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Series 12E - 1



# CIAT'S STRATEGY FOR OUTREACH SERVICES



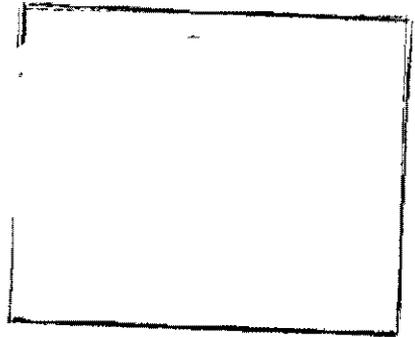
March, 1979



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**CIAT'S STRATEGY  
FOR OUTREACH SERVICES**



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# CIAT'S STRATEGY FOR OUTREACH SERVICES

The question most commonly asked by CIAT's supporters and collaborators is "What is CIAT doing to ensure that the technology it is developing will be put to productive use?". Indeed this is the question we constantly ask ourselves, since our stated goal of increased production and productivity cannot be achieved unless the technology is transferred through its various stages in order to be utilized by farmers. However, parallel to this question is the frequently expressed concern that, in their rush and anxiety to see the fruits of their labor applied, the International Agricultural Research Centers will over-extend themselves, over-reaching their administrative capacity, diluting their research efforts and moving into areas in which they have less competence and can perform less effectively. Thus, there exists the dual concern that the International Centers will do too little and that they will do too much in the area of technology transfer, commonly referred to as "outreach". This underscores the need for CIAT to define what is its strategy as a basis for deciding what it will do, or, probably even more important, what it will not do in this area. It is particularly important to do so at this time when the Center has reached the age at which the growing amount of exciting new technology being generated by its programs needs to be effectively validated in on-farm trials, adapted by national institutions to local conditions, and transferred to farmers.

The purpose of this paper is to inform CIAT's Board of Trustees, client countries, and the Consultative Group for International Agricultural Research (CGIAR), of the basic principles embodied in CIAT's philosophy on this subject, the strategies for achieving its technology transfer objectives, and plans for executing the strategy during the next five years (Tactics).

A clear understanding of our terminology is essential. While we consider the terms "outreach services" and "technology transfer" practically interchangeable for the discussion that follows, we have not used the latter term in the title specifically because it is often understood in the narrow sense of "extension" to farmers. Actually, the technology transfer activities of an International Center are chiefly those related to the transfer of its technology to local institutions, along with such activities as relate to strengthening these institutions to better perform their tasks of local adaptive research and extension in the areas of competence of the Center. The word "services" has been added to make it clear that the Center is reaching out to collaborating institutions, with the attitude of service to the region in the spirit of horizontal transfer.

# PHILOSOPHY

## Overall Objectives

The outreach services philosophy of CIAT must be viewed within the context of the overall objectives of the Center which are summarized as follows:

**To generate and deliver, in collaboration with national institutions, improved technology which will contribute to increased production, productivity and quality of specific basic food commodities in the tropics--principally countries of Latin America and the Caribbean--thereby enabling producers and consumers, especially those with limited resources, to increase their purchasing power and improve their nutrition.**

## The Principle of Complementarity and Cooperation

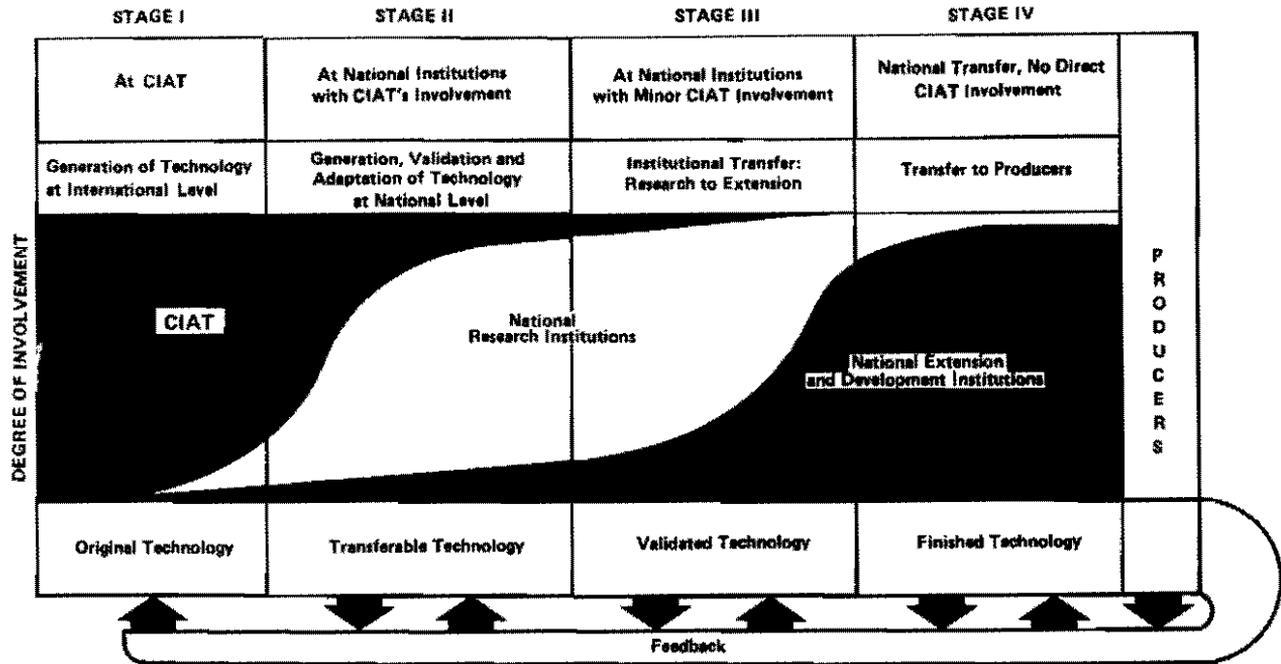
It is essential that the work of an International Center be seen as but one part in the continuum of activities which begins with new scientific discoveries and ends with the eventual application of science-based technology by the farmer to improve his productivity and welfare. This continuum with reference to the commodities dealt with by CIAT is schematically illustrated in Figure 1. Successful accomplishment of the end result involves the cooperation of various national, regional and international agencies, of which an International Center is but one. Such a Center can be effective only to the extent that it cooperates as a partner with these various institutions and sees its role as complementary to the activities of other institutions rather than competitive or substitutionary.

