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CATIE

AGRICULTURAL TRAINING AND TRANSFER OF TECHNOLOGY

IN THE CENTRAL AMERICAN ISTHMUS

CATIE TURIALBA
DIRECCION

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--A PROPOSAL TO THE KELLOGG FOUNDATION--

RECIBIDO

CIDIA
San José, Costa Rica

A. The Problem

The high proportion of the food consumed in the Latin American tropics is produced by small medium-sized farmers. In Central America, about 75 percent of the staple food (mainly corn and beans) is grown by farmers with less than 35 Ha. Most of these farmers still continue with their outmoded traditional farming systems and so far progress toward better living conditions has been extremely slow, or negligible.

The following are some of the factors which are impairing the development of the rural poor in these countries:

- a) For these kinds of farmers the new technology available in most cases is grossly inadequate. Most agricultural research has been developed for farmers with capabilities for high use of inputs, and it is generally of restricted applicability to small farmers under tropical conditions specifically in more humid tropics.
- b) The shortage of properly trained personnel is one of the main constraints for attaining the development of appropriate technologies for the small farmer in Central America. Education at the undergraduate level is usually deficient for several reasons. There are not enough teachers with adequate training and education is oriented toward specific subject matters or crops, with the idea of solving the problems using the same methodology that was successfully applied in developed, temperate countries.

1. Training at CATIE

Through individual programs and projects, (including the graduate program with the University of Costa Rica intensive and short courses, seminars workshops and in-service training) CATIE has already provided substantial training to a considerable number of people from different countries. In an attempt to further organize and augment CATIE's training capability, we have created a Sub-Director's Office for Training and Technologic. Cooperation. Under this Office, there will be a unit that will permit the coordination and execution of an overall educational program within the general philosophy of CATIE. It will cover different levels of training and hopefully will increase the national capability in the near future. What we are now doing is briefly described below:

- a) Graduate Program. Since 1948 until 1973, IICA awarded the Master of Science degree. In 1973 CATIE signed an Agreement with the University of Costa Rica to continue the Graduate Program at Turrialba, and at the present time more than 50 students from Latin America are involved. The Program as a whole is under the academic regulations of the University and is oriented within CATIE's research objectives.

-- Graduate students are trained toward production systems and exposed to the interdisciplinary approach to research which give them a better understanding of their role in the agricultural development of the small farmers, in order to improve their living conditions. Due to this orientation and the already available physical and human resources, this Program will continue with a Latin American scope, but with a limited number of participants.

- b) Intensive Courses. The duration and cost of the formal graduate education makes it difficult to train the required personnel in a short time. Therefore, to upgrade the capacity of the countries, specially in research and teaching, and to update the knowledge of the nationals, we started at CATIE a series of intensive courses. They are authorized by the Graduate Program and are taught mostly by invited Ph.D. scientists for students with a university degree. They last six weeks, covering a specific area;

and for the participants that pass the exams and become a regular graduate students, a number of credits is recognized by the Program.

- c) Short Courses. This type of training makes possible the fast updating of a large number of people, in a more economical form. It provides "refresher" training for personnel already involved in production and extension activities, and strengthens the capability of new staff in national institutions. The updating of knowledge, in a short period of time (two to four weeks), at low cost, is of vital importance to benefit national institutions which, for budgetary as well as for functional reasons, can not afford to distract key personnel for a long period, such as will be required for regular graduate training. The short courses are oriented primarily to improving the capacity of personnel in Central America and Panama.

- d) Seminars and Workshops. To interest the technician, as well as the administrator, in particular activities of CATIE or in new available knowledge, we have started a series of one to two-week seminars or again primarily for personnel within the Central American Isthmus workshops. Due to the active participation of the personnel involved, there is usually a very fruitful interchange of experiences and a feed back from the participants to CATIE staff. This type of activity is carried out at headquarters, but mostly in the countries and hopefully, in the future, at the research sites.

- e) In-Service Training. This presents another alternative by which the national staff of the Central American Isthmus receive personal attention, working on specific problems, during a time span which is intermediate between short courses and graduate training. Usually, it requires between two to three months to work side by side with CATIE staff and with experienced national personnel in a particular area of agricultural production.

Most of the training activities described above take place either at CATIE's headquarters or in the countries of the Central American Isthmus; the latter will be intensified specially for the short time training, as resources become available.

Due to CATIE's cooperative research and outreach programs in cropping systems, animal husbandry and forestry production, an interest in the expansion of non-degree training courses has been awakened. The Ministers of Agriculture of the Central American countries in several meetings during the second semester of last year, have expressed further support for the role that CATIE should play in this important matter.

