903	3,872
Subtotal Research Pgms	10,678	11,278	11,204	12,759	14,056
Research Support	4,350	4,344	4,392	4,112	4,771
Training & Communications	3,887	3,283	3,214	2,974	3,182
Administration & Plant Op	6,637	5,948	6,123	5,377	5,148
Capital Funds	2,123	1,661	1,094	2,739	2,657
Other Special Projects	343	348	220	352	218
TOTAL EXPENDITURES	28,018	26,862	26,247	28,313	30,032
(percentage of total expenditures)					
Bean Program	12%	15%	15%	17%	20%
Cassava Program	8%	9%	9%	9%	8%
Rice Program	4%	5%	5%	6%	6%
Tropical Pastures Program	13%	13%	13%	14%	13%
Subtotal Research Pgms	38%	42%	43%	45%	47%
Research Support	16%	16%	17%	15%	16%
Training & Communications	14%	12%	12%	11%	11%
Administration & Plant Op	24%	22%	23%	19%	17%
Capital Funds	8%	6%	4%	10%	9%
Other Special Projects	1%	1%	1%	1%	1%
TOTAL EXPENDITURES	100%	100%	100%	100%	100%

6 1 3 **Liquidity and cash management** At the time this report was written, CIAT was experiencing problems in its cash flow. By September 1, 1989, income totaled only \$12.73 million, equal to 44% of the annual budget. At the same time, expenses totaled \$16.78 million, or 58% of the budget. The resulting \$4.1 million negative cash flow, plus an additional \$1.4 million of funds committed in the form of certified letters of credit for the purchase of vehicles and major laboratory equipment, was being financed by the Center's working capital fund ^{1/} and over four million dollars of short-term debt.

Most of the revenue shortfall was due to a difference between donor intentions signaled during International Centers Week 1988 and donor disbursements through the end of August. CIAT's management expressed confidence that the shortfall would eventually be made up with donor contributions, including approximately \$2.1 million from the World Bank as donor of last resort, and that there would be no need to curtail the Center's operations or budgeted spending. Nevertheless, as of September 1, 56% of CIAT's approved 1989 budget had not been received and 72% of that was technically unfunded ^{2/}.

CIAT's current cash flow problem is the result of the uncertainties inherent in the CGIAR's funding process, a series of unrelated events in various donor organizations, and a low level of working capital reserves maintained by CIAT. There is, of course, little guarantee that any donor (other than the World Bank) will actually contribute funds, and some funding expectations are actually based to a large degree on an individual donor's prior behavior. As the year progresses, donor funds are committed and

^{1/} CIAT's working capital fund reached a total of \$1.37 million by the end of 1987. During 1988, an additional \$593 thousand were contributed, primarily from self-sustaining services, for a total of \$1.97 million, equal to approximately 30 days of 1988 budgeted core expenditures. During 1988, however, CIAT's airplane was replaced at an estimated net cost, after allowing for resale of the old airplane, of \$1.14 million. This amount was charged against working capital, to be paid back with the aircraft's operational surplus as travel was charged to operating accounts. During 1989, the sale of the old airplane was finalized at a price higher than originally expected, resulting in a credit to working capital of \$600 thousand. Due to this transaction, CIAT's working capital fund is now equal to approximately \$1.43 million, or 18 days of the Center's 1989 budgeted essential expenses.

^{2/} Donations only become income, either in the form of cash income or accounts receivable, upon the receipt by CIAT of a letter of commitment from a donor or the CGIAR Secretariat. During the period of the EMR visit in September, a firm commitment for an additional two million dollars was received.

made available to each center. The timing of these commitments, however, is uneven and generally concentrated in the second half of the year, while center operations, of course, occur at roughly an even pace throughout the year. (Center spending patterns are actually also affected, with heavier than normal spending, especially for capital items, during the latter months once total revenue is more certain.)

During the period between 1984 and 1989, CIAT's seasonal funding pattern has steadily worsened, caused by delays in both commitments and disbursements of funds by several of CIAT's most important donors (see Table 6.4 and Graph 6.1). Until 1988, the working capital fund and other balance sheet items generally combined to produce liquidity and a "quick ratio" ^{1/} over 1.0. In 1989, however, CIAT experienced a liquidity problem during the first quarter and again in the third quarter due to a lack of confirmation of donations from its traditional supporters.

It is difficult to suggest how to avoid such a crisis. Obviously, working capital reserves should be higher (the CGIAR recommends 30 days worth of expenditures, CIAT began 1989 with a working capital reserve equal to 10.5 days of its 1989 working budget for essential expenditures) ^{2/}. But it is difficult to justify enough working capital to cover the sort of needs experienced by CIAT in 1989 while operating funds are scarce throughout the system. A more fundamental solution would include an improved planning and disbursement mechanism in individual donor organizations. This is obviously beyond the control of either individual centers or the CGIAR Secretariat. The latter has been using its influence to encourage member organizations to both recognize the problems caused by unpredictable funding patterns and move toward providing greater assurances of funding (as well as disbursements) as early in the year as possible. Finally, CIAT might consider additional sources of revenue which would provide a reliable longer term funding base and would complement annual funding from within the CGIAR system. Such revenue sources might include endowment funds and long-term funded research projects. Opportunities to take advantage of local economic circumstances to produce extraordinary income in ways which are not inconsistent with the objectives of the centers and do not subject the center to unnecessary financial or political risks should also be

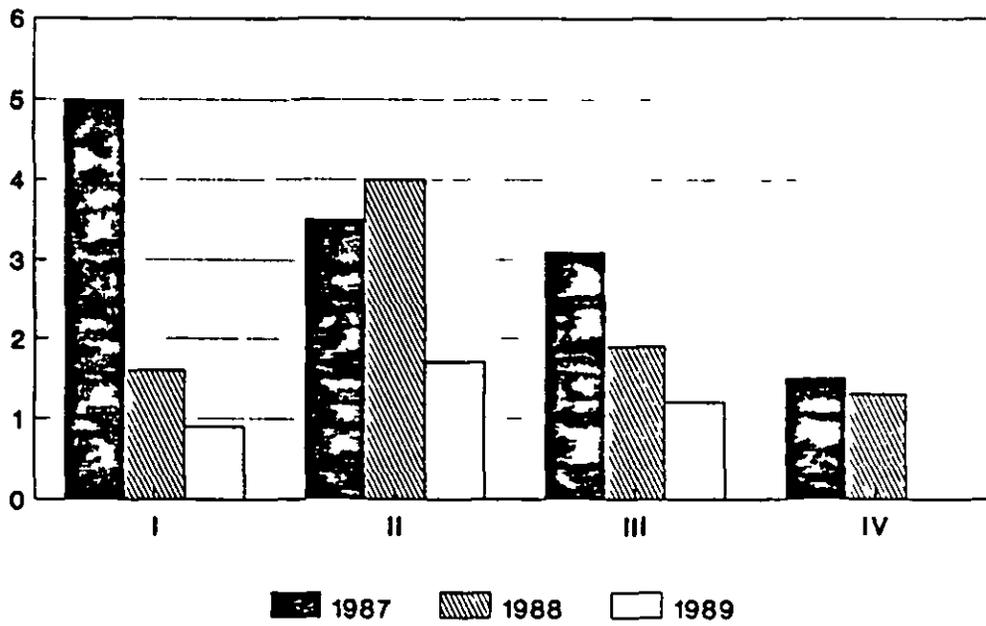
^{1/} Liquidity ratios are used as measures of an organization's overall solvency, or the ability to meet its obligations over the short term. The "current ratio" (current assets/current liabilities) includes inventories as a contributor to liquidity, while the "quick ratio" excludes inventories and other assets not easily converted to money.

^{2/} Please see footnote #1 on page 48 for further explanation of the changes in CIAT's working capital fund.

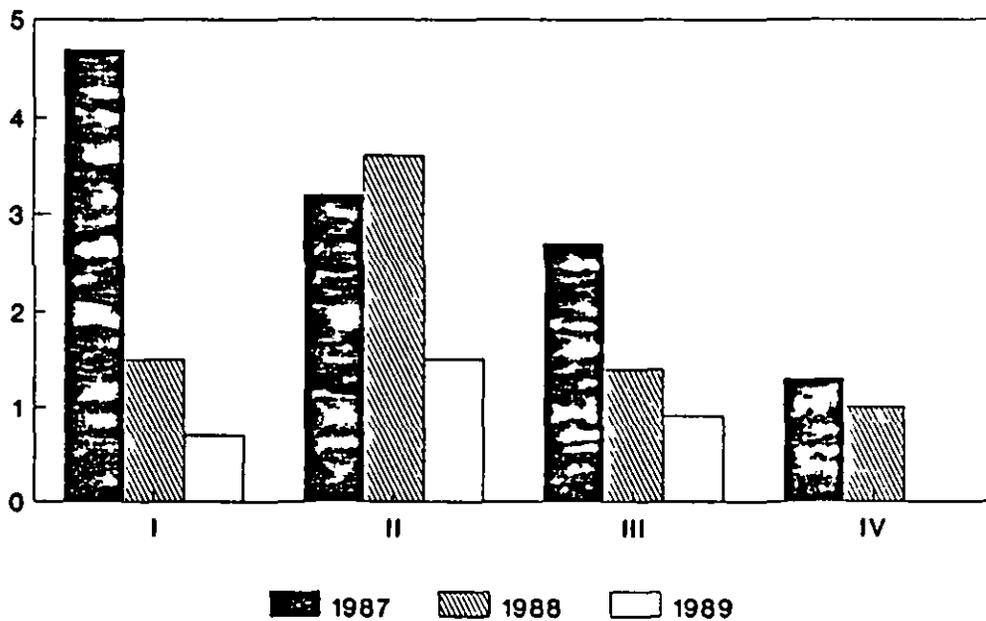
Table 6.4 CIAT liquidity analysis (stated in thousands of US dollars)

