

THRESHOLD EVALUATION
OF
THE AGRICULTURAL EDUCATION PROJECT
UNIVERSITY CENTER AT DSCHANG
CAMEROON

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ABBREVIATIONS USED

AASCU	American Association of State Colleges and Universities
A/E	Architectural and Engineering
BAC	Baccalauréat (13 years - French)
BS	Bachelor of Science
CENEEMA	Centre National d'Etudes Expérimentales de Machinisme Agricole (National Center for Studies and Experimentation in Agriculture Machinery)
CAM	Collaborative Assistance Method (or Mode)
CIAT	International Center for Tropical Agriculture
CIP	International Center for Potato Research
CNA	Collège National d'Agriculture (National College for Agriculture)
CRA	Collège Régional d'Agriculture (Regional College for Agriculture)
DGRST	Délégation Générale a la Recherche Scientifique et Technique (General Delegation for Scientific and Technical Research)
ENSA	Ecole Nationale Supérieure Agronomique (National Advanced School of Agriculture)
ETA	Ecole des Technique Agricoles (School of Agricultural Techniques)
FONADER	Fond National Agricole Development Rural
GRC	Government of the Republic of Cameroon
HBCU	Historically Black Colleges and Universities
IA	Ingénieur Agronome (Agriculturalist) - Degree from five-year ENSA program
IARC	International Agricultural Research Center
IBRD	International Bank for Reconstruction and Development
IITA	International Institute for Tropical Agriculture
IRA	Institut de Recherches Agronomiques (Institute for Agri- cultural Research)
IRZ	Institut de Recherches Zootechniques (Institute for Zoological Research)
ITA	Institut des Techniques Agricole (Institute of Agricultural Techniques)
IT	Ingénieur des Travaux Agricoles (Engineer of practical agri- culture - degree obtained from three-year ITA program)
MS	Master of Science
MINEP	Ministere du Plan et de l'Amenagement du Territoire
MINED	Ministere de l'Education Nationale
MOA	Ministere de l'Agriculture
MOL	Ministere de l'Evelage des Peches et des Industries Animales
MESRES	Ministère de l'Enseignement Supérieur et de la Recherche Scientifique
OIP	Office of International Programs, University of Florida
PP	Project Paper
COP	Chief of Party
PACD	Project Assistance Completion Date

PES Project Evaluation Summary
R&D Research and Development
T&LU Testing and Liaison Unit Program - IRA
UCD University Center of Dschang
UF University of Florida

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EXECUTIVE SUMMARY

This evaluation assesses performance and accomplishments of the Agricultural Education Project, a Government of Cameroon project supported by the United State Agency for International Development. Planned for a six year term, the project has been operational for four years, at the University Center of Dschang, having started in January 1983. The project may be described as a collaborative effort between the University Center of Dschang and the University of Florida, which is serving as the principal USAID contractor.

Basically, the project objective is to establish an agricultural university having the capability of providing an integrated teaching, research and outreach program that will promote increased agricultural production in Cameroon. The system used so successfully in the United States, which led to the creation of "Land Grant Colleges," which in turn were so instrumental in the development of American agriculture, is the model being adapted for Cameroon in this project.

Persistent cooperative efforts of UCD and the UF Team were directed towards accomplishing eight specific goals, identified in the Project Paper as outputs. These are listed briefly as follows:

1. To revise the existing university's academic and administrative structure to attain a more efficient and effective institution.
2. To revise the university curricula to achieve the equivalent of a four-year BS degree granting program.
3. To upgrade the university's faculty and staff.
4. To promote and develop interdisciplinary research.
5. To develop and strengthen linkages between UCD and client agencies.
6. To establish and develop demonstration farms to be used in conjunction with the university's teaching, research and outreach functions.
7. To provide facilities needed to support the three educational components: teaching, research and outreach.
8. To develop and improve two essential university supporting services; namely, 1) maintenance of plant and equipment and 2) maintenance and operation of the motor pool and garage.

Accomplishment of specific objectives, or outputs, are summarized here in the sequence in which they were mentioned above.

Outputs 1 and 2 have been accomplished. Academic and administrative structures have been revised to achieve greater operational efficiency and to facilitate the merger of the Ingenieur Agronome (IA) and the Ingenieur des Travaux Agricoles (IT) programs into a four-year BS degree equivalent program.

Curricula have been revised to accommodate the phase out of the IA and IT programs and the introduction of the BS degree equivalent program at the beginning of the academic school year 1987-88. These accomplishments were acknowledged in an official recommendation by an arreté issued by the Ministry of Higher Education and Scientific Research (MESRES) in March 1986.

Output 3 is well on the way to being accomplished. The University's faculty and staff are being upgraded mainly through participant training of faculty and in-service training of the staff. Upgrading of personnel is a continuing effort throughout the life of a university. The Project Paper called for training of 55 Master of Science and 3 Ph.D. participants. At this point in time (November 1986), 35 participants are training in the United States at 16 universities, and three have returned to assume their duties at Dschang. It is reported that another 12 are being processed for training in the U.S. The emphasis on upgrading is further reflected by the fact that the number of Ph.D. candidates to be trained has been increased to 13.

Outputs 4 and 5 have received a lot of attention in terms of identifying procedures and problem areas in conducting research and outreach programs. Considering the youthful stage of UCD's development, the university's research and outreach accomplishments are quite limited. Although some research and outreach work is in progress, more time is required to arrive at measurable results.

Outputs 6 and 7 refer to development of three demonstration farms and other facilities. Except for the demonstration farm on campus, very little has been done to equip and utilize these installations. The campus farm, because of its proximity and accessibility to students, has established some garden plots and provided shelter for rabbits, chickens, pigs and goats to be used for educational purposes and to help supply food for student cafeterias.

Much remains to be done in terms of building facilities, providing equipment and supporting services, and installing the necessary management and supervisory personnel.

Construction of other facilities is still a serious problem. Plans for the final phase of campus construction have been recently approved and an estimated three years will be required to complete the construction.

Output 8 is concerned with maintenance of university facilities and operation of the garage and motor pool. These problem areas are being addressed by providing technical and planning assistance to recruit and train personnel to handle these important functions.

In conclusion, the evaluation indicates that a significant momentum has been achieved in the development of the UCD. About half of the project outputs still remain to be accomplished. These are tied closely to completion of the final phase of construction and to long range development of the research and outreach programs, which depend largely upon the return of participant trainees.

This evaluation has produced a number of specific recommendations, as recorded in each section of the text. Five general recommendations, however, will highlight the areas requiring continued technical assistance and financial support.