## National Programs

Of the various institutions participating in agricultural development none is more important than the national institutions involved in agricultural research and development. It is only through strong national programs that the technology generated by CIAT can be evaluated under varied local conditions, modified as necessary and eventually transferred to the farmers along with the essential services and inputs required to make it useful for the producer. It is a keystone of CIAT's philosophy that cordial and productive collaboration be maintained with such institutions, and that, in the area of CIAT's competence and within the limits of its resources, every effort be made to strengthen the capacity of these institutions to carry out these functions as full and effective partners.

FIGURE 1

*Degree of involvement of CIAT and national institutions in the technology generation/utilization process for commodities in CIAT's programs*



## **Regional and International Institutions**

CIAT's partnership with national programs is enhanced and facilitated by cooperation with various regional and international organizations. A brief description of these relationships is given in Appendix A.

## **The Principle of Comparative Advantage**

An important corollary of the principle of complementarity, and an essential consideration in avoiding over-reaching CIAT's capacity or unduly diluting its activities, is to question every activity and new proposal from the viewpoint of comparative advantage to make the most useful contribution. CIAT only engages in those activities within its mandate in which it has a unique capability to do the job better than some other institution.

## **The Need for Regional Adaptation and On-farm Validation**

An important component of CIAT's outreach services philosophy is the realization that the Center cannot provide finished technology for the many ecological zones, the varied socio-economic conditions and the different quality preferences within its area of responsibility. There is no assurance that a given technological package is good just because it performs well on a CIAT experiment station. Before the task of technology generation is complete, new varieties and practices must be evaluated on a regional basis, modified where necessary to meet local requirements and tested under the real farming conditions representing the largest number of producers and ecosystems possible. Such activities cannot be carried out by CIAT alone. When they are conducted on the experiment stations of local institutions or on individual farms, they must be done by, or in cooperation with, the appropriate local organization. Such regional testing and on-farm validation not only plays an important role in the technology transfer process, but serves as a vital source of information feeding back into CIAT's commodity programs to influence technology design.

## **STRATEGY**

### **Operational Objectives**

Within the framework of overall objectives and general philosophy described above, it is essential to delineate more specific operational objectives against which activities will be evaluated. These are:

1. To develop improved technology for selected commodities which has the potential to greatly increase the production and income of a large segment of farmers;
2. To transfer this technology to local institutions;
3. To help strengthen the capacity of local institutions to adapt, evaluate, validate and transfer this technology so that it will be utilized to the benefit of producers and consumers.

### **Inter-Relationship between Technology Generation and Technology Transfer**

CIAT's strategy for outreach services is characterized by a description of the components of its technology transfer and the criteria to be utilized in selecting various activities as described below. These must be understood in the context of their relationship to the technology generation functions. While this paper is directed to the technology transfer functions there is obviously no clear-cut line between these and technology generation. Many research activities, such as international variety and yield nurseries, or germplasm collection and maintenance, are not dealt with here but do serve important transfer functions. Conversely, some of the outreach services described here, such as research training to strengthen national research capabilities and the outposting of regional services and bilateral contract staff, obviously contribute significantly to the technology generation process. The development of appropriate technology depends on a continuous assessment of the needs in the real problem context; consequently, the research and outreach functions are intimately interrelated. However, for purposes of brevity, only those international cooperation activities in which the technology transfer function is dominant will be described in the remainder of this paper.

### **Components of CIAT's Technology Transfer**

The largest component of CIAT's outreach services is training, the major function of which is strengthening the capacity of national institutions to carry out, cooperatively as well as independently, their key technology adaptation and transfer functions. Training at CIAT is normally at the post-graduate level. While training is coordinated through the Training Office, its execution is primarily the responsibility of the various commodity programs. Senior staff devote an average of approximately 15 percent of their time to training in close association with their research endeavors. A brief description of the various types of training activities carried out at CIAT is given in Appendix B.

## **Conferences, Seminars and Workshops**

These are important for appropriate technology generation in that they provide a forum for CIAT scientists and administrators to learn of the nature of problems to solve and of priorities and felt needs of national programs. They also serve a very important technology transfer function, both from CIAT programs to national programs and between national programs, by permitting national program personnel to become familiar with the new technology available as well as the development of testing networks for the evaluation and feedback process of this technology. A description of the types of such events is summarized in Appendix C.

## **Consultation**

Most CIAT program scientists travel extensively as part of their research activities. The discussions with various local research scientists during such travel provides an important consultation service which can be useful in the identification and prioritization of research problems and organization of research at CIAT, as well as in contributing to the strengthening of the local research and extension capacity. Since all these scientists have important research and training responsibilities, such consultation is limited to brief visits, as opposed to longer-term, contracted consultation services frequently requested for development, execution and appraisal of projects.