	Year												
	1985 Quarter	1986 Quarter	1987 Quarter				1988 Quarter				1989 Quarter		
	IV	IV	I	II	III	IV	I	II	III	IV	I	II	III
Current assets													
Cash and short term investments	2804	5068	3779	6268	1665	5003	3390	48	917	3993	1521	1375	2071
Accounts receivable													
Donors													
Unrestricted core/essential	1758		7511	3059	2804	1873	7392	11942	5333	173		4697	2116
Restricted core/essential			6980	4846	3275	610	1220	416	1503			3011	2476
Special projects	978	227	227	214						1464			
Subtotal donors	2736	227	14718	8119	6079	2483	8612	12358	6836	1637	0	7708	4592
Others	1544	1411	1853	2000	1566	2483	2482	2876	3453	2597	2694	3150	2506
Total accounts receivable	4280	1638	16571	10119	7645	4966	11094	15234	10289	4234	2694	10858	7098
Inventories	2328	1323	1479	1847	1544	1680	1274	1736	4470	3095	1665	1849	2223
Total current assets	9412	8029	21829	18234	10854	11649	15758	17018	15676	11322	5880	14082	11392
Current liabilities													
Short term loans and bank overdrafts													
Commercial banks	1017	146	1	1	1	543	5363			400	1102	1758	3303
World Bank										1500	1500	2000	2000
Subtotal loans and overdrafts	1017	146	1	1	1	543	5363	0	0	1900	2602	3758	5303
Accounts payable	4231	3548	2448	3482	1161	2798	1099	1920	5422	2418	1387	1847	795
Accrued salaries and benefits	440	676	1269	1275	2295	1230	1888	1946	2707	1290	2216	2498	3601
Advances received from donors	1994	553				2298	324	80	80	280			
Accounts payable to donors		655	655	383	4	983	983	260		2756			
Subtotal acc payable & others	6665	5432	4372	5140	3452	7309	4294	4206	8209	6744	3603	4345	4396
Total current liabilities	7682	5578	4373	5141	3453	7852	9657	4206	8209	8644	6205	8103	9699
Liquidity analysis													
Current ratio	1.2	1.4	5.0	3.5	3.1	1.5	1.6	4.0	1.9	1.3	0.9	1.7	1.2
Quick ratio	0.9	1.2	4.7	3.2	2.7	1.3	1.5	3.6	1.4	1.0	0.7	1.5	0.9

Graph 6 1
CIAT's current ratio by quarters



CIAT's quick ratio by quarters



encouraged. The proposed Colombian debt swap (discussed below in section 6.1.5) is an example of innovative thinking in this area.

We recommend that CIAT pursue a policy of maintaining its working capital fund at a level equal to 30 days of expenditures (approximately three million dollars in 1989).

We further recommend that CIAT join the CGIAR Secretariat and other centers in searching for innovative funding arrangements with individual donor organizations with the objective of improving long-term income stability.

6.1.4 Foreign exchange risk management 43% of CIAT's budgeted donor income for 1989 essential expenditures is expected in currencies other than the U.S. dollar. For budgeting purposes, expected donations were translated into their dollar equivalents using the exchange rates as of December 1, 1988. Since then, most of these currencies have devalued against the U.S. dollar. The total amount of the resulting foreign exchange loss to CIAT will depend on when payment in foreign currency is received and exchanged for dollars, or the rate used by donor organizations to translate their own currency-denominated donations into dollars prior to their actual disbursement in dollars. As of mid-July, currency losses on donations received by CIAT, plus paper losses to date on budgeted donations yet to be received, totaled \$838 thousand. In all likelihood, this figure will surpass one million dollars before all donations are finally received. Similar situations are being experienced in a number of other centers throughout the system, and while there does appear to be reason to expect that the World Bank's stabilization fund, which is administered by the CGIAR Secretariat, will be able to "bail out" all those in need in 1989, very little may be available for a similar situation in the future.

During 1989, CIAT's management has engaged in a limited amount of exchange risk management through the purchase of forward contracts or currency options. These have only been possible when assurance of the amount and timing of a foreign currency donation were available, but in those cases where such activities have been practiced, they have been highly successful. Unfortunately, considerable confusion exists on the sharing of responsibilities in the area of currency risk management between CIAT (or other individual centers) and the CGIAR Secretariat. Under the current policy, any foreign exchange gains made by a center are to be turned over to the stabilization mechanism, which will continue to guarantee the centers against future foreign exchange losses as well as losses due to inflation. Such a policy obviously does little to encourage centers to assume any risks inherent in risk exposure management.

A more logical policy might be for all foreign exchange risks to be centrally managed by the CGIAR Secretariat through the use

of both its stabilization fund and the various foreign exchange risk management tools available. Unfortunately, this is not feasible now, since the Secretariat does not actually receive the donor contributions. If, however, a donor were to agree to commit itself to an overall disbursement timetable, all CGIAR centers might then agree to having a central unit exercise a treasury function for the entire system, with the resulting improvement in both cash flow and exchange risk management.

CIAT should continue to explore opportunities to cooperate with other centers and the CGIAR Secretariat in developing new approaches to managing foreign exchange risks.

6 1 5 Debt swap proposal During the first half of 1989, CIAT management presented a proposal to its Board on engaging in a debt swap. Under this arrangement, Colombian Government debt would be purchased at a significant discount from its face value, and exchanged for similar dollar-denominated Colombian debt which would be payable in local currency at the exchange rate current on the day of payment. The discounted Colombian debt would be paid for by CIAT with funds from a commercial loan which would be repaid from dollar donor income on a schedule matching that of the income received in the form of the Colombian debt repayment. A preliminary analysis of the financial implications of such an arrangement suggested a net return of over \$30 million on an initial investment of \$30 million for the purchase, at a 40% discount, of Colombian debt with a face value of \$50 million. Since the investment would be financed with a commercial loan with a repayment schedule equal to that of the converted Colombian debt (interest payments due on the \$30 million commercial loan would also be matched against interest received on the \$50 million Colombian debt), the Center would suffer no adverse cash flow at any time.

This proposal is obviously very intriguing, and would certainly do a lot to help CIAT ensure its own financial stability. There are, however, a number of questions which remain to be answered and which are critical to the proposal. First, it is not clear that the Government of Colombia will actually approve of such an arrangement, or if it does, what sort of restrictions might be placed on the use of the debt swap proceeds. It may be expected that some sort of additionality might be placed on the use of the proceeds such that they would not displace other foreign currency entering Colombia. (If the debt swap proceeds were to be used to establish an endowment fund for CIAT, such a condition might be more easily satisfied.) Secondly, some sort of bank guarantee above and beyond the Colombian debt will probably be requested of CIAT by the bank providing the financing for the debt swap. Since CIAT is not in a condition to provide such a guarantee, arrangements will have to be made through the CGIAR Secretariat or the World Bank, which as a matter of policy do not guarantee loans. Finally, the cash flow implications of the entire operation

must be studied in great detail and will depend on the specific nature of the debt instruments involved. If interest payments due the commercial bank do not coincide exactly with those due on the Colombian debt, CIAT might easily find itself unable to make a debt service payment due to a lack of sufficient dollar reserves.

The debt swap proposal is an excellent attempt on the part of CIAT to assume a more proactive responsibility for the management of its income. Significant questions concerning the present proposal may make this particular debt swap more difficult to implement than originally envisioned. But similar ideas should continue to be pursued, and system-wide incentives should be created to encourage such innovative thinking.

We recommend that the CGIAR Secretariat and the centers jointly agree on a set of system-wide policies which would guide the centers' debt swap operations.

6 2 Financial Organization and Staffing

The financial management functions at CIAT have been directed by the Director of Finance and Administration (DFA), who is a member of the Center's Senior Staff reporting to the Director General. Up until the time of this report, the DFA supervised more or less directly the work of the controller (classified as a GAS position), the treasurer, and the heads of budgets, accounting, and fixed asset control. The DFA retained ultimate responsibility for financial matters, and all financial reports to the office of the Director General, the Board, CGIAR, and donors emanated from his office. As this report was written, a new controller joined CIAT as a member of its internationally recruited Senior Staff, and he is expected to assume responsibility, control, and direct supervision of all aspects of the financial management function in the near future. The new controller will report to the DFA, who will continue to assume ultimate responsibility for the Center's financial affairs and liaison with CIAT's senior management, its Board, and outside organizations.

Reporting to the controller, treasurer, and heads of budgeting, accounting, and payroll are a total of 38 professional support and clerical positions, all located at CIAT's Palmira station. This number has not undergone significant growth during the period under review.

6 2 1 Director of Finance and Administration We feel that the Director of Finance and Administration has done a fine job in providing organization and leadership to financial management activities at CIAT during his tenure in this position. He is to be commended for the success achieved in the systemization of the various budgeting, accounting, and control systems, and the vastly improved transparency with which the Center's finances are

managed. He is also to be commended for his aggressive and innovative approach to exchange risk management and the self-generation of income, as measures necessary to ensure CIAT's financial security. We do feel, however, that his organizational and management skills will be usefully complemented by the addition of a Senior Staff member with significant prior experience at the international level in financial management. In this regard, the new controller will be a welcome addition to the organization.

6 2 2 Office of the controller During recent years, a combination of insufficient leadership at the controller's level, the dynamic leadership provided by the DFA, and the need to concentrate efforts on the design and implementation of financial control and reporting systems in close collaboration with CIAT's Office of Systems and Procedures combined to reduce the profile of the office of the controller. With the implementation of a vastly improved reporting and control system, and with the changing funding environment indicated in previous sections of this chapter, it will become increasingly important to focus attention on the controller function, with specific attention placed on cash flow management.