- 1) Every effort should be made to expedite the final phase of the construction program to permit full scale operation of the UCD.
- 2) Continue training of participant trainees and assist them in becoming involved in research and outreach programs when they return to UCD.
- 3) Continue to emphasize and promote interdisciplinary research and outreach activities among the faculty; also strengthen linkages between UCD and its clients.
- 4) Continue reviewing and upgrading curricula, improving scheduling of courses, and emphasizing practical training aimed at increasing agricultural production in Cameroon.
- 5) Apply the necessary resources to have the demonstration farms become operational and available for research and outreach activities.

Introduction

This is a threshold evaluation which is assessing accomplishments after four years of effort by the Agricultural Education Project. The project was designed to assist the Government of the Republic of Cameroon (GRC) to create an agricultural university capable of training managers, researchers, planners and teachers who can effectively staff the agricultural support institutions of Cameroon.

At the outset it was determined that the government leadership of Cameroon was dedicated to the goal of increasing agricultural production and promoting rural development. This dedication is based on the realization that steps must be taken to forestall a mounting social and economic problem for both the urban and rural populations of Cameroon. The problem stems primarily from a rapidly growing population which is estimated to double in the next 25 years. By that time, it is also estimated that over 50 percent, instead of the current 25 percent, of the total population will be living in urban areas. Maintaining self sufficiency in food production in the near future is a matter of increasing concern.

Consequently, the Government of Cameroon, in its ultimate goal of increasing agricultural production, had designated the University Center at Dschang (UCD) as the Agricultural University of Cameroon by a decree issued in 1977. At that time the University Center at Dschang was offering two educational programs: 1) a 3-year university level program to train Ingenieurs des Travaux (IT), and 2) a 3-year diploma granting technician training program.

In a 1978 decree, a second university level program was assigned to be a part of UCD. This was the 5-year program leading to the Ingenieur Agronome Degree (IA) offered by the Ecole Nationale Superieure Agronomique (ENSA). Since ENSA was located at Nkolbisson near Yaounde at the time of the assignment, a major move of ENSA to Dschang was imminent. The move to the UCD campus at Dschang took place physically in October 1985.

The University Center at Dschang is located on the outskirts of the town of Dschang in the Western Province, about 440 kilometers northwest of Yaounde, the capital of Cameroon.

A fundamental idea in establishing the Agricultural University, known as the University Center at Dschang, was to provide practical knowledge and service to farmers so they could produce and market more and better crops and livestock. This could be most effectively accomplished by integrating efforts of teachers, extension agents, researchers and farmers; thus establishing strong ties with the agricultural community. To accomplish this major objective, it was decided that the U.S. Land Grant College System, an integrated agricultural university system as practiced in the United States, would be used as a model, mainly because of its demonstrated effectiveness in promoting agricultural production through its three closely linked components of education: Teaching, Research, and Extension (outreach) (see explanation of "Land Grant" concept at end of this section).

Assistance was requested by the Government of Cameroon (GRC), to install the integrated agricultural university system at UCD. The University of Florida submitted a project proposal in the form of a Project Paper (PP) which was approved 30 June 1981. A grant in the amount of \$16,670,000 and a loan of \$26,350,000 were recommended for a six year period commencing August 1981.

Early elements of the Florida Team arrived in Cameroon in the spring of 1983. Settling in was delayed by lack of housing and office space. In effect, the team didn't really become operational until July 1983. The project assistance completion date (PACD) has been changed to 30 December 1989.

In a comprehensive evaluation such as this, it was necessary to conduct on-site observations, visitations, and interviews. In addition, pertinent documents developed in the course of planning and operation of the project were collected, reviewed, and analyzed for information concerning goals, plans, efforts, performance, constraints, successes and shortcomings.

Background information was obtained from USAID staff members, UF personnel at the home campus, and UF team members on site at Dschang. Interviews conducted included 18 administrators at the University of Florida, 9 members of the UF Team, 10 administrators of UCD, 21 faculty members of UCD, 6 Ministry officials, and 16 participant trainees.

Throughout the evaluation, attention focused upon project strategies in assisting UCD in developing those components needed to arrive at an effective and efficient agricultural university. A policy of integrated services, namely teaching, research and extension, modeled after the U.S. Land Grant System, was introduced. The UF Team strategy was specifically identified in the PP as eight outputs or goals, listed briefly as follows:

- 1) Revise academic and administrative university structures
- 2) Revise curricula to conform with 4-year BS degree equivalent requirements
- 3) Upgrade faculty and staff
- 4) Promote and develop interdisciplinary research
- 5) Develop and strengthen linkages between UCD and client agencies
- 6) Develop demonstration farms
- 7) Provide necessary facilities
- 8) Improve maintenance and motor pool units

What has been accomplished after four years of cooperative effort between the University of Florida Team and the University Center at Dschang? That's what this evaluation attempts to assess. In addition, actions and future time frames are recommended.

Land Grant Concept

The term "Land Grant", although well understood in the United States, is puzzling to people from other lands. Simply put, "Land Grant" refers to an historical event that occurred in the United States during the early days of settlement in frontier territories.