## **Communication Support**

The function of this unit is to identify the relevant audiences in the technology transfer chain (e.g., policy-makers, planners, researchers, production advisors, producers, etc.) and to provide these audiences with tailor-made information about CIAT-generated production technologies. In utilizing its information potential, CIAT avails itself of the entire range of available media. This includes print (newsletters, pamphlets, monographs, publication of conference proceedings, field and production manuals), slide sets (informational audiovisuals and audiotutorial sets for teaching purposes), films, exhibits, and displays. More details regarding information material produced by this unit are given in Appendix D.

## **Documentation Services**

This activity combines the Library and Documentation Center. It emphasizes a service approach which focuses on the timely delivery of needed information to the user. The Documentation Center covers four basic areas: cassava, beans, tropical pastures and forages, and agricultural economics and development in Latin

America. The latter is a joint activity with the Interamerican Institute for Agricultural Sciences and is being phased out at CIAT.

Descriptions of the services provided by this unit are given in Appendix E.

### **Outposted Staff**

Outposted staff are frequently considered synonymous with "outreach" activities. While our previous discussion indicates that CIAT's outreach services encompass a much broader area of activities, outposted staff represent a very important component of such service and a growing proportion of International Centers' budgets. Consequently, special attention will be given to the role they play in CIAT's outreach services strategy. The Center distinguishes between two categories of outposted staff.

- (1) **Regional Services.** These staff are posted to strategic locations in order to serve regions in which a particular commodity is important. Their major role is to assist in the inter-institutional transfer of CIAT-generated technology and to provide feedback into the research process, making them essential links in the technology generation/technology transfer continuum. Their activities relate chiefly to commodity international testing networks and collaboration with national programs in the technology generation, validation and transfer processes. In close collaboration with national programs in their respective regions they conduct or encourage research on problems of special importance to that area. They expedite and help organize international nurseries and other collaborative trials in the region. They also assist in the selection of participants for training at CIAT and in the development of in-country training programs. While representing a key component in CIAT's outreach services strategy, they also fulfill an important "inreach" function by acting as a channel for essential feedback to their respective commodity programs.
  
- (2) **Bilateral Contract.** These staff are appointed as local components of national agricultural research teams at the request of individual countries. They serve on a temporary (usually three to five years) basis, and their purpose is to strengthen the institution they are assigned to in their field of activity while national staff complete their training to fill such positions. Bilateral contract staff will normally be working chiefly with one of the commodities for which the Center has responsibilities, will have close ties with the respective program in CIAT, and will participate in the annual review of that program. Nevertheless,

their responsibilities will not extend beyond the boundaries of the country to which they are assigned, and they will be expected to work within the administrative structure of the national program.

*Funding Principles for Outposted Staff.* As a general principle regional services staff should be funded from the core budget of the Center and bilateral contract staff should be special project-funded. Most frequently, special project funds to cover the costs of bilateral contract staff will be part of a multilateral agency's or bilateral donor's technical assistance contribution to a particular country. CIAT regional services staff are currently funded entirely from special project contributions. However, all those which are required on a long-term basis should eventually be included in the core budget in order to provide continuity and more accurately reflect their integral role in the total international responsibilities of the Center. Once these regional service staff have been approved as part of the core budget, special contributions for such staff should be considered as "restricted core" and donors having a special interest in a given region should be encouraged to consider this funding in addition to whatever may be their contribution to the "unrestricted core" budget of the Center. In the rare instances when a particular donor can provide funds for certain regional services but, because of its internal fiscal restraint, can not consider them part of "core" contributions, such financing can be considered as special project funding, with the understanding that these costs will be incorporated into the core budget, if and when that particular donor support expires.

*Principles of Locating Outposted Regional Services Staff.* Selection of the country in which such staff are stationed will be based on the strategic location in relation to the region served and will depend on the host country's willingness to provide such facilities as are required to facilitate ease of international movement and attract capable staff. Whenever possible such staff should be physically or administratively attached to an international agency with appropriate responsibilities in that region.

### **Criteria for Activities**

For each set of outreach services activities it is important to consider the criteria which will be used in determining whether or not to engage in it, and what priority it has in relation to other desirable activities. CIAT will not have the resources to do everything that it is asked to or would like to do. It is therefore important to know how a decision will be made to say "yes" or "no" to a particular request or suggestion. The important criteria which will be taken into account in making such

decisions are described below. While it would be desirable to quantify these in such a manner that a computer could consider the various facts and give a clear "yes" or "no" in each instance, in reality these criteria will, for the foreseeable future, remain highly subjective, and sometimes even contradictory, so that a great deal of personal judgment needs to be exercised. A description of the criteria to help make such judgmental decisions more systematic follows.

## **Training**

*Proportion of Resources Devoted to Training.* This refers both to the financial resources available as well as the time of individual program scientists which can be dedicated to this important function. There is, unfortunately, no magic formula which indicates what proportion of the Center resources should be dedicated to this task. Nevertheless, the following factors should be considered.

- (1) The stage of the technology generation process in a particular program, both in relation to the amount of information available to be used in training, as well as the need for adequately trained personnel at various stages in the technology adaptation and transfer process.
- (2) In the case of individualized research training, the number of trainees already assigned to an individual scientist as a function of the supervisory capacity of that scientist.
- (3) The trade-off between the time of a scientist invested and the contribution the individual training participant will make to the on-going re-search program and/or the future collaborative research effort that can be expected to result from such training.

Overall for the present stage of CIAT's development, the rough formula of 15 to 20 percent of the Center's budget and 2 to 3 man-years of training participants per senior scientific staff member seems to be the appropriate order of magnitude.

## *Funding of Training Scholarships*

- (1) **Source of Funds.** In 1968 all training participants were funded from the CIAT core budget. The increase of training opportunities through special project and other external funding developed gradually until by 1975, 60 percent of the candidates were funded from sources out-

side the core budget. Currently, about one-half of the training budget and one-third of the number of trainees are core-funded. It is expected that this ratio of core vs. external funding will continue into the future. Some special interest training (e.g. seed production technology) will continue to be funded principally as part of special projects.