Reporting to the controller are a group of extremely well-qualified and highly motivated professional support personnel, including the heads of treasury, budgeting, and accounting. We feel that the separation of functions, together with the presence of established procedures, controls, and internal audit practices, are sufficient to ensure transparency in CIAT's financial management.

6 3 Financial Reporting and Control

CIAT's financial reporting and control systems are arguably the area of greatest improvement within the Center's finance and administration area since the last EMR. A major contributor to this improvement has been the development of an integrated management information system (MIS). This work has been closely coordinated with the parallel development of vastly improved administrative policies and procedures, including those pertaining to financial control systems.

6 3 1 Management information system (MIS) Although CIAT had actually begun to separate its management information needs from those of the research programs with the purchase of an S/36 computer in 1983, it was not until 1986 that an integrated, well-thought-out, and carefully designed set of accounting, personnel management, and other administrative systems began to be implemented. At the time of this report, a completely integrated management information system (MIS) was available to all administrative and major research departments, and included the following functions: personnel and payroll (both domestic and

international), accounting (including general ledger, treasury, budgeting, accounts receivable, and accounts payable), purchasing and inventory control, fixed asset control, motor pool control, communications, bibliographic acquisitions, menu planning and costing, work order planning and transfer pricing, Carimagua inventory control (including cattle inventory), and Miami purchasing and inventory control

With the completion of most major systems, CIAT must now confront "second generation" challenges related to computer capacity and user awareness

The S/36 computer purchased in 1983 is fast approaching the limits of its capacity, both in terms of disk space and terminal connections. While additional disk space can be acquired at a modest cost, there are now no additional terminal connections available for additional system users. Solutions to this problem include limiting access to the S/36, upgrading CIAT's administrative computer capacity through the purchase of an AS/400, or taking advantage of any excess capacity available on the IBM 4361 used by CIAT's research units. This is obviously a problem to be resolved by the appropriate members of CIAT's management, but it may necessitate additional investment in new machinery.

User awareness problems are common to organizations undergoing rapid systems development, and CIAT is no exception. While vast amounts of information of all types are now available to managers at all levels via their own consoles, usage of such information varies. The example set by the Director General, who has become an active user of the MIS, is laudatory, but additional steps are needed to improve usage of the system. Such steps must include an openness on the part of the Administrative Systems and Procedures Department to the needs of users (including responding to requests for variation in report presentation format and devising alternative methods of information access), as well as an openness on the part of users to the utility of MIS in the execution of their managerial responsibilities. A series of promising activities in this area are already underway within the Administrative Systems and Procedures Department.

6 3 2 Accounting policies CIAT's accounting policies are generally in line with CGIAR accounting policies, but differ with Generally Accepted Accounting Principles (GAAP) in two important ways. First, depreciation is not recognized as an expense. Assets are carried at full book value, and are only removed from the books when they are actually sold or otherwise disposed of. Secondly, purchase commitments are recorded as expenses even if the purchased goods have not been received.

Criticism over the years on these two points has been recently supported with a change in accounting practices in the United States requiring that not-for-profit organizations account for

depreciation We feel that it is important for CIAT to comply with CGIAR accounting policies until such time as a system-wide decision is made to change them Such a decision should be based on a thorough analysis of both the very real benefits of using depreciation to arrive at an estimate of the full cost of an activity or program, and the equally valid need to account for capital expenses in the same time period as the donor contributions which pay for those expenses

CIAT management has suggested changes in the treatment of commitments, especially those regarding capital improvements We concur with CIAT's external auditors that such changes should receive the approval of the CGIAR before being implemented

6 3 3 Financial reporting As discussed above, CIAT has, after a long period of development, false starts, and frustrations, now completed the installation of a sophisticated, on-line financial reporting system Budget versus actual expense reports are available to all those with cost center responsibility, either on-screen or in printed form In addition to a summary budget report for each cost center, on-line detailed listings of each expense item are available, allowing any staff member who holds budgetary responsibility to verify any charge against his/her budget Accounting transactions are entered directly into the system, with the result that expense records are updated daily Monthly reports are printed and distributed to all cost centers, with detailed and aggregate reports prepared for various intermediate levels of supervisory responsibility These reports are used by both those with line responsibility for budget control and the budget office itself to control expenses (see next section)

Quarterly reports are prepared for CIAT's Executive Committee of the Board and its Audit and Operations Review Committee, and additional periodic reports are prepared for other outside constituencies Annual financial reports, accompanied by the report of CIAT's external auditors, are presented to the Board of Trustees during its annual meeting (Due to differences of opinion regarding the presentation of various capital spending and other reserve items, the format of the annual financial statement presented to the Board by CIAT's DFA was different from that presented by its external auditors While a trained accountant is able to reconcile one presentation with the other, the apparent inconsistency created the impression of a lack of transparency in CIAT's finances, and this should be avoided in the future)

In our view, CIAT's financial reporting system is fully adequate and a significant improvement over the system which existed several years ago

6 3 4 Internal control policies and procedures Inadequate internal control policies and procedures within CIAT's financial

management were commented on in the first EMR in 1984, and were the focus of several suggestions at that time. As a partial result of financial irregularities which were discovered in 1982, a new Director of Finance and Administration accelerated, beginning in 1983, the development of a new set of financial reporting and control procedures. CIAT changed its external auditors at about the same time, and as a result of a procedural review carried out by the new auditing firm, a total of 60 separate recommendations were made.^{1/} Due to the severe changes in procedures implemented at that time, strong resistance was encountered throughout the organization, and an adversarial relationship developed between Finance and Administration and the rest of the organization.

In 1986, after several changes in both Finance and Administration and the Administrative Systems and Procedures Department, CIAT was able to make significant headway in the development of the integrated set of computer-based systems described in the previous section. As the various formal systems were installed, administrative procedures were continually updated and brought in line with the new systems. (An initial, eight-volume procedures manual which was commissioned by CIAT in 1984 proved to be too unwieldy and was largely ignored.) At the time this report is being written, a new, "user friendly" administrative services manual is in the last stages of editing, and it provides complete instructions concerning all of the various control forms and systems used throughout CIAT. Without going into detail concerning the nature and content of the policies and procedures, we are convinced that the Center has implemented controls over its headquarters- and Miami-based financial management and the various functions which are related to it (i.e., purchasing, inventory control, payroll, etc.).

One important form of financial control practiced throughout CIAT is the comparison between budgeted and actual expenses. Reliable financial reports are available on a monthly basis, and all those with budgetary responsibility are required to maintain expenses within budgeted amounts on a line-item by line-item basis. Since budgets may not have been as vigorously enforced in the past, due primarily to inadequate financial reporting systems, less attention was sometimes paid to budgetary compliance by operating sections, and overruns were more frequent. With CIAT's improved reporting system, budgetary compliance is being more

^{1/} The number of individual recommendations contained in the Memorandum of Recommendations on Accounting Procedures and Internal Control Measures" issued annually by CIAT's external auditor has dropped each year after 1984, with 20 recommendations in 1985, 17 in 1986, 13 in 1987, 6 in 1988 and 3 in 1989. This is an obvious indication of the attention and corrective action taken by CIAT in response to the recommendations made by its outside auditors.

effectively enforced, and section and program leaders have become more active in identifying accounting errors or in suggesting that budgeted amounts are inadequate (This may indicate that more attention should be paid to the budgeting process itself, as indicated in Chapter 4)

The one area of CIAT's internal controls which we did find to be of concern was that governing the control of its outposted activities and, in particular, its Africa-based projects. Due to the geographical separation, language and cultural differences, lack of appropriately trained support personnel, relationships and reporting requirements with donors, and communication difficulties with Palmira, CIAT found it more difficult to provide the level or quality of administrative support required by those members of its staff posted in Africa. Problems were reported, and in many cases directly observed, in most areas of financial reporting, as well as in the execution of administrative functions in the area of personnel administration, purchasing, etc. CIAT's management is well aware of these difficulties, and is actively working to develop solutions. A specially prepared procedures manual, designed to address the needs of CIAT staff in Africa, is one recent initiative taken to improve this situation.

We recommend that CIAT continue to place a high priority on the development of administrative systems and procedures which will be more appropriate to the needs and circumstances of its outposted staff.

6 3 5 Cash and investment management As indicated in the first section of this chapter, the intensive management of CIAT's cash position has become of critical importance to the Center's financial health. As the importance of cash management has become ever more apparent, a number of cash management policies and procedures have been developed and codified in the form of a policy statement by CIAT's Board on the management of financial resources. According to the Board's policy statement, CIAT considers the management of its funds to be a profit center that can generate additional financial resources to be made available in furtherance of the Center's mandate. The statement outlines general guidelines regarding the investment of surplus amounts of cash, borrowing of financial resources, banking relations, and hedging of currencies, and establishes a procedure of consultations regarding special transactions (i.e., the debt swap proposal).

Prior to the formal adoption of this policy in mid-1989, CIAT's management had already begun to embark on a number of proactive cash management activities, including short-term investments in various different currencies, currency swaps, and currency hedging. As discussed at the beginning of this chapter, CIAT has also been forced to negotiate and draw upon sizeable overdraft facilities and other unsecured lines of credit. In carrying out these various activities, CIAT has developed

additional banking relationships both in Colombia and abroad, and is now able to manage demand and short-term investment accounts in as many as ten currencies using an on-line banking hookup with its principal bankers

We are impressed with the proactive approach taken toward the management of financial resources at CIAT, and with the Board's endorsement of this approach. At the same time, we urge caution. Aggressive financial management is applauded while the results are positive, but may quickly be condemned as irresponsible when the tide turns. CIAT's experience to date has, fortunately, been quite positive. But an apparent loss in a forward transaction (which would of course be offset by a gain in the underlying transaction) is inevitable and is statistically as likely as an apparent currency gain (offset again by a loss in the underlying transaction). CIAT, its Board, and the CGIAR system must be prepared to fully protect the Center's financial management in the case of apparently adverse results. Other aspects of the management of financial resources also imply some degree of risk, and both CIAT's management and Board must recognize that risk is the inevitable price of a more proactive financial resource management. These risks must be closely monitored by the Audit and Operations Committee of CIAT's Board.