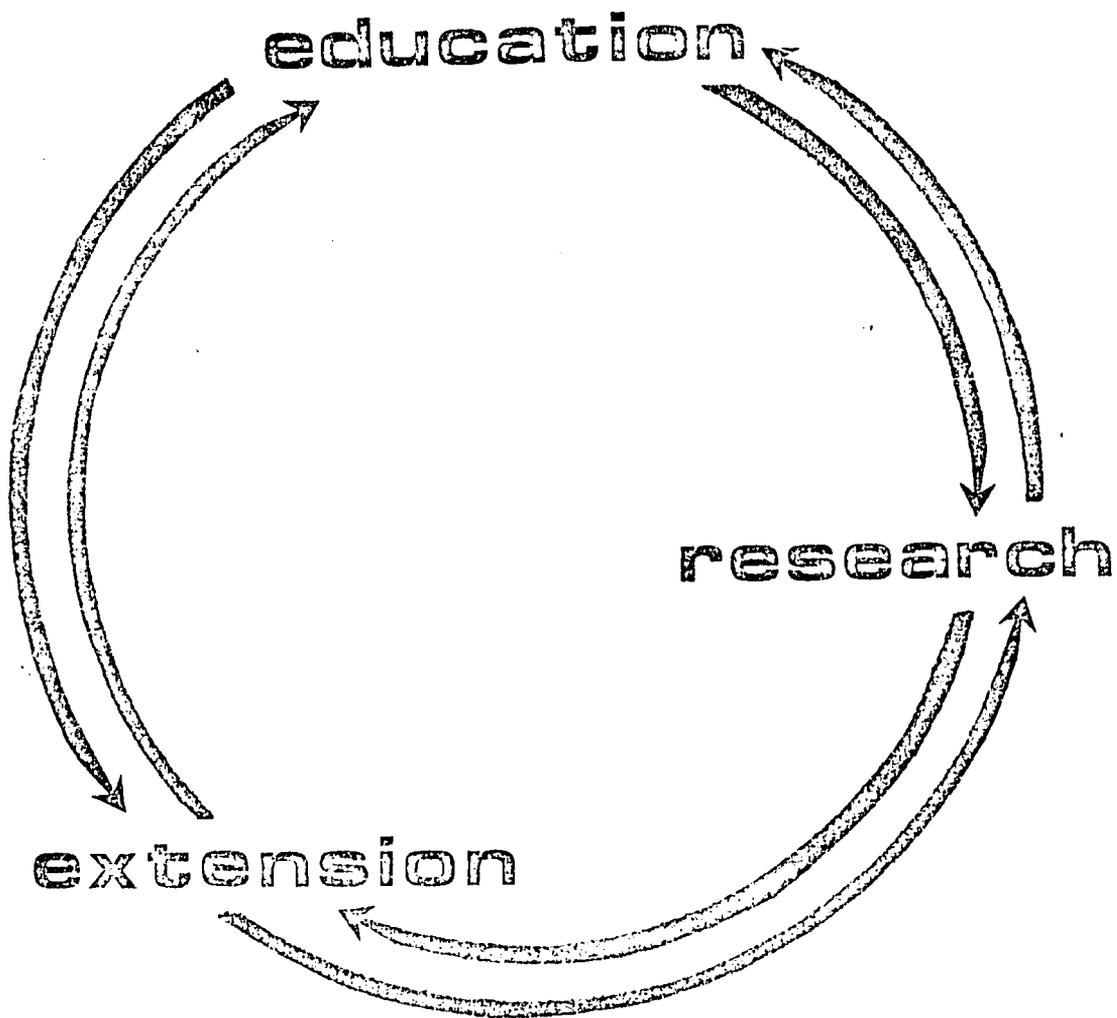
In 1862, the U.S. Government granted to the individual states a portion of land on which to establish an agricultural and mechanical college. The grant of land was typically used for two purposes. One, as a site for the institution and two, as the best means available to the new government of the United States for financing and responding to the need of rural areas for improved technology, training of rural people and transferring technology to rural populations. The "Land Grant" represents a political response to the needs of rural areas. At one level it provided for university training for students who would not have otherwise received it. At a second level it directly provided assistance through research and extension to increase the productivity of farmers in the area.

In simple terms, the "Land Grant University Model" describes an institutional system of education that integrates three important educational functions; namely Teaching, Research and Extension (Outreach). The structure for administering these three functions may vary among institutions. Nevertheless, the basic concept is one of having a university faculty closely cooperating in carrying out the three functions with the ultimate objective of increasing agricultural productivity. Teaching is generally acknowledged as the principal mission of an educational institution. Research on the frontier of new technology, is needed to enhance the educational program.

As a function, research is often relegated to a research station or separate laboratory. Extension, or outreach, is the role generally left to a service type agency or to commercial merchandising of skills, arts, or new technology. Involvement of a university faculty in extension or outreach ensures that the institution maintains an understanding of farm problems as new technology is introduced and farm enterprise evolve. The "Land Grant University Concept", incorporates all three of these missions into one integrated educational mission. This concept has been successfully introduced in other countries, for example India and Morocco.

The following diagram suggests that new knowledge is generated through research. This knowledge is transferred into the teaching function and also to the outreach or extension function. In turn the extension worker identifies needs and problem areas at the production and marketing levels and this information is passed on to the teaching function, also back to the researchers to seek solutions.

EDUCATION - RESEARCH - EXTENSION RELATIONSHIPS



OUTPUT NO. 1: A REVISED ACADEMIC AND ADMINISTRATIVE UNIVERSITY STRUCTURE

Project Strategy

The strategy proposed in the PP was to assist UCD in building an effective and efficient agricultural university and to institutionalize the administrative/management systems necessary for continued operational effectiveness.

UCD was established as a campus in 1977 for teaching, research and production-oriented development under the Ministry of National Education. The campus is governed by a Board of Governors and a Director General. In 1984 a merger of governmental units formed the Ministry of Higher Education and Scientific Research (MESRES), and UCD was placed under this Ministry's governance.

In practice the mission of UCD since 1977 had focused on teaching. While a limited amount of research was underway, there was apparently no organized approach to facilitate the carrying out of research, such as project review, suitable work space, necessary equipment, support personnel, etc. Moreover, there was little incentive to undertake or publish research since research activity was not built into the faculty reward system. Outside of periodic training programs for MOA field personnel, there appeared to be even less activity devoted to a "production - oriented program for development". This was the environment in which the Florida team began work in early 1983.

The combined project loan and grant agreement signed between GRC and the U.S. (through AID) established the frame of reference for the Agricultural Education Project in Article 2, wherein the project was defined. As stated in this 1982 document, the purpose of the project from the organizational and management perspective was to have UCD "modeled on the 'land grant' agricultural university system as practiced in the United States and ... integrate agricultural training, research and extension support to the agricultural sector".

Project Implementation

The UF Team spent considerable time on organizational matters. An early task of the team was to begin planning for the physical move of the ENSA organization from Nkolbisson (outside Yaounde) to Dschang. This entailed development of a master plan for space utilization of existing facilities at UCD and the new ones to be constructed, so as to accommodate the ENSA relocation which occurred by September 1985. There was also the need to plan for the incorporation of ENSA administratively into the existing UCD structure.

A second organizational matter for the team was to work with UCD administration and faculty on the development of the concept of an agricultural university with integrated teaching, research and outreach functions. The UF team approach was to set up a series of observational tours in the U.S. for selected UCD personnel and key GRC Ministry officials. The tours were designed to acquaint Cameroonians with, 1) the concept of the Land Grant agricultural university model and applications of the model as found

among various state universities, 2) the functioning of teaching, research and extension in the agricultural college, and 3) the management of a complex organization such as a university. The topics covered in university administration were comprehensive, such as general organizational structure, curricula and instructional approaches, the organization, promotion and conduct of research, planning and budgeting systems, faculty salary, and tenure and evaluation procedures. The observational tours, begun in 1983 and continued into early 1986, included the present Director General and Deputy Director General from UCR, also the Director and Deputy of ENSA. The timing of tours for some of them was connected to presentation of papers at conferences.