- (2) **Scholarship Recipients.** Core-budgeted training funds will normally be utilized only for participants from lesser-developed countries. In the case of research trainees from developed countries in which the research to be conducted by the scholar is considered an important contribution to CIAT's research activities a portion of the costs may, in special cases, be covered from CIAT's resources. However, such trainees will not be fully funded by CIAT.

*Thesis vs. In-service Research Training.* Experience shows that non-degree training at CIAT has limitations in that it often does not result in commensurate professional and leadership opportunities being offered to the ex-trainee upon returning to his home country. Degree-related training has a definite advantage in terms of advancement opportunities. Hence, the Center will strive to arrange increased opportunities for thesis research in conjunction with cooperating universities. On the other hand candidates for graduate thesis work are scarce and quite a few countries in Latin America require a type of quick practical training to allow young graduates to perform efficiently in areas of practical agronomic research, validation of technology and technology transfer. Restricted budgetary and manpower resources do not yet allow these countries to assign their personnel for training during long periods of time. Therefore, in-service training and short-term production courses are expected to continue to be in demand for some time.

*Structured Courses vs. In-service Training.* Individualized in-service (6 to 12 months) training, either degree or non-degree related, will be utilized in all cases where a commodity/discipline research approach is required (e.g., bean pathology). Structured courses, on the other hand, are organized on a commodity basis to provide multidisciplinary training experiences to groups of 20 to 40 professionals.

An adequate balance between individual in-service training, medium-term (6 months) training courses and short (1 month) courses will be continuously sought. While no one set criterion is universally applicable, the point of balance shifts with the evolution of each commodity program and the demand from client countries. In the latter half of the decade of the 80s, it is anticipated that there will be a gradual evolution to higher level, research-oriented, longer-term training.

## *Trainee Selection*

- (1) **Qualification level.** The following criteria have been established for selection.
  - (a) CIAT training participants must normally be college graduates;
  - (b) Since a primary purpose of training is to strengthen national organizations to carry on validation research on commodities in CIAT's mandate, participants must be actively working in a national research (or, in certain cases, extension) organization that certifies the utilization of the trained professional. This criterion gives the employer the right to pre-select the candidates while CIAT staff select the most capable individuals available.
  - (c) Based on assessments of manpower needs of national programs, selection is oriented to form research teams for each commodity in CIAT's mandate, or, alternatively, to train professionals that are to bridge the gap between research and extension on the national level.
- (2) **Countries of Origin.** As the target audience is the developing countries of the tropics, 90 percent of the past training participants have originated from these countries. Presently, 80 percent are from tropical Latin America. Participants from Asia and Africa are expected to increase to 20 percent of the total in the next five years as outreach services are expanding to these areas. The priority countries in each region vary from program to program at CIAT and are expected to shift over time. Training opportunities are offered in accord with such priorities (see page 25) but are not limited to those countries. CIAT presents an attitude of cooperation, and is ready to respond to felt needs by any national program that wishes to increase production of commodities that are in the Center's mandate.

*In-country Training.* CIAT has definite limitations as to the size of its training program. Certain types of training, especially for extension personnel, can best be conducted in the countries. Thus, on a limited basis, CIAT uses its comparative advantage in providing training in methodology and new technology to assist country programs in conducting courses to further strengthen their technology validation and transfer capabilities in the area of CIAT's commodities.

## **Regional Services Staff**

Due to budget constraints and limitations of administrative capacity, the number of regional services staff of CIAT should remain modest, probably not to exceed 15 to 20 for the entire Center. Consequently, for each commodity program, only program staff for areas that are most strategically important for successfully attaining that program's objectives should be budgeted in this category. To determine these areas, the following criteria should be carefully weighed:

- (a) Percentage of the world area devoted to that commodity that is located in the region.
- (b) The potential for expansion of production (area and yields) of that commodity in the region.
- (c) The importance of the commodity in the diets of the people of that region, especially those with limited resources.
- (d) The importance of that commodity as a component of the farming systems of producers in that region, especially those with limited resources.
- (e) The expressed interest of regional and national agricultural leaders for the development of that commodity and for stationing CIAT staff in the region.
- (f) The representativeness of the ecosystem in terms of other production areas, or as a critical site for research essential to adaptation of CIAT-generated technology to that or similar regions.
- (g) A comparative advantage for CIAT's involvement over that of other organizations.
- (h) The viability of national programs in the region in relation to their ability to utilize such services and benefit the farmers.
- (i) The existence of formal or informal organizations through which the regional staff may operate.

## **Bilateral Contract Staff**

Since these contracts are based on the availability of special project funds, they will generally not compete with other activities for CIAT financial resources. Nevertheless, they will represent a considerable cost in administrative and program staff time and, therefore, must be strictly contained and should not be engaged in merely because there is a request and a potential donor. As a rule, highest priority should be given to those bilateral activities which meet the largest number of the following criteria:

- (a) The particular commodity is important in the diets of the people of that country, especially those in the low-income sector.
- (b) The commodity is important in the production systems of farmers of that country, especially farmers with limited resources.
- (c) There is a potential for significant and rapid production increase of the particular commodity in that country.
- (d) There is an expression of political will and commitment to conduct an active program of technology validation, adoption and transfer for the particular commodity, as well as the establishment of appropriate policies related to infrastructure, input availability, remunerative markets, and credit. Preferably, the commodity in question should have been given high priority for development in the country, and a vertically integrated national program to promote its production should be well-planned.
- (e) The national program and donor agencies are committed to the funding and posting of the CIAT staff members for a sufficiently long period of time and to providing such financial and manpower support as are required for them to make a significant contribution.
- (f) The host country is willing to designate personnel for further training and/or counterpart functions so as to facilitate the continuity of these activities following the expiration of the CIAT staff members' contracts.
- (g) The host country is willing to provide the necessary exemptions

and perquisites commensurate with international technical assistance staff.