6.4 Auditing

6.4.1 Audit and Operations Review Committee of the Board

The Audit Committee of the Board was established in 1982 and has met yearly in order to review the financial results of the previous year, the budget status of the current year, and the budget proposal for the next year, meet with both the internal auditor and CIAT's external auditors, and monitor compliance with the recommendations regarding financial management procedures made by the external auditors. Based on this meeting, the Audit Committee makes recommendations to the Board regarding the acceptance of the audited financial statements and the appointment of CIAT's external auditors. It appears from the minutes of the annual Audit Committee meetings that this Committee has made a conscientious effort to provide Board-level oversight to CIAT's financial management function, and has played a strong role in encouraging management to implement the various reforms to the financial reporting and control system which have been discussed in previous sections of this report. In 1989, the Audit Committee's mandate was expanded to include reviews of the Center's general management and operations, in addition to its financial

management, and its name was changed to Audit and Operations Review Committee ^{1/}

6 4 2 External auditing CIAT has worked with the international auditing firm Arthur Andersen & Co since 1984. During this period, Arthur Andersen & Co has played an active role in assisting CIAT in the development of appropriate internal financial controls and procedures. We met with representatives of the firm who had formed part of the group working with CIAT since 1984, and were provided with a detailed history of CIAT's progress over the past five years. In the opinion of the external auditors, CIAT's internal financial management policies and procedures are now fully appropriate, as evidenced by the inclusion of only three, relatively minor, observations in this year's management letter. The auditors report a good and constructive working relationship with both CIAT's management and its internal auditor.

6 4 3 Internal auditing A new internal auditor was appointed in late 1986 and, in close collaboration with the external auditors, undertook a series of internal auditing projects beginning shortly thereafter. The results of each individual project are presented to CIAT's Director General with a copy to the unit in question. A summary of all internal auditing projects is prepared and distributed to the Audit and Operations Review Committee, which also meets personally with the internal auditor during its annual meeting. Any unusual findings made during a routine audit are communicated directly to the Chairperson of the Audit Committee.

Two problem areas have been identified and reported on in recent months by CIAT's internal auditor. After an initial visit to the Carimagua station, irregularities were identified concerning the methods in which cattle inventories were controlled. While recognizing the difficulty in accounting for over 4,300 head of cattle spread out over 22,000 hectares of land, a much improved inventory control system was identified as necessary. During the period following this visit, a new cattle inventory control system (which also allows for entry of scientific information required by the research personnel associated with the Carimagua station) has been developed and implemented, and a complete cattle inventory is being taken and entered into the system.

A second area of concern involves the design and use of CIAT's various administrative systems, policies, and procedures in its outposted sites and, in particular, in the various African projects. At the request of the Director of Finance and Administration, a visit to Africa was made in 1989, for the purpose

1/ The reader is referred to our recommendation in Chapter 2 concerning clarification of the respective responsibilities of the Board's Executive and Audit and Operations Review Committees.

of helping management to improve the reporting and control relationship between Palmira and outposted staff. During this visit, the new procedures handbook for use by CIAT's Africa-based staff was discussed and modified.

The work of CIAT's internal auditor has been well received by those with whom she has worked, and an effort has been made to broaden the scope of internal auditing projects to include assistance in the identification and resolution of problems related to internal reporting and control procedures as well as compliance with established procedures.

7 GENERAL ADMINISTRATION

CIAT's various administrative services are grouped under the Director of Administration and Finance, and report either to him directly or to the Executive Officer, who in turn reports to the DFA. Under the direction of the Executive Officer are CIAT's human resources, maintenance, supplies, general services, and food and housing units, as well as the administration of the Carimagua station, travel services, and government relations. Reporting directly to the DFA, in addition to the Executive Officer, are CIAT's Legal Adviser, the Administrative Systems and Procedures Unit, the Projects Office, Administration of Principal Staff, and the Miami purchasing office^{1/}

Given the magnitude of the human resource management function, a separate chapter has been devoted to this subject in this report and includes both the work of the human resources unit and the office of administration of principal staff. In this chapter, we will briefly comment on each of the other units and some of their most outstanding advances and/or challenges during the five-year period under review. We will then discuss several themes and activities which cut across the various administrative units and characterize the administrative side of CIAT as a whole.

The EMR Panel is grateful to the many people in the area of administrative services for a series of well-prepared presentations on the achievements of the various administrative units since the last EMR. These presentations provided an excellent introduction to the management of CIAT, and greatly facilitated our work during our visit.

7 1 Executive Officer

CIAT's Executive Officer, a Colombian national and a member of the Center's Senior Staff, is a veteran of 17 years of service to CIAT, and oversees most of the Center's administrative services. Over the years, he has played a leadership role in creating and maintaining a well-run supporting environment for the Center's work. Conscious of the changing needs of CIAT and its employees, the Executive Officer has been active in defining and pursuing strategic changes throughout the administrative services area, as will be described later in this chapter.

^{1/} As discussed in Chapter 6, the various financial management functions, which are now all grouped under the Office of the Controller, also report to the Director of Administration and Finance.

7 1 1 Maintenance With a total staff of 142 and a budget of \$1 2 million, this unit is charged with the maintenance of all plant facilities and equipment in Palmira and other stations in Colombia. The unit is divided into sub-units responsible for maintenance of the electrical system, laboratory and office equipment, communication facilities, physical plant and air conditioning, and the motor pool. In addition to normal maintenance functions, the unit engages in remodeling and small-project construction work, and is charged with drawing up specifications, managing the bidding process, and overseeing the implementation of major construction contracts.

Major expansions have occurred in many areas of CIAT's physical plant, including the electrical system, air conditioning, telephones, and water, in response to the Center's growth over past years. With the possible exception of additional backup sources of electrical power, there does not appear to be any area of the plant which is in need of major expansion at this time.

Since a significant portion of the maintenance unit's work is performed for other programs or units requesting its services, a system of transfer prices has been developed and is in the process of refinement. As is frequently the case in similar situations, the marginal cost of providing a service is attractive to the purchasing unit, but full-cost transfer prices have created tensions and the impression of high cost to receiving units. We feel that full-cost transfer prices will be an appropriate indicator of the unit's efficiency, and encourage CIAT to proceed along present lines.

7 1 2 Supplies The purchasing and warehouse function at CIAT was the subject of some criticism at the time of the last EMR, and was thus the object of more focused attention during this review. We are convinced that any problems which may have existed in the past have been resolved, and that both the purchasing and warehouse functions are now being executed using systems and controls which both protect CIAT against any possible breach of discipline, and assure appropriate physical handling and storage of all purchased articles. We were impressed with the "virtual warehouse" system designed to provide warehouse protection and inventory control to articles which have been purchased by the various research programs and are therefore technically not part of CIAT's general warehouse inventory. We are also well impressed with the in-bond warehouse CIAT has negotiated with the Government of Colombia whereby shipping pallets are delivered directly from the Cali airport to a CIAT warehouse at its Palmira headquarters before being opened, and are given expeditious clearance of import and tax exoneration formalities, all under CIAT's control and within CIAT's own installations.

The Supplies Unit, like all other units within the area of administrative services, has recently been incorporated into the management information system on the Center's S/36 computer. While the computerized inventory control, with its linkages with purchasing, warehouse receipts, and requisitions, is a tremendous improvement over the past, further improvements are still under development. Foremost among these will be a system of economic order quantities (EOQ), which should help to reduce the number of individual purchases of the same item throughout the year, with the resulting savings in both administrative time and the possibility of greater discounts for bulk purchases.

As part of our review, we visited CIAT's purchasing and freight-forwarding office in Miami. This office was founded in 1986 to take the place of an independent purchasing agent who had served CIAT up until then. In our opinion, the Miami office is of both significant economic benefit and a great convenience. Due to the practice of sending complete pallets of merchandise, which meet both the maximum volume and weight parameters for this kind of shipment, CIAT has been able to reduce its freight cost, from \$ 35 per pound to \$ 20 per pound over the past three years.^{1/} Loss due to theft or damage is practically non-existent since pallets are loaded, covered, and sealed inside CIAT's Miami warehouse, and only unsealed, uncovered, and unpacked inside CIAT's Palmira warehouse. Savings are also realized in purchasing, where CIAT now receives wholesale discounts from 25% to 35% on office supplies, and similar discounts in other areas. Additional savings might be possible if CIAT were able to implement an EOQ system for its Miami purchases, where it was reported that over 80% of the purchase orders are for orders of less than \$1000.

At present, the Miami purchasing office reports directly to the Director of Finance and Administration, and works closely with both the supplies and accounting units at Palmira. Improved purchasing coordination, including the possibility for more consolidation of orders, might be possible if the Miami office were more organically related to the Executive Officer in Palmira.

7 1 3 Food and housing. The food and housing unit manages all residential facilities at CIAT, including guest housing, housing for trainees, and short-term housing for visiting or newly

^{1/} This reduction is offset, of course, by the cost of running the Miami operation. Total purchasing and shipping costs are equal to approximately 20% of the value of all purchased goods, which in 1988 was approximately \$2 million. This compares to a figure of 25% before the establishment of the Miami operation, and does not include the value of discounts on purchases, reduced loss or breakage which are not claimed, or the increased convenience offered by the Miami office.

arrived staff, with a total of 160 beds. The unit also operates all dining facilities, and serves an average of 150-200 breakfasts and dinners and 1,550 noon meals daily. Operated on a basis of cost recovery, the unit has moved from a deficit situation to one of break-even over the five-year time period.