By mid-1984 the UF team was ready to respond to a revision of the academic organization and administrative structure at UCD, and prepared a series of papers to be discussed at an administrative retreat held in October 1984. Top and middle management personnel from UCD attended the retreat. Topics presented included academic administration, admissions, departments, library, research and extension administration, curricula, service functions of the campus, faculty rewards, etc. The discussion papers contained organizational charts depicting suggested administrative structuring of UCD based on generally held management concepts in administration of higher education and business administration. Management "principles," if followed and implemented, were intended to bring about an effective and efficient operation of an agricultural university. In this context the UF team described features of the Land Grant university model, but were careful to distinguish between its development in the U.S. and an adaptation to Cameroonian conditions. Some of the general concepts presented on the "Land Grant" terminology were the formulation of mission-oriented goals, use of problem-solving applications, practical and "hands-on" education and training, provision of service to users and so forth.

Following the retreat, the Director General presented many of the issues and recommendations to the Faculty Assembly with follow-up discussion on selected topics referred to appropriate faculty committees. The COP remarked about the November 1984 General Assembly meeting: "Faculty input and involvement in the process were new and valuable experiences. I think it will open communications between faculty and administration that have been lacking."

A proposal to organize the department as the basic academic administrative unit of UCD, was an immediate result of the preceding deliberations. Faculty trained in related disciplines were placed in one of the nine departments.

Another important outcome of the retreat was the drafting of a text for a Presidential Decree (still under consideration) which recognizes the particular national mission of UCD in teaching and training of agriculturalists, and in research and extension. An administrative division for research and extension is provided in this text. The proposed decree recognizes a three-fold governance of UCD: the administration, the faculty Assembly and a Council of Professors (this includes department heads). The concepts of administrative structuring for UCD as suggested at the retreat by the UF team were adopted.

On other administrative actions in the PP to be initiated by the UF team, the USAID Project Officer reported in his October 1985 trip report that a faculty and a student handbook and faculty job descriptions incorporating teaching, research and extension principles were all in a developmental stage. The UF team confirmed that to date these activities had not proceeded beyond the developmental stage.

Conclusions

Working collaboratively, the UF team and UCD administration (Director General and officers) were instrumental in fostering an acceptance by key policy makers of GRC and the UCD faculty of the principle of UCD's mission as an agricultural university, and one which integrated teaching, research and outreach activities (in essence, descriptors of the Land Grant model). This may be among the most significant outputs of the project to date. The acceptance was accomplished through individual and group participation; e.g., the observation tours and the campus deliberations, but the final decision-making was Cameroonian. As observed during the interview process, this acceptance of UCD's mission appeared to have been a genuine expression of interest. Where reservations were posed, they were directed to the question of how the integrated activities would be carried out at UCD and with relationship to agencies such as MOA. In the latter case, it was reported that there was still a sensitivity among MOA field staff on the role of extension.

To illustrate the progress UCD and the UF team have made toward output one and what remains to be accomplished, a planning and management chart has been prepared (see Annex A). In this chart the premise is that institution-building such as that of UCD is a long-term planning process and is facilitated through several concurrent and ongoing management steps: planning, organizing, implementing and controlling.

In the planning function UCD now has a comprehensive, long-range master plan of development. This plan incorporates curricula revisions and facilities expansion and improvement with substantial financial support and other in-kind resources. This comprehensive planning process should be continued and institutionalized. What was superficially addressed in the master plan document was research and the demonstration farms. Because faculty are primarily involved in these types of activities. These activities may be included within the academic program.

The organizing function has been essentially achieved. There is recognition of UCD's mission as an agricultural university. A revised academic and administrative university structure has been put in place, awaiting formal status through an official decree. The reorganization of UCD includes a division of research and extension. A departmental organization was established. The role of faculty and administration in shared responsibility for governance of UCD has been strengthened, with open communications and permanent deliberating bodies. The outlining of responsibilities and delegation of authority among line and staff at UCD are in the process of review and implementation.

The implementing function is the step at which the project will be directed over the next two years; i.e., in operations (university, departmental and office policies and procedures) and personnel development (training and skills improvement). The final management function is controlling. This function is an evaluation of the success of the other three functions toward reaching the goals of the institution, achieving results or productivity, and maximizing the process of achieving results and reaching institutional goals. As this latter function is reviewed over the next two years, the test will be to assess whether there has been the building of an effective and efficient agricultural university and whether administrative/management mechanisms have been set firmly in place to sustain a well-run and productive organization.

Among remaining tasks to be accomplished, there was consensus among UCD administrators to move ahead with developing job descriptions, operational manuals, and in-service training for improvement of management skills and office procedures. One Director remarked: "an academic degree does not prepare one for being a manager." UCD administrators acknowledged an inefficiency in operations during the transitional stage of the campus. Their desired goals for the in-service education of their employees were 1) to increase their work competency levels, 2) their capacity to work independently, and 3) to improve the overall productivity of UCD.

Recommendations

1. The UF team should continue dialogue with UCD faculty and students and with GRC officials on the concept and role of UCD as an agricultural university with integrated teaching, research, and outreach functions.

The task may be undertaken through seminars and workshops on the theme of the "next steps or phases of UCD development", giving attention, for example, to areas needing focus such as research and outreach and use of the demonstration farms. Another approach to illustrate the concept is to continue the earlier observation tours to U.S. universities, or alternately to include visits to agricultural universities in Latin America or India, for example, for observation of third country experiences. It is advisable that department heads be given priority status to participate in the tours since, organizationally, the department is a recent addition to the middle management level of the UCD structure.

2. The UF team should progress in developing guidelines for the drafting of job description statements by UCD department chairs and academic and administrative support offices.

This is a first step to systematize the process of performance evaluation. Because work is already underway on this activity, the task of job description statements should be completed and the job descriptions in use by the start of the next academic year.

3. The UF team should progress in the collaborative effort with UCD to complete a faculty handbook, a student handbook and a university catalog.

These types of materials are very important sources of information about the institution and its policies and procedures. Since these materials are also stated as being in a developmental stage, the task of completing a draft of all three manuals should be completed no later than the start of the next academic year. This timing will ensure that the manuals are ready for review and approval and subsequent printing in 1988. Because of the usual content and/or size of these types of manuals, (and these will be the first such documents for UCD), it is anticipated that more time will be needed to complete the drafts and revisions.