2. Transfer of Technology

Although we are conscious at CATIE that the process of transferring the appropriate technology is primarily a national responsibility, our aim is to help national institutions seek and develop more appropriate and effective models or strategies in the mass transfer of profitable new technology -----
---- to the small farmer. We think that appropriate technology should not rest on the desk of the researchers and therefore, we ought to help seek models to accelerate that process, in order to increase the production and productivity of the small farmers. We are planning to initiate a program with national institutions to study models for the transference of technology, under the Office of the Sub-Director for Training and Technical Cooperation.

C. The Proposal

We are submitting this proposal with a view toward strengthening our own capacities in the development of and backstopping of Programs in Central America.

This Proposal, is structured contemplating a five-year plan to cover the six countries of the Isthmus and within CATIE's overall training program for that period.

1. General Objectives

To strengthen the capacity and capability of the national institutions in the six countries of the Central American Isthmus for developing or adopting appropriate technology for the small farmer and to accelerate the transfer of that technology, in order to improve the agricultural production and productivity, and therefore, the living conditions of the small farmer.

2. Specific Objectives

To train enough national personnel with sufficient knowledge on crops, forestry, and livestock production to face the problems of their individual countries by developing techniques to meet their needs.

To provide "refresher" training and to strengthen the capability of new staff in national institutions through short-term training.

To increase the participation of Central American professionals in the Graduate Program through the stimulus of providing scholarships.

To study models for accelerating the process of transferring adequate technology at the small farmer level.

3. Goals

- a) To provide specific training for 60 persons by means of "in-service training".
- b) To provide general information on agricultural problems through seminars and workshops for 210 people to make them aware to these problems.

- c) To train 280 technicians and professionals on general topics by means of short courses.
- d) To train 280 national research and teaching staff through intensive courses.
- e) To provide for the graduate training of 12 professionals within the four-year span of the Proposal.
- f) To establish in each country at least one model of accelerating the transfer of appropriate technology.

4. Strategy

To accomplish the goals and objectives mentioned above, there is a need to strengthen the present staff at CATIE, and to establish a number of training activities.

- a) Personnel. In order to increase the Center's training activities to perform the task desired, there is a need to appoint two new specialists, at least at the M.S. level, and some sub-professional and support staff to cover certain activities as the organization of courses, the production of audio-visual and printed materials and technical communications.

A Training Coordinator will be required to obtain, analyze and discuss priorities of the subjects in which that short-term training must be started in each country and in the region as a whole. He must evaluate the resources already available to avoid duplications and to establish the areas of more urgent needs. He will be required to put together the training activities and to supervise the arrangements for programs, co-sponsoring institutions, speakers and places of training.

A Communications Specialist whose main initial function will consist in promoting the training activities as well as generating the



written and printed materials to be distributed in the different training events. At the same time, he will evaluate the Mass Communication Program in the areas where research is in process, to eventually serve in the models of transfer of technology for accelerating that process.

The Training Coordinator and the Communications Specialist will help in their own fields at the Center's level and will contribute directly in parts of the training courses at both the graduate and other levels.

b) Training Activities

An in-Service Training will be established to prepare personnel on highly specialized topics during a three-month period, both at CATIE and in the countries where we have staff available.

Information Seminars and Workshops will last one week and deal with both administrative and technical subject matters. They will be oriented mostly to generate added interest in new approaches for the development and transfer of technology.

Short Courses will comprise general production problems, and will be given in the countries other than Costa Rica. Topics will be covered by CATIE staff as well as guest speakers.

Intensive Courses will be taught mostly at CATIE because of the organization and support required to hold them.

Attendants holding a B.S. degree may apply for obtaining credits at the Graduate Program, if they pass the course. Courses at this level will be taught in cooperation with several known high level guest speakers. The courses will cover very specific fields in an intensive way.

The duration of the courses will be six weeks

Fellowship Program. To increase the research capacity of the Central American countries, a Fellowship Program is envisaged to train at least two B. S. graduates from each Central American countries in the Graduate Program. Their theses work could eventually help in the work related to training and communications.

The courses and activities indicated in the calendar of events and budgeted in the following pages have been designed as part of a general training plan, but are to function by themselves as a unit capable of accomplishing the general training objectives.

c) Transfer of Technology

Since this activity is a new one in CATIE, initially we must try to establish a model in one of the countries which will serve us to obtain methodology and theory, as well as to provide training. The model should be in a defined area where research work is already under way, and where we can have a concentration of efforts from different disciplines.

e) Equipment

The largest initial requirement will be for transportation. A small bus and a car are recommended. A moveable communication unit for reproduction of training material on the spot, audio-visual equipment, and some printing equipment for headquarters are also recommended