In choosing between the various bilateral contract opportunities CIAT will normally decline such involvement under the following circumstances.

- (a) The task is overall institution building rather than development of a commodity for which CIAT is responsible.
- (b) The task is chiefly related to extension rather than research or research/extension linkage.
- (c) The research institution is isolated from the extension organization and/or has little or no work in farmers' fields and there appears to be no desire to change this situation.
- (d) The administrative or salary structure of the host institution is such that it is unlikely to be able to retain highly qualified staff trained under the program.

## **TACTICS (1979-1983)**

### **General Trend**

CIAT's commodity programs are still quite young and are just now arriving at their full, planned staffing levels. Today, the programs are building on the foundations of germplasm assessments and methodology development laid in the early years, and are functioning as well-integrated interdisciplinary teams working towards clearly defined objectives. This is a period when a rapidly increasing amount of highly promising technology is beginning to emerge from these programs in a manner which national programs can adapt to local conditions and utilize in their national production efforts. This is a time when the growth of the commodity programs should begin to level off and outreach services take on an increasingly important role. It is likely, therefore, that the proportion of the Center's total available resources dedicated to technology transfer activities will increase during the next five years.

### **Training**

*Number and Types of Courses to be Held at CIAT.* The following group courses are presently planned as regular (yearly) and special events in the next five years.

**Beans:** Two yearly 5-week intensive courses for 30 participants each on research for bean production (in Spanish). Starting in 1980, in alternate years one of the courses will be given in English for participants from Asia, Africa and the Caribbean.

**Cassava:** One yearly 4-week intensive course for 30 participants on research for cassava production (in Spanish).

Two 2-week courses for 15 participants each on tissue culture, one in English (1979), and one in Spanish (1980).

**Tropical Pastures:** One yearly 5-month course for 20 participants on research for forage production (in Spanish).

Specialized 2-week courses in specific disciplines may be added.

**Rice:** One yearly 5-month course for 10 participants on rice research and production (in Spanish).

One yearly 4-week intensive course for 30 participants on rice production.

**Seed Technology:** One yearly 8-week course for 25 participants on seed production technology (in Spanish and English).

Two 4-week intensive courses for 25 participants each on basic seed production, in 1980, and one on seed quality control, in 1981.

*Projected Numbers and Categories of Participants.* The projected distribution of numbers and man-years of participants among the various categories of training during 1979-1983 is shown in Table 2. The largest number of participants each year will be attending short intensive courses directed at staff for technology validation networks. However, the categories of longer term training--Visiting Research Associates and Scholars, Post-Graduate Interns and Post-Doctoral Fellows--still constitute the larger body of training in terms of man-months, with 74 percent of training time devoted to these categories. Participants in these categories are intended to provide the central strength of future national research programs on CIAT's commodities.

*Assistance to In-country Training Courses.* The Center's catalytic involvement in developing national training programs can be provided only to a few countries. Until now, Ecuador, Guatemala, the Dominican Republic, Panama and Paraguay have

TABLE 1

*Training courses projected for the period 1979-1983*

Training Courses	1979	1980	1981	1982	1983	TOTAL PARTICIPANTS
<b>BEANS</b>						
5-week (production)	2	2	2	2	2	300
<b>CASSAVA</b>						
4-week (production)	1	1	1	1	1	150
2-week (tissue culture)	1	1				30
<b>TROPICAL PASTURES</b>						
5-month (forages)	1	1	1	1	1	125
2-week (specialized)		1	1	1	1	50
<b>RICE</b>						
5-month (production)	1	1	1	1	1	50
4-week (production)	1	1	1	1	1	150
2-week (specialized)			1	1	1	30
<b>SEEDS</b>						
8-week (technology)	1	1	1	1	1	200
4-week (basic seed production)		1				25
4-week (quality control)			1			25
<b>Total</b>	<b>8</b>	<b>10</b>	<b>9</b>	<b>8</b>	<b>8</b>	<b>1135</b>

TABLE 2

*Numbers and man-years of participants in CIAT's training activities projected for 1979-1983*

	1979		1980		1981		1982		1983		Total	
	No.	M-Y	No.	M-Y	No.	M-Y	No.	M-Y	No.	M-Y	No.	M-Y
Post-Doctoral Fellows	10	(10)	15	(15)	15	(15)	15	(15)	15	(15)	70	(70)
Visiting Research Associates and Research Scholars	20	(20)	30	(30)	40	(40)	40	(40)	40	(40)	170	(170)
Post-Graduate Interns	50	(25)	50	(25)	50	(25)	50	(25)	50	(25)	250	(125)
Medium-term courses (3 to 6 months)	35	(10)	35	(10)	35	(12)	35	(12)	35	(12)	175	(73)
Intensive Courses (4 to 8 weeks)	160	(15)	180	(15)	180	(15)	180	(15)	180	(15)	880	(75)
Total	230	(80)	210	(95)	330	(107)	330	(107)	330	(107)	1 545	(513)

received attention. Table 3 shows the countries or regions which have requested assistance and are likely candidates in the next few years.

*Audiotutorial Units.* These units developed at CIAT for the use in its training activities will also be distributed to national training programs. Table 4 shows a projection of units to be made available on different subjects for each commodity.

### Conferences

A basic pattern of workshop events common to all commodity programs has been developed. This pattern includes a commodity research network meeting every other year and a special topic workshop in alternate years. These are indicated in the schedule below for 1979-1981. Other CIAT-sponsored or co-sponsored conferences are expected to be incorporated as the need arises.