4. The UF team should initiate with UCD the drafting of manuals on standard operating procedures and policies for departments and offices.

The PP provides examples of the types of manuals to be developed, but these examples should not be interpreted as inclusive. The UF team, in conjunction with UCD, should determine the appropriate organizational needs for manuals and the priority sequence of their drafting. This is likely to be a two year process before all manuals are in use. However, the drafting of manuals may be accomplished by the start of the next academic year since some manuals will contain prototype text usable in a number of other areas.

5. Management training and improvement of office skills should begin as soon as possible. UCD and the UF team should decide upon those individuals to receive "on-the-job training", the composition of training programs, an allotted time sequence, and the instructor(s).

Short-term consultants and the UF team may be considered initially as the major resources for this task, along with participating UCD staff. In some cases, it may be determined that selected UCD personnel should be sent on short-term travel to observe and study comparable office structure and operations at U.S. universities or those of major developing countries, for subsequent adaptation at UCD. These individuals in turn could be used to assist in training of other UCD staff. The type of individuals suggested by UCD for the out-of-country travel was at the middle management levels, usually long-term employees who were heavily involved in daily management activities.

6. A problem UCD recognized with a skills improvement program was retention of trained non-professional personnel. UCD would need to address the feasibility of an advancement and salary scale ladder competitive with the private sector. The scope of this activity suggests that it be extended over a two year period.

7. Create a new UF technical assistance position for administrative assistant to the Director General.

The purpose of the position is to assist the Director General in improving the productivity and efficiency of his office and to assist in on-the-job training of office staff. This is a positive management step and should be filled by April 1987 and continue to the PACD.

8. OIP/UF is reviewing the literature and instructional aids available on the training of trainers for possible application in the field. This effort should be pursued as it may be of use in the effective training of UCD personnel to provide the long-range in-service training needs after the life of the project.
9. The regularly scheduled administrative meetings between UCD, USAID/Cameroon and the COP should be continued. When topics on implementing research and outreach activities of UCD are considered, the composition of the group should be broadened to include representatives from MOA, MOL, MESRES, IRA and IRZ as appropriate
10. Every effort should be made by UCD to expedite the issuance of the decree authorizing revision and restructuring of administration and curricula to accommodate the replacement of IA and IT programs with the BS degree equivalent program.

OUTPUT NO. 2: CURRICULA DEVELOPMENT

Project Strategy

As stated in the introduction, the University Center at Dschang (UCD) was authorized by GRC Decree in 1977 and was to encompass two university level institutions; the Institut des Techniques Agricoles (ITA) which was created and placed under UCD the same year, and the Ecole Nationale Supérieure Agronomique (ENSA), which had its origin in 1960 at Nkolbisson near Yaounde and became part of UCD in 1978. However, it did not physically move to the UCD campus until 1985.

The Institut des Techniques Agricoles (ITA) consisted of a three year university program leading to the graduate designation of Ingenieur des Travaux (IT). The Ecole Nationale Supérieure Agronomique (ENSA) consisted of a five year university program leading to the graduate designation of Ingenieur Agronome (IA).

It should be noted that a two-year diploma granting vocational program for technicians is also located on the Dschang campus.

It is government policy to employ all graduates from both institutes. The Ingenieures des Travaux were placed in civil service positions such as farm plantation managers. The IA graduates were placed in the highest entry level of civil service as managers, planners and researchers.

ENSA and ITA were administered by their own directorates who were responsible to the Director General of UCD. Problems soon developed in the instructional programs in that the same professors were teaching at both institutes. There were difficulties in course scheduling and in maintaining a logical sequence of course offerings. Many of the courses were duplicated as were also the administrative services such as accounting, registration and scheduling.

Admission to the IT and IA programs was based on highly competitive examinations. At the outset, of the 2000 applicants qualified for admission, only the top 50 were selected for the IA program at ENSA, and the next 100 for the IT program at ITA. Once students were selected there were no effective provisions for transfer between programs, nor was there much competition between students once selected.

At that time there were 55 fulltime faculty and staff at UCD who taught more than 250 separate subjects. This included some administrators who did some teaching. In addition, about 80 part-time teachers from outside taught courses periodically. Many of the teachers were teaching out of their fields and had very limited agricultural experience, consequently they lacked an orientation to practical problem-solving instruction. Most teachers taught strictly by the lecture method, relying on the students taking notes and memorizing for exams. Teaching methods and course outlines were seriously out of date and rarely related to agricultural situations in Cameroon. There was generally an imbalance between theory and practice. Agricultural courses generally require adequate practical training to complement theoretical classroom instruction.

Implementation of Strategy

With this descriptive background of the newly created agricultural university at Dschang, the UCD leadership proposed and pushed for a merger of the two existing university programs into a 4-year BS degree equivalent granting program. The UF Team collaborated closely with UCD in promoting and accomplishing this merger.

One option in accomplishing this objective was to develop a comprehensive and improved curricula. Improvement would be made so that the revised curricula would:

1. Contain a 2 year common core of courses and use a variety of instructional techniques and materials to supplement the lecture method, such as audio-visuals, statistical services, workshops, practical field research, laboratories and intern programs.

2. Place more emphasis on use of the library and more closely relate science, mathematics, and other basic general education subjects to the agricultural content of the curriculum.
3. Include some training in administrative and management procedures and practices in the core curriculum and further training in this area in the last two years of the advanced program.

The UCD faculty, in collaboration with the assistance of the technical assistance UF team, would produce detailed curricula for the various specialties, syllabi for each course, audio-visual instructional materials, laboratory manuals, and textbooks where necessary.

Work on specific courses was done by small groups of two or three, with larger working groups serving a review function. Long-term and more specialized short-term technical assistants were provided by the UF Team. Work on revising the curricula began at the onset of the project, and aimed for completion in time for the start of academic year 1986-87.

The Agricultural Economics Department plans to introduce courses in the next few years which will provide an agri-business option. Because of construction delays and the early implementation of the four-year BS program, it was found desirable to begin the revision process on an individual course basis and progressively develop course syllabi as each curriculum was implemented. This would immediately improve the quality of education for students entering the four year program. As new facilities become available, syllabi can be revised to take advantage of them. Faculty returning from graduate study can be counseled by department coordinators and technical advisors on development of courses to be taught and preparation of course outlines.

Curricula Revision Accomplishments. A big problem has been the exceedingly large classes. In some of the new construction, smaller class spaces are planned for certain courses. Large classes may be divided into sections.