Both the hotel and meal facilities appeared to be appropriate without being sumptuous (with the exception of the meals in the visitors' dining room, which were delicious and sumptuous during the visits of the review panels). We were especially grateful for the courtesies shown to us by all members of the unit's dedicated and hard-working staff.

An area of concern mentioned by the management of the unit was recreational facilities, especially for participants in CIAT's training programs. While a well-maintained swimming pool is at their disposal (as well as that of all CIAT staff and their families), there is no real indoor communal recreation area, appropriate for social activities during the evening, which offers alternatives to trips into Cali in search of evening entertainment. (The recreation area near the swimming pool might be upgraded to meet this need.)

7 1 4 General services A unit recently created to bring together various service sections, the General Services unit, coordinates the Center's housekeeping, security, transportation and mail services, the Cali office, and the Center's aircraft. The unit is also responsible for the resale of CIAT's vehicles after four years of use at CIAT, and the recovery of an average of 75% of their replacement value due to the tax exoneration on their original purchase and importation. This unit is also responsible for managing the Center's various insurance plans and policies, including both policies purchased from Colombian insurance companies and self-insurance plans.

7 1 5 Administration Carimagua of the station The Carimagua station, which is jointly administered by CIAT and Colombia's ICA, is managed by a board made up of three representatives from ICA and three from CIAT (the Deputy Director General, the Tropical Pastures Program Leader, and the Executive Officer). The station is administered by a Director, who is an ICA employee, a head of personnel, who is also from ICA, and heads of administration, and maintenance and field operations, who are both CIAT employees. Within CIAT, the latter both report directly to the Executive Officer, and their respective units (food and housing, supplies, accounting, etc.) all maintain liaison with their respective units at Palmira. Problems resulting from dual-reporting relationships are resolved at the level of the station's board. Most of the station's 325 workers are ICA employees, and the station's administrative costs are shared in roughly equal portions between ICA and CIAT. We found this collaborative arrangement entirely satisfactory and suggest that other CGIAR Centers explore the usefulness of this mode of operations in their own settings.

7 1 6 Travel services The system whereby CIAT purchases roughly one million dollars worth of air travel tickets per year has undergone recent change. An agreement with the travel agency with which CIAT had worked for 12 years was recently replaced with a new agreement with a much larger travel agency which, due to its size, is better able to negotiate discounts with the various airlines used by CIAT staff. While it is expected that the new arrangement will result in both a reduction in CIAT's total travel bill and an increase in the level of service received, this arrangement is still too new to evaluate.

7 1 7 Government relations An office is maintained in Bogota to handle the frequent interactions with various sections of the Colombian Government in the area of visas, tax reimbursements, import tax exoneration, etc. This office also acts as an extension of the Palmira purchasing office for goods destined for the Carimagua station or for other purchases which are best made in Bogota.

7 2 Legal Adviser

CIAT maintains both a full-time legal adviser as a member of its staff, and an outside legal adviser on retainer. The full-time adviser is charged with providing advice in the drafting of all contracts between CIAT and outside parties, as well as in other matters involving legal questions. The outside adviser, who has assisted CIAT since its original founding and who was instrumental in obtaining international organization status, also provides a legal audit function to CIAT and CIAT's Board, by reviewing generic contract forms and auditing their usage.

CIAT has faced few important legal problems (other than the move to international organization status) during recent years. A continuing claim by SENA, an agency of the Government of Colombia, involving whether CIAT was exempt from the payment of a percentage of wages to support SENA, appears to be near resolution in a way which is satisfactory to all parties.

7 3 Administrative Systems and Procedures

The administrative systems and procedures unit manages both the hardware and the development and installation of software for the S/36 computer, provides support services to the over 160 microcomputers at CIAT, develops administrative procedures for use throughout the Center, and manages the Center's electronic mail system.

The development of the management information system, which is described in more detail in Chapter 6, has been the focal point for far-reaching changes throughout the administrative area of CIAT.

during the past five years. While additional systems are under development (including an EOQ system for supplies, and an improved system integration for the Miami office), the major elements of this unit's workplan over the last several years have been accomplished and the systems are up and running.

As is the case in all organizations with significant investments in information processing capacity, the threat of obsolescence is ever present, and newer and more powerful computing capacity is constantly being requested by the Center's scientists as well as administrators. Decisions concerning the purchase of new computers, whether micro, mini, or mainframe, are made by the Center's Electronic Data Processing Committee, which has thus far been successful in imposing Center-wide controls on the kinds of computers purchased so as to ensure their compatibility as well as proper maintenance. We feel this committee has exercised excellent judgment and has performed a very important service to the Center. Other Centers in the CGIAR system may wish to adopt a similar control mechanism if they have not done so already.

7.4 Projects Office

The Projects Office, staffed with an internationally recruited professional, reports to the Director of Finance and Administration. This office was originally created in order to assist Program Leaders in the preparation and presentation of special project proposals. As problems relating to compliance with the reporting requirements of special project grants developed, due to differences between CIAT's work organization and the requirements of donors, the work of the Projects Office has become more focused on providing backup to Program Leaders, and ensuring that all necessary reports and other information called for in special project grant agreements are provided to the donors in a timely fashion.

The Projects Office also acts as a liaison between outposted projects and various headquarters offices or services, and the head of the Projects Office is often asked to act on behalf of an outposted scientist in obtaining information or services from other offices at Palmira.

As noted elsewhere in this report, the problems of coordination and communication with outposted staff, especially those who are far from Colombia, constitute one of CIAT's current challenges and are now receiving considerable and focused attention at various levels of the Center's management. The continued role of the Projects Office must be considered as plans are formulated to improve coordination and communication with outposted staff.

7 5 Themes and Challenges in CIAT's Administration

The various administrative units described in the preceding paragraphs are focused on performing their individual tasks in the most efficient and effective way possible. At the same time, they are also brought together within the area of finance and administration, where they share common themes which underlie all their individual activities, and where they together face some common challenges in continuing to serve the needs of CIAT.

The development and implementation of computer-based management information systems throughout CIAT's administrative structure constitute the first of the cross-cutting themes. Virtually unknown at CIAT a decade ago, computer systems are used not only to run the Center's accounting system but to facilitate all routine management tasks from automobile maintenance to menu planning, and to coordinate the work of the various administrative service units by providing the necessary linkages between warehouse receipts and payment of invoices, or personnel management and payroll administration. The systems themselves have been developed by Administrative Systems and Procedures, but have relied on the commitment and collaboration of many other units for their design and implementation. Underlying all these efforts has been a commitment by all to improve the level of service and accountability in all areas via the use of computer-based systems.

An 18-month-long organizational development effort is the second cross-cutting theme in the area of finance and administration. Under the direction of outside facilitators, all professional members of the area worked together in a series of task groups to develop a better understanding of the effectiveness of their unit's work, what their performance objectives might be in the future, and what kinds of activities should be carried out to improve their unit's performance. While this process has taken considerably more time and effort than originally thought, Center management strongly feels that it has been worth the effort, and hopes similar kinds of activities might be implemented throughout the Center.

Two cross-cutting challenges have also been identified by the finance and administration staff. The need to improve the level and quality of support to CIAT's outposted staff is widely recognized. These needs have increased dramatically during recent years with the explosion of both the numbers of outposted staff, and their geographical dispersion. A new procedures manual has already been written, directed specifically toward the needs of outposted staff, and there is wide consensus that such activities should be continued.

Secondly, there is a consensus across all levels of the area of administration and finance that the task of administration and finance is spread out throughout CIAT, and that most of the work in both administration and finance is in reality being done within

CIAT's various research and training programs. Individual section managers, more than personnel officers or budget directors, constitute CIAT's first line of management. A partnership needs to be developed between the area of administrative services and CIAT's line management, in order to both recognize the managerial functions involved in the job of section or unit leader and provide training in those managerial functions.

We agree that the task of management extends far beyond the area of finance and administration, and support these efforts to work with the research units to improve line management throughout CIAT. As discussed in chapter 6, the various financial management functions, which are now all grouped under the Office of the Controller, also report to the Director of Administration and Finance. This reduction is offset, of course, by the cost of running the Miami operation. Total purchasing and shipping costs are equal to approximately 20% of the value of all purchased goods, which in 1988 was approximately \$2 million. This compares to a figure of 25% before the establishment of the Miami operation, and does not include the value of discounts on purchases, reduced loss or breakage which are not claimed, or the increased convenience offered by the Miami office.

8 EXECUTIVE SUMMARY OF THE EXTERNAL PROGRAM REVIEW

This Third External Program Review sees CIAT entering its third decade with twenty successful years behind it. The Center has a longstanding reputation for imaginative decisions on changes of course and, more recently, for innovative links with its national system partners in the global agricultural research system.

Strategy

The Center's strategy paper "CIAT in the 1990s" reflects the emergence of food self-reliance as a philosophy for freeing production forces to feed the world's poor. Prominent features of the strategy are an evolving interface with CIAT's national system partners--including the devolution of some crop improvement and training activities to stronger partners--and a move upstream towards a higher proportion of strategic research. Both are underpinned by a heightened awareness of the need for sustainable land management and sustainable national research efforts.

While the strategy paper carefully addresses the question of balance in these important dimensions, it is less explicit on the balance across CIAT programs. This has been relatively stable over the last decade and the Center's plans see this historical balance continuing. The Panel asks CIAT to carefully consider whether the balance across programs will continue to be appropriate through the 1990s.

Achievements

The Center has had solid achievements from its commodity programs. National systems have released 46 bean varieties incorporating CIAT material and these are grown on some 350,000 ha annually, mainly in Latin America and the Caribbean. The Bean Program's nationally driven regional networks are leading the way to a closer partnership with national systems in Africa.

The Cassava Program has played an important role, collaborating with IITA and others, in the successful biological control of the mealybug, rampant in the major cassava growing areas of Africa. It has stimulated an opening of new markets through novel utilization technology in both Colombia and Ecuador.