<b>Beans</b>	Network:	International Bean Yield and Adaptation Network (IBYAN) (November 1980, and alternate years thereafter).
	Special:	Fungus Diseases of Beans (1979). Viral Diseases of Beans (October 1981).
<b>Cassava</b>	Network:	Latin American Cassava Society (symposium) (1979).
	Special:	Cultural Practices (to be held in Brazil) (1979).
<b>Tropical Pastures</b>	Network:	Pasture Research Network (June 1980).
	Special:	Land Resource Evaluation for Pasture Production (March 1980).
<b>Rice</b>	Network:	Latin American Rice Testing Program (March 1979 and March 1981).
	Special:	Rice Diseases in Latin America (Date not set).
<b>Seed Technology</b>	Special:	Leadership and Management Workshop (August 1979 and August 1981).

TABLE 3

*Countries for which CIAT assistance to local training programs is possible during 1979-1983*

Commodity	1979	1980	1981	1982	1983
BEANS	El Salvador Guatemala	El Salvador Colombia Peru	Central America Peru Colombia	Central America Venezuela East Africa	Central America Mexico East Africa
CASSAVA	Mexico South East Asia*	Brazil South East Asia*	Brazil South East Asia*	Brazil South East Asia*	Peru South East Asia*
TROPICAL PASTURES		Brazil	Brazil	Bolivia Venezuela	Bolivia Venezuela
RICE	Ecuador	Central America Colombia	Central America Peru	Central America Brazil	Venezuela Brazil

*\*Regional Courses*

**TABLE 4**

*Cumulative numbers of audiovisual training units to become available during 1979-1983*

<b>Commodity</b>	<b>1979</b>	<b>1980</b>	<b>1981</b>	<b>1982</b>	<b>1983</b>
<b>Beans</b>	<b>20</b>	<b>25</b>	<b>34</b>	<b>43</b>	<b>50</b>
<b>Cassava</b>	<b>15</b>	<b>25</b>	<b>32</b>	<b>40</b>	<b>50</b>
<b>Tropical Pastures</b>	<b>5</b>	<b>10</b>	<b>30</b>	<b>40</b>	<b>50</b>
<b>Rice</b>	<b>15</b>	<b>25</b>	<b>35</b>	<b>45</b>	<b>50</b>
<b>Seeds</b>	<b>5</b>	<b>20</b>	<b>30</b>	<b>40</b>	<b>50</b>
<b>Across Commodities</b>	<b>5</b>	<b>17</b>			

In addition, a limited number of conferences are proposed. These are of the methodology and production strategy types (page 32) with across commodity coverage, mostly in co-sponsorship with other international organizations. Their subjects are of direct interest to CIAT's outreach and research strategy. The following are scheduled for 1979-1980.

- Policies for Food and Feed Crop Production (October 1979).
- Plant Pathogenic Bacteria (1980).

Other scheduled yearly events that are important components of CIAT's outreach tactics are:

- Presentation Days: CIAT's Advances in Research (yearly in April).
- Annual Program Reviews (yearly in December).

TABLE 5

*Outposted regional services staff projections through 1983*

Program	Region	Number	Location	Starting Year
Beans	Central America & Caribbean	1	San Jose	1977
	Eastern Africa I	1	Nairobi	1980
	Eastern Africa II	1	Nairobi	1981
	Southern Cone	1	Goiania or Londrina	1983
Cassava	Asia I	1	Los Baños	1977
	Asia II	1	Los Baños	1981
	Southern Cone I	1	Cruz das Almas	1980
	Southern Cone II	1	(Not chosen)	1981
	Central America & Caribbean	1	(Not chosen)	1980
	Andean Zone	1	CIAT Head- quarters	1977
Tropical Pastures	Savanna (Brazil, Paraguay, Bolivia)	3	Brasilia	1977
	Humid Tropics (Peru, Ecuador, Colombia, Brazil)	2	(Not chosen)	1980
	Southeast Asia	1	(Not chosen)	1983
Rice	Central America & Caribbean	1	San Jose	1977

## Regional Services Staff

Based on the criteria described on page 14 above, CIAT's four major commodity programs plan to outpost regional services staff, listed in Table 5, in the geographic areas indicated, during the next five years.

## Bilateral Contract Staff

### *Current Staff Assignments*

*Projections.* Since these types of appointments will depend on special project fund availability and are of a temporary nature, it is neither possible, nor desirable, to project precisely for which countries funds will become available and which countries will meet the criteria described above. However, it is important to set some limits on the general magnitude of such involvement.

It will be CIAT's policy to try to be continuously involved in a few such bilateral contract activities. These provide a very important feedback mechanism to the Center by putting commodity program scientists in touch with the various problems of national commodity programs working under real conditions; and by providing vertical integration from the research laboratory to the farmers' fields. Participation should remain modest and will be a dynamic involvement as individual country programs are completed and new ones are initiated. It is anticipated, there-

TABLE 6

*Current outposted bilateral contract staff*

Country	Program	No. Staff	Beginning Date	Probable Completion Date
Guatemala	ICTA-General	2	1974	1980
	ICTA-Beans	2	1977	1982
Salvador	Seeds	1	1978	1979
	Technology Validation	1	1978	1979
Peru	Beans	1	1979	1982

fore, that no individual commodity program will, at any one time, be involved with more than three countries or engage more than five such bilateral contract staff. Also, CIAT as a Center will not be working with more than five individual countries nor outpost more than 15 such bilateral contract staff at any one time during the next five years.

Current assessments from commodity programs indicate the following countries as having highest possibilities for such involvement in the respective programs.