Curriculum changes, although recommended in the arrêté, tend to obscure the fact that, collectively, many years of teaching experience on the part of educators led to the strong recommendation for curriculum changes that were proposed in the arrêté.

Interviews with UCD faculty and Ministerial officials verified the fact that the "Land Grant" concept has been accepted. They generally agreed also that courses in the past were too theoretical and that more laboratory and field work are needed.

Some specialties e.g., agricultural economics and agricultural engineering are well advanced in curriculum development. Others are still in the process of developing a curriculum.

The common core of courses and merging of ITA and ENSA into the 4-year BS degree equivalent program. Fortunately, collaborative efforts of UCD and UF were successful in gaining acceptance of the idea of offering a common core of basic courses for all students for the first two years, followed by two years of specialized training in a selected discipline. Accordingly, plans call for the 3-year ITA and the 5 year ENSA programs to be phased out and replaced by a 4-year BS equivalent degree granting program. Additionally, the UCD will install a 2-year MS equivalent program which will admit approximately 50 students per year. The program and courses will be determined at a future date.

The common core two-year curriculum was recommended in an arreté from MESRES in March 1986. The arreté also proposed the introduction of the 4-year degree granting program with six broad specialities designated, and the possibility of adding other specialities as the need arises. The six broad specialities are:

1. Crop production
2. Animal production
3. Forestry
4. Rural engineering
5. Agribusiness
6. Rural Education and Extension

The arreté also emphasizes that teaching objectives are designed to: (1) provide a harmonious level of scientific, technical, and professional knowledge; (2) develop professional abilities to manage and adapt to many existing and developing problems; (3) develop enthusiasm and means to improve individual ability for expression, both written and oral, and of preparing documents, communicating, and making decisions.

Moreover, it was recommended that teachers judiciously and appropriately use educational teaching aids, such as:

- Practicums in the laboratory and in the field.
- Subject matter developed by teachers.
- Individual projects, case studies and reports.
- Conferences and seminars.
- Apprentice work in a professional environment.

Regarding this last item, the arreté encourages cooperation of the Ministry of Agriculture and the Ministry of Livestock, Fisheries and Animal Industries, and of all other ministerial departments that are capable of accepting and placing students under their supervision in rural development organizations.

This comprehensive arreté also identifies the school year as consisting of two semesters of 15 weeks each, from middle of September to middle of June.

The arreté states that each subject taught shall include continual evaluations or tests and a general examination at the end of the semester. Evaluations will also be applied to practicums, individual projects, field trips, conferences and seminars. Periodic examinations or tests will contribute 50 percent of the grade and the final exam will make up the other 50 percent.

Grading and Test requirements. Admission to the next higher school year will require an annual average grade of at least 10/20 in all subjects and an overall average of 12/20. A student having obtained a 12/20 average will be admitted to the higher class but must retake the subjects in which he did not get at least a 10/20 as an average for the year. In some cases a student failing to achieve a 12/20 average may request a review and decision from a hearing panel. A student would be limited to only one hearing during the 2-year common core curriculum. Likewise a student could only repeat a year one time and the score cannot exceed 12/20 for the work repeated.

Admission to the specialized options will be pronounced by the Director General according to the needs for workers, possibility of placement and academic performance of the candidate at the end of the two year common core program.

Department of Basic Sciences. A Department of Basic Sciences was recommended because students of agriculture must have training in basic sciences since applied agricultural courses require training in mathematics, chemistry, physics, zoology, and geology as a necessary foundation. A department of Basic Sciences was proposed within UCD to meet this requirement.

Courses in sociology and language are often included in foundation courses for agricultural students and in some institutions orientation courses acquaint students with governmental goals and policies for the agricultural sector so that students understand the contribution they will be expected to make to the country's development.

Students matriculating to the university must receive their basic science courses at UCD. It is important that the university give these students quality instruction in the foundation courses.

During the past two years, the UCD has formed a Basic Science Department, which never existed previously at this university. Presently, there are 4 PhDs and 2 MS faculty in place. Another 3 PhDs and 1 MS candidate are being trained under the participant training program. This cadre will give UCD a strong faculty in the basic sciences to support both academic and research programs.

Suggested Improvements in Teaching Techniques. The UF Team has proposed that all syllabi and manuals be reproduced prior to the beginning of each course and given to students enrolled. This procedure was recommended as being beneficial to both students and teachers. Students will benefit by being informed on course objectives, which should give them an understanding

of the knowledge and skills they are expected to acquire in the course. References pertinent to the content of the course, and available in the library, can be cited for independent study by the student. Manuals can contain illustrations, diagrams and tables, thus alleviating the problem of students in large classes being unable to see illustrations usually placed on chalk boards. Laboratory exercises outlined in a manual will help the students make the transition from theory to application.

Faculty will benefit from the thought processes required in organizing and presenting material in a logical sequence and designed to meet the educational objectives for each course.

Administrative personnel, and particularly department chairmen, will have the opportunity to evaluate course content presented under a given course title. Since course outlines organize materials for presentation by class periods, total contact hours required to meet course objectives can be accurately determined in advance, thus facilitating scheduling of teaching and classroom space.

Interviews with UCD faculty members verified that improvements in instruction have been readily introduced by teachers and gratefully accepted by students. Improvements have been noted in the introduction of more pertinent subject matter, better teaching methods, use of practicums, and modification of examinations and grading practices. Moreover, student evaluations of teachers have been introduced, thus providing guidance and incentive for teachers to improve teaching techniques.

Although efforts are continuing to bring about improvements in instruction, some problem areas mentioned by the faculty as needing attention include: size of classes are too large, class periods too long, practicums are inadequate or inappropriate, examinations are too subjective, class scheduling and course sequences need continuing adjustments and class discussions are to be encouraged.

In addition, it was noted that selection of teaching assistants might be improved if UCD faculty could have an input in the selection. Some assistants were excellent; others were characterized as too young, inexperienced, and their tours too short to be effective. Likewise, doing away with adjunct teachers will improve instruction and student morale.

Regarding the problems mentioned in the preceding paragraph, it should be noted that use of teaching assistants and adjunct professors is a temporary expedient which is being resolved as participant trainees return.

Instructional Support Facilities. To encourage productivity and efficient use of the faculty, the university must provide the necessary support. This means that there must be adequate secretarial support to type and assist with the development of syllabi, manuals and copy suitable for reproduction.

The cooperative effort of UCD and UF has resulted in impressive progress in providing instructional support facilities. These efforts are most evident in developing the Media Center, the Teaching Resources Center, Library, and Language Laboratory.