The Rice Program maintenance research has helped to sustain the major increases in rice production in Latin America. Its new joint venture with the Tropical Pastures Program into rice/pasture systems for the Llanos is an exciting prospect.

Andropogon gayanus and Stylosanthes capitata, developed by the Tropical Pastures Program, is being used commercially on substantial areas of the Colombian Llanos and Brazilian Cerrados, and on a smaller scale in other countries. Grass legume mixtures from the Program offer improved productivity and more stable production systems. Given appropriate policies such systems will inhibit further encroachment into the humid forest areas.

Training offered within commodity programs has done much to reinforce national capacity. The Panel recognizes the effectiveness of the CIAT 'Training Associate' model for headquarters training and notes user satisfaction with both course content and training materials. Similarly users have high praise for CIAT's information service.

CIAT also has solid achievements as a Center. Its perceptions of the future drew it to support upstream research units which have already made significant contributions to the commodity programs. Its philosophy and close interactions with its national system partners have driven the Center to identify productive collaborative mechanisms. Results are seen in the use of steering committees by its regional programs, in the energetic fostering of research networks, in the use of funds for contracting out research to developing country institutions, and in the willingness to support a role for strong national programs in regional research.

Research

The Panel commends CIAT scientists for their commitment and hard work. It commends Center management for fostering an atmosphere in which commitment flourishes. The Panel was impressed with the scientific work pursued by CIAT's Programs and Units. It appreciates the increasing understanding of the physiological basis of resistance and the new ideas on the intensity of challenge, and the nature of durable and partial resistance, flowing to the breeding programs. The Panel was pleased with the widening collaboration with centers of excellence, enlarging the resource base focused on solving problems of key importance to CIAT's clients.

The Panel endorses the shift to research on yield potential and abiotic stresses in the Bean Program and urges it, together with the GRU, to accelerate the processing of the backlog of collected genetic material. The Cassava Program and BRU are commended for the in vitro tissue culture collection. The Panel feels it important to duplicate the collection as soon as possible, it needs constant care and events beyond CIAT's control may threaten this. The Rice Program has made a significant contribution to the rapid development of rice research in national systems. The Panel commends the program for its awareness of this growing capacity and its planned response to move upstream in its

germplasm improvement Some extra attention to experimental design and analysis would be justified by the Program The Tropical Pastures Program faces the dilemma of a reduction in its germplasm collection activities at a time when the rapid expansion of land use in its mandate areas threatens the survival of many species

The Panel recognizes the serious and effective efforts made by the Center in setting up the advanced research support units, the GRU, which holds the world collections of genetic material in beans and cassava and many tropical pasture species, also the BRU and the VRU which represent CIAT's stake in the new biology The Center should take early steps to establish a biosafety committee

These and other common facilities have led to an increase in disciplinary research and have encouraged intra-disciplinary interaction and a synergy among the scientists concerned The Panel commends this development and would urge similar interactions in other disciplines to capture similar benefits Understanding crop behavior across a variety of environments would be a fascinating focus for both physiologists and agronomists and would be of great potential value to CIAT's research

The Seed Unit and the Agroecological Studies Unit are also of great value The latter may form a platform for CIAT to pursue the issue of sustainability at the system level, supplementing the stronger sustainability perspective that the commodity programs plan to bring to their work

National Systems, Training and Information

CIAT has innovated effectively in its interactions with national systems The Panel can only encourage the enthusiastic continuation of the trends which have already emerged It has one reservation Although CIAT acknowledges that many national systems remain weak, its plans for the devolution of some breeding work, and particularly its plans for the devolution of training, assume strength in the national systems

The Panel would encourage a review of these plans after a careful evaluation, with its partners, on the status of national systems, treating the different sub-regions in Latin America and Africa independently to ensure plans are properly adjusted to the circumstances of each

CIAT has restructured its Training and Communications Support Program Although the new structure cannot be fully evaluated, it seems to have clarified lines of responsibility and encouraged forward looking leadership The Panel would ask the Program to look carefully at the role of and demands on the Training Associates as CIAT changes its mix of in-country, regional and headquarters training

Because the goal of CIAT's commodity programs is to improve crop yields and profitability, especially for small farmers, the Center must ensure the delivery of appropriate, problem solving technologies to the user. The Seed Unit, the Farmer Participatory Research Project as well as the on-farm research training, all have this objective. Yet every CIAT investment in this delivery process competes with the scientific work for which the Center was created. The challenge, as now defined at CIAT, is to find a least cost strategy for communicating useful research information to users and getting feedback from them.

The Center wants to make its scientific information widely accessible but has only had partial success. In the light of the budgetary and foreign exchange problems in many developing countries, CIAT needs to look at the pricing policies for all the information it distributes to make sure it reaches the intended audiences.

RECOMMENDATIONS

The Panel recommends

- o that a greater effort should be made in the Bean Program, with the GRU, to increase germplasm screening activities and to speed up the processing of backlogged materials,
- o that CIAT take steps to assemble information on the occurrence and distribution of major constraints to bean production in Africa,
- o that the Rice Program pursue more actively the use of population improvement methodologies like recurrent selection,
- o that, since the yield trials have frequently shown rather poor statistical precision, the Rice Program make a serious effort to explore the reasons,
- o that the GRU should intensify the effort to have experts decide on a manageable core collection consisting of a limited number of accessions that contain an appropriate amount of genetic variability,
- o that, considering the increased activities necessary for the tropical pastures and cassava collections and its great genetic variability, CIAT seek resources for adequate staffing for the Genetic Resources Unit,
- o that CIAT consider duplication of the collection and the maintenance of a collection of sexual cassava seeds, as insurance against the possible loss of the living cassava collection maintained in tissue culture,

- that even greater efforts be made to find special funds and other resources to allow the BRU to expand,
- that an internal biosafety committee be established very quickly,
- that CIAT management give greater attention to clarifying the role and future responsibilities of the AESU,
- increased attention to the needs of program experiments in decisions on commercial cropping by Station Operations,
- integrated strategies across CGIAR Centers in dealing with national programs, particularly in non-mandate specific activities such as management training, on-farm research and networking, and in areas of overlapping mandate such as the maize/bean intercropping so important in Latin America, the Caribbean and Africa,
- being selective in responding to the broad range of demands that have come out of NARDS consultations,
- that, commending CIAT's effective development of the steering committee model and network activities in Africa and Latin America, the Center continue its support for these efforts,
- that in view of CIAT's success in working out a model for collaboration with EMBRAPA in Brazil, in cooperation with IITA, in relation to the Cassava Program for the semi-arid parts of Africa, the Center continue to work toward similar outreach plans with other highly developed national systems,
- that CIAT headquarters reinforce the efforts of its staff in Africa for inter-Center collaboration in training and research,
- that CIAT pool its knowledge and experience with others, including ISNAR, for the training of research managers,
- CIAT contact with other Centers for an integrated approach on sustainability,
- that CIAT systematize its on-going inventory of national program training needs and its schedule for filling them This will require consultation not just with leaders in commodity research programs but with national research leaders,

- o that CIAT explore ways to get wider awareness and greater use of its SINFOC commodity collections and other bibliographic resources,
- o attention to the balance between demand for services from the publication program and resources available for it,
- o careful analysis of policies for pricing publications and other CIAT materials to make sure they accomplish the desired distribution,
- o that top management at CIAT be redefined to incorporate the third level in the hierarchy (the Program Leaders) and that a Management Committee be established, to be chaired by the Director General and to meet regularly and frequently, with an advance agenda and formal minutes recorded,
- o that the incoming Director General, in consultation with the Board of Trustees, evaluate the current organizational structure in the light of the criteria listed by the Panels,
- o the appointment of a Coordinator of Research Support to supervise the work of CIAT's advanced biology units as well as all the other research services in the interim

Appendix 1

LIST OF RECOMMENDATIONS

Chapter 2 CIAT's Legal Status and Governance

We recommend that

- a) the line between the terms of reference of the Executive Committee and the Audit and Operations Review Committee be drawn more sharply

Chapter 3 Organizational Structure and Process

We recommend that

- a) top management at CIAT be redefined to incorporate the third level in the hierarchy (the Program Leaders) and that a Management Committee be established, to be chaired by the Director General and to meet regularly and frequently, with an advance agenda and formal minutes recorded
- b) the incoming Director General, in consultation with the Board of Trustees, evaluate the current structure in the light of the criteria listed in Chapters 6 and 3, respectively, of the External Program and Management Review Reports
- c) CIAT appoint a Coordinator of Research Support to supervise the work of CIAT's advanced biology units as well as all other research services in the interim

Chapter 4 Planning, Budgeting, and Review

We recommend that

- a) the budgeting process be revised to include consultation on all aspects of the budget, including staffing patterns and costs, with those who will have the responsibility for budget implementation, down to the level of each cost center

Chapter 5 Management of Human Resources

We recommend that

- a) management pursue vigorously the assessment of needs in the area of staff training and career development,

design a more systematic set of policies to respond to the identified needs, and commit adequate resources to assure their realization

- b) all first-line supervisors be trained in financial management as is relevant to their assignments as well as in supervisory skills
- c) CIAT seek or help identify funding for and recruit well-qualified Masters and Ph D candidates to conduct their dissertation research under the supervision of CIAT Senior Staff scientists
- d) CIAT design and implement a system of individual performance planning and evaluation

Chapter 6 Financial Management

We recommend that

- a) CIAT pursue a policy of maintaining its working capital fund at a level equal to 30 days of expenditures (approximately three million dollars in 1989)
- b) CIAT join the CGIAR Secretariat and other centers in searching for innovative funding arrangements with individual donor organizations with the objective of improving long-term income stability
- c) the CGIAR Secretariat and the centers jointly agree on a set of system-wide policies which would guide the centers' debt swap operations
- d) CIAT continue to place a high priority on the development of administrative systems and procedures which will be more appropriate to the needs and circumstances of its outposted staff

Appendix 2

A NOTE ON CIAT's CULTURE

A The Traditional View of CIAT's Organizational Culture

An early draft of CIAT's strategic plan, which was more discursive on the subject than the final version, states

There must be that something extra--that quality that makes of CIAT an entity that is much stronger than the sum of its parts would suggest. It is the combination of pride in the institution, the realization that what is at stake is the well-being of millions of people, the pursuit of excellence in all aspects of CIAT life, mutual respect and trust, and the collective desire to ensure success in its mission. This has come to be referred to as the 'CIAT Spirit'. Management is committed to do what is required to maintain or, if possible, even to accelerate the momentum of this spirit.