<b>Beans:</b>	Brazil, Honduras, Venezuela, and Mexico.
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<b>Cassava:</b>	Brazil, Mexico, Venezuela, Peru, Bolivia, and Guyana.
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<b>Tropical Pastures:</b>	Brazil, Peru, Bolivia, and Venezuela.
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### **Total Outposted Staff Projections**

The combined projections for total outposted staff, including both research and outreach services personnel, and taking into consideration very rough projections of bilateral contract staff, are summarized in Table 7.

**TABLE 7***Maximum projections of CIAT outposted staff during 1979-1983*

<b>Regional Services</b>	<b>1979</b>	<b>1980</b>	<b>1981</b>	<b>1982</b>	<b>1983</b>
<b>Beans</b>	<b>2</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>7</b>
<b>Cassava</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>6</b>	<b>6</b>
<b>Tropical Pastures</b>	<b>3</b>	<b>5</b>	<b>6</b>	<b>8</b>	<b>9</b>
<b>Rice</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>
<b>Bilateral Contrat</b>	<b>7</b>	<b>8</b>	<b>10</b>	<b>15</b>	<b>15</b>
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
<b>Total</b>	<b>15</b>	<b>22</b>	<b>28</b>	<b>35</b>	<b>37</b>

## APPENDIX A

### Cooperating Institutions

The following are some of the regional Latin American institutions and international agencies which are actively cooperating with CIAT.

#### **Regional Institutions**

*IICA.* The Interamerican Institute of Agricultural Sciences of the Organization of American States is a large and active organization in this hemisphere with many activities in agricultural development closely related to the objectives of CIAT. The large number of projects which it executes supply an excellent opportunity for testing and utilization of CIAT technology. Its extensive network of national and regional representatives provides an important base for information, local contacts, and logistical support which can be used to mutual benefit. CIAT has an agreement with IICA for such cooperation and the two institutions are expanding their collaboration.

*IDB.* The Inter-American Development Bank is not only a valued source of financing to CIAT's core budget but is also an important contact because of the large number of agricultural projects it finances with loans and grants throughout Latin America. A growing number of contacts have been made with the headquarters and regional offices in order to strengthen cooperation and ensure that CIAT technology is made available for its various projects, and that information gained in these projects provides feedback to aid in technology design of the Center.

*CATIE.* The Centro Agronomico Tropical de Investigacion y Enseñanza, a regional research and training institution serving Central America, is actively involved in cropping systems research, working chiefly with small farmers in that region. Cooperation with these on-farm activities provides an excellent opportunity for testing and feedback in relation to the usefulness of CIAT technology for improvement of small farmer cropping systems. An agreement has been signed between CATIE and CIAT and it is anticipated that there will be growing collaboration in this important activity.

**PCCMCA.** The Programa Cooperativo Centroamericano para el Mejoramiento de Cultivos Alimenticios is an organization of Central American and Panamanian scientists that has been meeting annually for many years to exchange information on results of regional testing of a number of basic food crops. CIAT participates actively in its annual meeting and has responded to this organization's request to provide coordinators for rice and beans for that region.

**CARDI.** The Caribbean Agricultural Research and Development Institute is a recently formed regional institution with responsibility for agricultural research in Trinidad-Tobago, Barbados, Antigua, Granada, Jamaica, Belize, San Vicente and Santa Lucia. Plans are under way to expand initial contacts for collaboration between CIAT and this institution.

**Andean Pact.** This grouping of nations resulting from the Cartagena Agreement is active in the area of agricultural cooperation. CIAT is collaborating with this organization in matters pertaining to food policy and seed production.

### **International Agencies**

**FAO.** Owing to the obvious areas of overlapping interests the contacts and areas of collaboration are expanding between CIAT and the Food and Agriculture Organization, a global organization dealing with worldwide food production. FAO has named several Associate Experts to work at CIAT and has recently designated a high-level officer to serve as liaison between the two organizations. Active discussions are under way regarding collaboration in several regional and national research and/or training projects involving CIAT commodities and seed production technology.

**The World Bank.** Frequent contacts, and occasional involvement of CIAT staff as consultants, provide opportunity for exchange of views regarding areas of mutual interest, especially in relation to World Bank-financed agricultural development projects.

**IADS.** A memorandum of understanding has been signed and active collaboration is progressing between CIAT and the International Agricultural Development Service for active involvement of CIAT in IADS projects involving commodities in CIAT's area of responsibility. We also anticipate close and growing cooperation in commodity programs in training and conferences with this organization as well as with the International Service for National Agricultural Research (ISNAR), a larger,

similar organization currently under development for the strengthening of national research capabilities.

*Bilateral Technical Assistance Agencies.* CIAT maintains contact with, and in some cases active participation in, regional and national program activities of various bilateral agencies such as the United States Agency for International Development (USAID), the Canadian International Development Agency (CIDA), the International Development Research Centre (IDRC), The Swiss Technical Cooperation Service, the Netherlands International Technical Assistance Department, and others.

*Sister Centers.* Close collaboration exists with the outreach activities of other International Agricultural Research Centers. These Centers can also provide an important contact and possible logistical base for transfer of CIAT technology.

## APPENDIX B

### Training Activities of CIAT

1. *Individualized training in research or production.* Opportunities are provided for young professionals to come to CIAT for post-graduate internships of 5 to 12 months in research methodology or in production technology in given commodities.
2. *Individualized training in research support.* A limited number of internships (6 months) are provided for training in the management of experimental stations and in seed technology, with particular emphasis on CIAT commodities. In addition, some short-term (2 to 3 months) internships are offered in documentation, in instructional technology, and in biometrics.
3. *Short- and medium-term courses.* Short-term (1 to 2 months) and medium-term (up to 6 months) multidisciplinary courses are periodically organized in applied research for production of beans, cassava, forages, swine, rice, and seed technology.
4. *Thesis work.* In cooperation with selected graduate schools, opportunities are offered for conducting MS thesis and PhD dissertation research at CIAT.
5. *Postdoctoral fellowships.* Such fellowships which are of a duration of 6 to 24 months are made available for high-level training of young scientists both from developing as well as from developed countries.
6. *Training materials.* Training materials are developed to assist instruction at CIAT and within countries.