The Media Center. The Media Center is located in the first floor of the ITA Administrative Building on the lower campus. It will include a production and printing shop for producing publications, also a photography laboratory and dark room. Equipment will include reproduction cameras, IBM computer and Word Processor, offset press, printing press, binding machine, stitching machine, stenciling machines with lettering in both French and English, and a copier. Personnel to operate and manage the installation will also be provided. Currently the media center is not operational. Only part of the equipment has been installed.

Teaching Resources Center. This is a repository for teaching materials, including equipment and supplies of projectors, films, video tapes, slides, transparencies, microscope slides, models, plaster mounts, charts, maps, and audio-microphones. Where appropriate, these are cataloged.

An audio visual laboratory and a technician were introduced into the Teaching Resources Center by the UF team and UCD. Additional equipment is being purchased to meet faculty needs and to support objectives of the new curriculum as it develops and evolves.

A technician maintains the teaching equipment in good working condition and accountability is maintained by a check in and check out system whereby faculty and others must sign for equipment.

Teaching support materials have been cataloged by faculty and collated by discipline. Many of these materials will support laboratory exercises and lectures in the first year of the four year cycle. There are also a number of materials being made available through UF. For example, teaching materials, references, etc., sent by Florida to support teaching assistants, will remain at UCD and should be added to the catalog of support materials available. UF shipped 2300 color slides and a number of slide and tape sets to UCD. To encourage use of these materials, tape players, slide projectors, extension cords, and portable screens are made available at the Teaching Resources Center. Classrooms have had electrical outlets and window shades added to accommodate use of these aids.

Efforts are continuing to procure more teaching aids for each of the disciplines represented at UCD. At the present time, more materials are available for the basic sciences simply because, on a national and international basis, more materials have been produced for basic science courses. The recent, large order that was placed includes teaching aids for all disciplines and will augment considerably the instructional materials available to all UCD faculty members.

Sources of equipment and names of distributors are constantly being sought to facilitate procurement of teaching aids. Suggestions and ideas to improve the TRC operation and to encourage faculty use of instructional materials are constantly invited.

Library. Unexpected delays in the overall construction of campus facilities made it necessary to develop an interim functional library. At the outset, there were 1500 volumes of ENSA books and 1000 volumes of ITA books, also a number of journals, all waiting to be classified for use by students and faculty.

Through the cooperative efforts of the Director General of UCD and the Florida Team, arrangements were made to employ a librarian on the design team. The librarian began a TDY technical assistance tour in the summer of 1984 for the purpose of identifying needs for an interim library.

The Director General was able to obtain investment budget funds to build an interim library on the lower campus. This library will continue to serve the Technician's Program after construction of the main library on the upper campus is completed.

UCD had problems purchasing books, laboratory equipment and other teaching support materials with local currency, when payment was to be made in dollars. The possibility of using money in the project loan fund for these purposes was discussed with USAID. It was agreed that this was a proper use of loan money, and the funds were formally requested from the proper Cameroon Officials by the Director General. Subsequently, \$370,000 was drawn against the loan, and acquisitions of books and materials for the interim library began.

When developing the 1985-86 plan of work, it became apparent that the library would require a technical advisor to train library personnel and make the library functional. The position was approved and a technical advisor was hired. This individual arrived 28 July 1986 to begin the monumental task of cataloging and shelving new acquisitions and books received from the old ENSA and ITA libraries. During the 1985-86 academic year, an assistant was employed by UCD to begin supervision of personnel and begin library operations.

It should be noted that when the librarian was at UCD on TDY, a 12 page summary of recommendations was developed, outlining in detail the functional needs to provide an efficient and effective university-type library. The recommendations emphasized organizational and operational requirements including administration, finance, personnel, acquisition, client servicing, equipment and supplies, as well as job descriptions and qualifications for operating personnel and security staff.

In March 1986, a library update brochure was distributed to faculty members and also posted for students' information, calling attention to library policies and procedures. It explained how teaching materials and references could be put on reserve for student use. It also included an

outline of the Library of Congress classification system used in cataloging books, and a partial list of journal holdings. A quarterly library report indicated that, for the first three months of 1986, attendance numbered over 4000, over 400 books were borrowed and about 200 memoires consulted.

The CORE library is now in place. Books, cataloged and shelved, are available for use. Teachers of courses beginning the four year curriculum should have access to references pertinent to their courses in time to incorporate student assignments into their course syllabi.

Language Laboratory. Since UCD requires students and faculty to be bilingual, a language laboratory that could serve both the Francophone and Anglophone groups at the university was essential.

In late 1983, the Director General asked the University of Florida to investigate the possibility of buying and installing a language laboratory. UF secured brochures describing equipment for language laboratories from U.S. and Swiss companies. Advertising materials were reviewed and inquiries made. The Director General requested release of money from the loan with which to purchase and install the language laboratory. This was accomplished by June 1984. Bids were called for and the low bidder was a Caliphone dealer in the State of Florida. Unfortunately, after the bid was awarded, a controversy ensued over terms of the contract as the dealer insisted on an increase in the price. Following lengthy negotiations and delays, legal action was taken to enforce compliance. The dealer finally filed for bankruptcy. The caliphone manufacturer, however, decided to honor the bid after all.

The equipment arrived August 1985, and was installed and tested by a contract engineer for Caliphone. Workshops on use of the laboratory are presented periodically.

Participant trainees are encouraged to visit the laboratory and listen to tapes provided by USIS to improve comprehension of American English before enrolling in U.S. universities.

A report on use of the laboratory in the 1985-86 academic year contained 13 pages of information on policies and procedures, as well as guidelines for effective utilization of the facility.

Conclusions

Accomplishments in curricula development may be summarized in the following statements.

1. The proposed merger of ENSA and ITA programs into a 4-year BS degree equivalent program has been recommended in an arreté. The transition was proposed for the beginning of the 1987-88 school year.
2. New and revised curricula are being developed. Considerable progress has been achieved.