Management, in conversations with members of the EMR Panel, further defined the CIAT Spirit as involving an emphasis on excellence and relevance, participatory management and extensive communication, delegation that implies trust, responsibility, and fairness, flexibility without a strong hierarchical overlay, and motivation based on respect for the individual. This is not a careless use of words, it is a deep-seated belief. Lest it be merely taken as given, however, management determined to put the CIAT Spirit to the test.

B Managing Culture: The Culture Audit

About a year ago, a staff team was assembled to work with a consultant on the design of a culture audit that would test the beliefs, assumptions, values, and norms of the Center for their validity, strength, and representativeness at various staff levels and work areas. The audit was to provide a baseline against which future remedial actions could be measured. After a series of group exercises and in-depth interviews with members of selected groups in the CIAT community, a stratified and randomly selected sample of personnel was presented with a comprehensive survey instrument that contained a series of positive statements. Participants were asked to state whether or not they agreed with the statement and to indicate the degree of agreement, they were also asked to indicate the degree to which the truth of the statement affected them in their own jobs.

By determining where there is disagreement about the existence of a value that management considers important--most particularly in those cases where the value is not shared but is

shown to be of job-related importance, CIAT management hopes to have the opportunity to take corrective action. A positive impact on the value might be stimulated, for example, by changes in policies or procedures, by improved communication, by training, etc.

At the time this report was prepared, initial findings were available but not fully analyzed. Nonetheless, a few are quoted here to give the reader a flavor of the exercise.

Listed below is a selection of statements that appear to be strongly endorsed by employees throughout the Center, and that also appear to be of importance to all respondents in carrying out their work.

- We accomplish our objectives
- Excellence in performance is the norm
- Relations between employees are cordial
- CIAT people strive to get ahead
- Relations between bosses and subordinates are good
- Frequent internal consultations facilitate our work
- Everyone knows what he/she is supposed to do
- Resources in the work place are sufficient to get the job done
- We have good people

Following is a list of statements on which there was relatively less agreement but that deal with issues that are considered to be of high importance in discharging the duties of the respondents.

- CIAT provides decisive support for employee training
- Up-and-down communication is easy and timely
- Promotions are based on performance
- There are no marked differences between levels of employees
- Employees stay informed of the progress achieved by CIAT

An analysis of the initial results available shows that a large majority of the values and attitudes are shared across the institution, albeit different values/attributes/norms are assigned different degrees of importance by the various subgroups. Included in the shared values are most of the statements espoused as basic values of CIAT in the Center's strategic plan.

While there is strong evidence of consensus on the CIAT culture, the study has confirmed the existence of clearly identifiable subcultures defined by levels of employees (e.g., principal staff, professional support staff, field laborers) and type of work engaged in (i.e., research, research support, administrative services). This opens up the opportunity for CIAT to devise differentiated strategies in organizational development programs.

Many of the findings resulting from CIAT's culture audit were corroborated by the Panel's own observations during its stay at the Center, thus lending the study a certain amount of face validity. While the findings are still preliminary, the availability of even this limited information gave us confidence in our perceptions, since it provided the basis for an objective measure of culture in a complex institution.

We commend the Center for undertaking this exercise and for its determination to continue to take a proactive stance in dealing with the culture of the institution. We hope that, when the full analysis is complete, CIAT will share its methodology with other CGIAR centers. In due course, it will be particularly instructive to learn what measures are effective in changing the culture to support management's objectives.

Appendix 3

DRAFT TERMS OF REFERENCE FOR EXTERNAL MANAGEMENT REVIEW PANELS

Background

A system of periodic external management reviews (EMRs) of international agricultural research centers was initiated by the CGIAR in 1982 following the recommendations of the Second Review of the CGIAR. The Group assigned the responsibility for organizing the EMRs to its secretariat. All external reviews of CGIAR centers conducted since 1982 have had a management review component complementing the external program review (EPR) that is conducted by or on behalf of the Technical Advisory Committee (TAC).

In 1988 TAC and the CGIAR Secretariat conducted a study of the CGIAR's review processes. The recommendations of this study were discussed and endorsed by the CGIAR at its annual meeting in October 1988. This study provides the policy and principle framework within which different types of reviews are to be conducted within the CGIAR. Accordingly, external reviews of the centers will continue to have an EPR and an EMR component that are concurrently conducted about every five years by two small panels. The panels are expected to work closely with each other and produce separate but well integrated reports.

The CGIAR Secretariat commissions an external panel to conduct the EMR and provides backstopping to the panel as necessary. The secretariat forwards the report of the panel first to TAC for it to consider along with the EPR and next to the CGIAR for discussion and decision. The center, TAC or the CGIAR may endorse or disagree with all or some of the recommendations of the EMR panel.

Purpose of the EMRs

The overall purpose of the EMRs is to assess the center's present and potential future management effectiveness. Here management effectiveness refers broadly to the center's success in performing essential management functions such as setting goals, selecting strategies, providing leadership, acquiring and managing resources, planning and implementing activities, etc. The EMR is also concerned with management efficiency, i.e., whether the center's management practices encourage efficient utilization of human, financial, physical and information resources. Thus, the main focus of the EMRs is on management factors that enhance or limit the center's overall performance. The specific objectives of the EMRs are:

- (1) to provide the Group with a broad gauged assessment of how effectively the center is being managed and on actions that could improve the center s performance in the future
- (2) to provide the board of trustees and the management of the center advice on improving management effectiveness and efficiency both formally through the report and on an informal basis
- (3) to identify particularly effective management practices at one center that may have broader application in the system
- (4) to identify practices of donors TAC and the CGIAR Secretariat that have particularly positive or negative influences on the center s efficiency and where appropriate to suggest constructive change

Conduct of the EMR

The mandate of the EMR panel is to carry out a frank objective and independent assessment of the center s management effectiveness in a manner to accomplish the purpose and objectives of the EMRs noted above. The panel should collaborate closely with the EPR panel throughout its work. It should carry out its work in an atmosphere of open dialogue and fruitful exchange with the center board management and staff.

The panel s assessment should cover the broad topics outlined below and the appended list of questions.

(1) Center Guidance

Overall effectiveness of the Board of Trustees in governing the center

Conduciveness to performance of the center s guiding values and culture

Effectiveness of leadership throughout the center

Appropriateness of the center s strategic planning process

(2) Management of Resources

Effectiveness of the center s human resource management systems policies and procedures

Effectiveness of financial management and control systems policies and procedures

Appropriateness of administrative policies and procedures

The center's success in obtaining and managing information necessary for decision-making

The center's efficiency in utilizing human financial physical and information resources

(3) Management of Programs

Appropriateness of the center's operational planning processes

Appropriateness of the center's internal control and review processes

Appropriateness of the center's organizational structure and internal communication mechanisms

Appropriateness of the processes the center uses for managing tasks in program units

(4) Management of Relations with the Center's Environment

The center's skills in managing its relations with

-- its clients

-- its host country

-- other research institutions in developed and developing countries (including other CGIAR centers) and

-- donors the CGIAR and TAC

(5) Management Skills and Teamwork

Management skills of staff in management and supervisory positions

Success of the center in team-building and effective teamwork

The panel is not expected to address each topic listed above or in the appended list of questions in equal depth. The panel is expected to focus its analysis on factors it regards important in improving the center's performance. This would normally follow a comprehensive diagnostic study of the topics listed plus others the panel regards as potentially significant.

The EMR Report

The panel is expected to present its analysis conclusions and recommendations in a report addressed to the Executive Secretary of the CGIAR. The report should be short (less than 50 single spaced pages) and written in plain language. Supporting material can be presented in annexes or in an accompanying volume.

Portions of the report addressing research and program management issues should be prepared jointly with the EPR panel. This chapter or chapters should appear in both reports essentially in identical form.

The EMR report should be completed at the center during the main phase of the review and formally presented to the center's board of trustees before the panel's departure from the center.

In addition to the report it forwards to the CGIAR, the panel may write one or more confidential reports or letters covering sensitive and potentially damaging matters. These would normally be addressed to the board chairman and/or the center director. If such confidential reports are prepared, the CGIAR and TAC chairmen should be informed of their content.

Attachment (List of Questions)

CGIAR Secretariat
September 1989

Appendix 3 1

LIST OF QUESTIONS

External Management Reviews

A Overall Assessment

- 1 Do management systems policies and practices at the center lead to effective program performance? Do they foster innovation and creativity?
- 2 To what extent are efficiency and accountability reinforced throughout the center?
- 3 How satisfied are staff at all levels with their jobs? How are morale trust communication and teamwork perceived among the staff?
- 4 What is the attitude of the center board and management towards organizational development and change? Does the center have an effective internal management review mechanisms?
- 5 Has the center responded adequately to the recommendations of the last EMR?