In addition to training offered at its headquarters, CIAT assists interested countries on a limited basis in organizing and conducting within-country training programs in national research institutions. These programs are normally directly related to CIAT's commodities and stress methodology of on-farm testing.

Candidates for training at CIAT are nominated by local institutions who are required to identify the candidates' future duties. Both the Training Office and individual commodity programs maintain contact with former training participants. Such contacts are typically in connection with the operation of testing networks, transfer of materials and information on new technology, and multiplication of training within a country.

## APPENDIX C

### Conference Activities of CIAT

1. *Network workshops.* These annual or biennial events are designed to bring together former CIAT trainees and/or other professionals participating in the Center's international testing networks. Network workshops provide forums for exchanging information, for planning germplasm exchanges and testing, and for planning technology validation for local conditions. (E.g., meetings for the International Rice Testing Network.)
2. *Specific problem conferences.* These bring together research scientists to work on specific disciplinary/commodity problems. (E.g., plant protection of cassava.)
3. *Methodology workshops.* These workshops may be commodity specific or may involve several or all of CIAT's commodities. (E.g., a seminar on allocation of research resources.)
4. *Production strategy conferences.* Such conferences may include scientists and decision-makers from national institutions who meet to discuss the development and implementation of plans for the effective utilization of new technologies emerging from CIAT and national institutions. (E.g., rice policy seminar.)
5. *Policy alternatives.* CIAT may sponsor a series of workshops of high level decision-makers regarding food production policies. In such workshops CIAT does not advocate specific policies but rather provides a forum for open exchange of ideas between key policy-makers regarding the pros and cons of alternative policies. CIAT benefits from these meetings in that they contribute to the understanding of policy constraints and objectives, and the nature of the appropriate technology to meet the countries' priorities.

## APPENDIX D

### Products of Communication Support Unit

The Communication Support Unit has the responsibility of reaching a variety of publics with specific message packages. The most important packages to be produced during the period 1979 to 1983 are the following:

1. *Annual Report.* Produced both in English and Spanish, this 400-page document is a complete report on research objectives, activities and results pertaining to all of CIAT's programs. The Annual Report is distributed mainly to international, regional and national organizations, libraries, other research institutions and CIAT sponsors. Separately bound sections of the Annual Report dealing with specific commodities are widely distributed to collaborating commodity researchers.
  
2. *Highlights.* This illustrated publication containing approximately 120 pages is published in both English and Spanish. It presents a condensed version of the Annual Report, focusing on program highlights only. It is intended to disseminate technical information explained in a popular style. Highlights is widely distributed to CIAT contacts at all levels.
  
3. *Noti-CIAT.* Noti-CIAT is a newsletter designed to represent the Center's overall activities to various publics--technical as well as non-technical. Its purpose is to keep the Center's contacts posted on:
  - (a) program developments at CIAT,
  - (b) new production and research methodology, and
  - (c) the Center's technology transfer projects and activities.

Noti-CIAT is produced both in English and Spanish.

4. *Commodity-specific newsletters.* Commodity-specific newsletters are published periodically. They contain information on:
  - (a) developments within the respective CIAT commodity programs,
  - (b) new technology (both CIAT- and non-CIAT generated), and
  - (c) information on commodity-related work in cooperating national programs.

Their purpose is to provide the existing networks of commodity workers with regular information from CIAT. Two such newsletters will be started in 1979 and two more will follow later.

5. *Technical Publications.* The Center has various publication series in which technical information is published (e.g., Monographs, New Production Technologies, Technology Impact Studies, Seminar Proceedings, etc.). Approximately 20 of these technical reports are published annually by the Communication Support Unit.
6. *Audiotutorial Units.* In an effort to package didactic information relating to the production of commodities within CIAT's mandate, the Communication Support Unit produces audiotutorial units consisting of:
  - (a) a recorded tape with verbal information,
  - (b) a series of slides supporting the verbal message, and
  - (c) a printed study guide to accompany the audiovisual materials.

The units are intended for use at CIAT as well as within-countries (at universities, national institutions, etc.).

7. *Public Information.* In its efforts to keep the public at large informed of CIAT's goals and activities, the Communication Support Unit also produces a variety of message packages (e.g., information brochures, 16mm films, displays for visitors, and informational audiovisuals on the Center and its programs). The Unit also attempts to inform a range of general audiences with articles and news releases for dissemination through existing communications channels.

## APPENDIX E

### CIAT Documentation Services

1. *Abstracts of all documents processed by the Documentation Center.* These are printed on 3 x 5" cards which are airmailed monthly to approximately 1800 subscribers in the world.
2. *Tables of Contents.* Scientists in Latin America receive the contents pages of those journals received by the Library every month.
3. *Photocopying Service.* The two services above are backed by a photocopying service which fulfills the important function of document delivery to users.
4. *Specialized Literature Searches.* CIAT's mechanized system allows for highly specific literature searches to be performed in an average of 15 to 20 minutes, permitting requests to be answered the same day they are received.
5. *Annual Cumulative Bibliographies.* All articles processed in the Documentation Center are, at the end of the year, indexed into specific categories and published in book form.
6. *Monographs and Manuals.* To give a complete range of information services, broad areas of research are chosen and a well-known specialist is given the task of making a state-of-the-art report, which is published as a monograph.