B Center Guidance

a Guiding Values and Culture

- 1 What principal guiding values/philosophies appear to shape the actions of the board management and staff? Are they conducive to high performance?
- 2 What are the main features of the center s current organizational culture? Do aspects of culture serve as barriers to performance?
- 3 How well do the center s strategy structure and management practices fit its organizational culture?

b Legal Status and Governance

- 1 How effective is the board in policy and strategy formulation?
- 2 How effective is the board in policy and strategy oversight?
- 3 How effective is the board in managing its business (selecting and developing members board and committee leadership, committee structure board procedures managing meetings teamwork etc)?
- 4 Is the relationship between the board and the management healthy?
- 5 Is the center s legal status appropriate for carrying out its mission effectively?

c Leadership and Senior Management

- 1 How effectively has the center been led by the director general and his top management team since the last EMR?
- 2 How well do senior managers work as a team?
- 3 How effectively do senior managers balance demands on their time from external and internal stakeholders?

d Strategic Planning

- 1 How effective is the strategic planning process used by the center? What lessons can be drawn for other centers conducting strategic planning?
- 2 Has the center effectively addressed the management implications of the center's strategy?

C Management of Resources

a Human Resources

- 1 Has the center been able to attract and retain international and local staff of the highest calibre?
- 2 What policies and practices govern the length of tenure of senior staff? Is the turnover rate sufficient for ensuring program continuity and undertaking new initiatives?
- 3 Is there over or understaffing for any category of staff? What measures should be taken to prevent over or understaffing?
- 4 Are compensation policies (classification grading salaries and benefits) for international and local staff including those stationed outside the headquarters appropriate? Are they effectively enforced?
- 5 Are personnel policies (recruitment and orientation, performance planning and assessment spouse employment retirement etc) for international and local staff including those stationed outside the headquarters appropriate? Are they effectively enforced?
- 6 Are career development policies (management development professional training study leaves and sabbaticals secondments) for international and local staff including those stationed outside the headquarters appropriate?
- 7 Does the center actively promote recruitment retention and career development of women? Are there barriers to women's advancement in the center?

8 How effectively is the human resource management function managed? Are the staffing and organization of the human resource units appropriate?

b Finance

1 How successful has the center been in securing resources to finance its activities? How stable is the center's funding base? Does the center have a fundraising strategy? How effectively is the fundraising process managed?

2 Have special project and restricted core funding led to fragmentation of activities? How limiting are the conditions attached to restricted contributions?

3 How effective are the mechanisms and processes used for financial management of headquarters and field activities including financial planning accounting budgeting internal and external auditing financial analysis and reporting cash and currency management and control?

4 How strongly is financial management linked with program management? How much financial responsibility do the individual scientists have? Does the system encourage individuals to spend center funds prudently?

5 How well is the financial management function managed? Are the staffing and organization appropriate?

c Administration

1 How successful has the center been in establishing an administrative infrastructure that meets the needs of staff in an efficient and effective manner? Are senior staff excessively burdened by administrative procedures?

2 How cost effective are the systems and policies used for managing

- procurement operations (foreign and local purchasing receiving stores)
- general services (security housing and dormitories food services, transport travel services)
- construction and property management and maintenance
- insurance?

3 How well are the administrative services managed? Are the staffing and organization appropriate?

d Information

- 1 How successful is the center in acquiring generating and managing the information it needs for decision-making communication and integration of activities?
- 2 How effectively are information services and technology (computing telecommunications office automation records management archives library and documentation) managed?
- 3 Are information services and technology plans integrated with the center s strategic plan?
- 4 How effective are the center s management and governance information systems?

D Management of Programs

a Organizational Structure

- 1 What pattern of internal organizational structure exists on paper? What is the perceived pattern? What are the reporting relationships? What coordination mechanisms are used? What are the advantages and the disadvantages of the present structural arrangement?
- 2 How are the regional programs and outreach staff linked with the headquarters? What mechanisms are used for coordination across programs? Are these effective? Does the current structure enable the center to have an effective dialogue with NARS?
- 3 What alternative structures could serve the center well in the future in light of the center s program strategy its organizational culture and the requirements of the new CGIAR resource allocation system?

b Operational Planning

- 1 How effective is the center s short- and medium-term planning process? How well are operational plans linked with the center s strategic plan?
- 2 Are operational plans linked effectively with the center s resource management plans (for human financial physical and information resources)?

c Internal Reviews

- 1 What processes does the center use to monitor progress in the implementation of its strategic and operational plans? Are these cost effective?

d Management of Program Activities

- 1 How effectively are individual program and research support units managed? (The panel is not expected to conduct a detailed management audit of each organizational unit other than the resource management units covered above. It should focus its efforts towards identifying management strengths and weaknesses shared by many program or support units.)
- 2 How effectively are outreach activities managed? Are outreach activities coordinated well with the activities at the headquarters?
- 3 To what extent is the center contracting research to outside institutions? How effective are these arrangements?

E Relationships with the External Environment

- 1 How good is the fit between the center as an organization and its key external stakeholders? How successful has the center been in managing its relationships with
 - its clients in developing countries
 - institutions in the host country of its headquarters
 - other research institutions in developed and developing countries (including other CGIAR centers) and
 - donors the CGIAR and TAC?
- 2 How well does the center manage its relations with other stakeholders (such as the media and the general public)? Are the resources devoted to public relations appropriate?
- 3 Does the center review its relationships with the external stakeholders periodically? To what extent does the center's strategic planning encompass relations with stakeholders?
- 4 Are there measures the CGIAR community (donors, other centers, TAC, the CGIAR Secretariat) should take to minimize adverse effects or constraints they impose on the center?
- 5 How effectively are the center's communication, publication and distribution activities managed? Are these activities carried out in a cost-effective manner?

F Management Skills and Teamwork

1 How successful are managers and supervisors in managing people and tasks under the constraints the center operates within? In particular how skillful are managers and supervisors in

- goal setting and work planning
- selecting and developing staff
- organizing and coordinating
- directing/delegating
- supporting the work of subordinates and problem solving
- reviewing and providing feedback
- rewarding and motivating
- communicating effectively?

2 Do staff work effectively in teams? Is there a widely shared spirit of teamwork in interpersonal and intergroup relations? Do the structure and operating procedures of work groups facilitate cooperation and teamwork?

CGIAR Secretariat
June 1989

Appendix 4

CONDUCT OF THE EXTERNAL MANAGEMENT REVIEW

The Panel members first met in Washington, D C , for two days in June to consult with CGIAR Secretariat staff on the issues specific to the CIAT review and to receive the report of a consultant who had attended the April meeting of the CIAT Board. Immediately following this, they traveled to Palmira, where they spent six days attending presentations of CIAT program staff and conducting initial interviews with senior members of the administration.

While at Palmira, Dr Vyas visited the Pasquenda on-farm project with members of the External Program Review Panel and subsequently accompanied part of that group to meet with CIAT outreach scientists and staff of EMBRAPA in Brasilia and Goiania. Earlier he had visited with the CIAT scientists working in the outreach program in Thailand. Ms Joshi traveled on a similar mission with EPR members to Addis Ababa, Ethiopia, Arusha, Tanzania, and Kigali, Rwanda, for ten days in July. Vyas and Joshi also interviewed several members of the Board and donor representatives.

The Panel members returned to Palmira on September 11, attended a series of presentations by the CIAT administrative staff, conducted a considerable number of intensive individual and group interviews, visited the Carimagua station, reviewed issues and recommendations with senior management, prepared their report, and presented their findings to the Board of Trustees on September 29.

Appendix 5

BIOGRAPHIES OF PANEL MEMBERS

VIJAY SHANKAR VYAS is currently Director of the Institute of Development Studies in Jaipur, India. Previously, he held the posts of Senior Adviser in Agriculture and Rural Development, The World Bank, IDRC Senior Research Fellow and Visiting Scholar at Boston University, and--from 1978 to 1982--Director of the Indian Institute of Management (IIMI) in Ahmedabad. Subsequent to receiving his Ph D in Economics from the University of Bombay in 1958, Dr Vyas served on the faculties of Bombay University, Sardar Patel University, and IIMI. Over the years, he has chaired study teams fielded by the Asian Development Bank, The World Bank, FAO, and IFAD, has consulted with other international organizations, and has served as a member of the Agricultural Prices Commission of the Government of India, and as Vice-Chairman of the State Planning Board of Gujarat State. For a number of years, Dr Vyas was a member of the Board of the International Food Policy Research Institute. He has written extensively on various aspects of rural development and agricultural policy and has been honored by the academic community in India and abroad for his contributions.

KENNETH HOADLEY is Dean of the Arthur D Little Management Education Institute, an accredited, degree-granting institution of higher education focusing on management for international economic development, which is owned and operated by Arthur D Little, Inc in Cambridge, Massachusetts (USA). In addition to his duties as Dean, Dr Hoadley has undertaken numerous consulting assignments in the area of international management education and development in various countries throughout the world. Prior to joining Arthur D Little, Inc in 1986, Dr Hoadley was Associate Academic Director at INCAE in Costa Rica, where he directed the Agribusiness and Export Management Development teaching and research programs. Dr Hoadley has also held a full-time teaching position at IPADE in Mexico City, where he was head of the area of agribusiness management. Dr Hoadley received both the M B A and D B A degrees at the Harvard University Graduate School of Business Administration, and has lived for extended periods in Mexico, Nicaragua, Costa Rica, and Colombia.

JOAN H JOSHI has spent the past several years in promoting public education on development and other international issues through work in both the formal and non-formal education systems. A citizen of the U S A, Ms Joshi has served as a management consultant for the CGIAR and several of the international agricultural research centers as well as Director of Administration at ICARDA in Syria. She was a member of the panel that conducted

the first External Management Review of IITA in 1983 and has since participated in similar reviews of CIMMYT and the International Irrigation Management Institute in Sri Lanka. Prior to 1981, she spent 16 years in various positions at the Institute of International Education in New York, the last five as Vice-President for Educational Services, heading a department that provided support to many of the IARCs. Ms. Joshi has an A.B. from Cornell University in political science and has spent a semester at the London School of Economics. She has lived for extensive periods in the Federal Republic of Germany and in Syria and has traveled widely in many parts of the developing world on professional assignments.