3. A 2-year common core of basic science courses is being planned.
4. Introductory courses in administrative and management procedures and practices are to be included in the core curriculum.
5. The UCD faculty and the UF Team have collaborated through conferences and work groups, to develop curricula for the various specialties.
6. Plans have been developed to reduce class sizes by dividing large classes into sections.
7. Curricula revisions have been recommended as demonstrated by the arrêté issued by MESRES in March 1984. It proposes the adoption of a 4-year BS degree equivalent program to replace the ENSA and ITA programs. It also suggests the adoption of the 2-year basic core curriculum.
8. The arrêté emphasizes the introduction of practical training exercises and suggests improved teaching techniques and development of communication and administrative skills.
9. Obviously, development of essential facilities is progressing. More facilities are planned, and construction, which has been delayed for several years, because of architectural and engineering problems, is about to begin anew. The Master Plan has finally been approved by all governing agencies and the next phase of construction should be completed within 2 or 3 years.
10. Currently, some structural facilities are inadequate. More dormitory spaces are needed along with smaller classrooms, more laboratories, conference rooms and small assembly rooms to accommodate visiting farmers for short courses and demonstrations.
11. The collaborative efforts of UCD and the UF Team have resulted in impressive progress in providing instructional support facilities; namely, the media center, the teaching resources center, a library and a language laboratory.

Recommendations

1. Continue to improve sequence of course offerings and course scheduling; also to improve curricula consistent with needs and recommendations suggested by a curricula review committee.

A series of curricula developing conferences involving working groups composed of UCD staff, user groups, and representatives of organizations that hire UCD graduates could help determine curriculum changes based on perceived needs. This will determine the areas of curriculum specialization needed to produce a graduate skilled in agricultural techniques who is motivated to apply them in the field, thus serving the private sector as well as the public sector.

2. Replace adjunct teachers with full time teachers as quickly as possible to facilitate scheduling of courses and improve student teacher relationships.
3. Continue to monitor and revise course outlines to assure that agricultural courses include adequate practical training to complement theoretical classroom instruction.
4. Continue to introduce subject matter that is more pertinent to Cameroonian agricultural development, emphasizing production, marketing and storage.
5. Conduct workshops demonstrating methods for effective teaching, preparing exams and testing results.
6. Conduct seminars wherein students are required to report on practicum exercises.
7. Continue to promote student evaluations of courses and instructors.
8. Continue to improve class schedules, length of class periods, and size of classes.
9. UCD should explore the possibility of finding qualified Cameroonians to serve as temporary teaching assistants, and call upon UF Team assistance only as a last resort.
10. Implement peer evaluation procedures as a basis for awards and promotions.
11. Establish policy and goals for allocating faculty time for teaching, research and extension.
12. Continually develop and improve practical exercises and field work.
13. Make the Media Center operational as soon as possible. This will facilitate all kinds of publishing and communication among faculty, students, administrators and communities.
14. Provide in-service training to Media Center supervisors and technicians.
15. Continue to add to the supply of materials and equipment as needed to reinforce teaching effectiveness.
16. Encourage faculty members to assign student exercises requiring the use of library references. This is a first step in developing student research skills.
17. Continue book and journal acquisitions for the library. Also provide in-service training for library personnel.

18. Since students and faculty are required to be bilingual, a class period or part of a period, each day should be assigned to students to practice and improve fluency in the second language.

OUTPUT NO. 3: UPGRADING FACULTY AND STAFF

Project Strategy

The Project Paper calls for expanding and upgrading UCD faculty and staff to bolster the instructional program, conduct research, aid in administration, and help provide support services for the academic programs.

The Project Paper also states that training in the U.S. to the MS level will be provided for 55 faculty and staff and to the Ph.D. level for an additional three. This mix of training was to provide one Ph.D. to head each department. Other donors were to provide graduate training for at least 13 faculty members. By the end of the project, 75 percent of the part-time teachers will be replaced, faculty members will devote at least 25 percent of their time to research and/or outreach and extension activities, and the number of classroom preparations per week will be reduced. Teaching methods appropriate to the practical nature of the curriculum will be used.

It is anticipated that as participants return to UCD, in-service training will be provided by senior UCD staff and the UF Team. The PP calls for a total of six months of in-service training concerning teaching, research methods and extension techniques. In all cases, U.S. and in-country training will be practical and of a problem-solving nature.

Implementing the Strategy

Currently, about two-thirds of the way through the project, (November, 1986), a total of 35 trainees (participants) are in the United States at sixteen U.S. Universities (See Annex B). This includes:

- 19 Master of Science level, in the agricultural sciences;
- 2 Master of Science level, in library science;
- 11 Ph.D. level, in the agricultural sciences;
- 3 In English Language training.

Another twelve nominated faculty (all M.S. candidates) are being prepared (late 1986) at UCD, USAID and USIS before departure to the United States.

The number of participants was based upon predetermined staffing needs early in the project. There were unforeseen complications, however, because of ongoing teaching and staffing needs, and the problems of providing temporary competent replacements.

At this point, November 1986, only three participants have returned, and that has been within the past three months (two completing training, one unsuccessful in his Ph.D qualifying exam).

In early project development stages the field team had to spend an inordinate amount of time coordinating the participant training program, which slowed progress in other areas. The backstopping in Gainesville was improved by adding personnel who could administer both the training phase as well as the seminars and observation tours in the U.S. Another significant delay occurred during the first and second years when nominated faculty from ENSA were not released from their duties. The participant training program was initiated with the departure of three faculty members in 1983. Significant progress has subsequently been made in the selection and processing of participants.

While the UCD faculty studying in the U.S. seem to be making excellent academic progress, there have been some minor problems; i.e., one student is on academic probation and one returnee was not able to pass his qualifying examinations for the Ph.D. Several faculty with the general agriculture "Ingenieur Agronome" degree have been required to take up to a year of back-ground courses when entering specialized fields such as agricultural engineering, agricultural economics, and food technology. Some faculty have enrolled for four months of English Language training at the UF English Language Institute because they scored below acceptable levels on the Test of English as a Foreign Language (TOEFL) given in Douala.

The composition of degree candidates has changed significantly over the past two years of project implementation. Training in the U.S. was originally intended mainly as a Masters Degree program. The number of Ph.D. students has risen from three as described in the PP, to thirteen, with Masters degrees set at 39. The major reason for this change was to accelerate the capability of UCD to move selected departments toward the goal of offering graduate level degrees. Conferences were held between USAID and UCD to discuss the need for placing additional trainees in Ph.D. programs. It was agreed to be a justifiable change in priorities, and a change that could be accomplished without adding more money to the project.

Long-Term Participant Training. With respect to selection, most faculty came to UCD from ENSA. In making its selection of candidates for graduate study in the United States, UCD advertises for up to three or four positions per year and collects applications from the ten best graduates of ENSA. The applications of the top two or three first come to the Director General and are passed on to the Board of Governors and to the academic departments for further evaluation and recommendation. This procedure is then reversed back to the Director General for making the appointment. The same procedure is also followed for hiring faculty.

The UF team developed and currently is in the process of revising an information guide pamphlet (in English) as a hand-out to participants prior to their departure for the U.S. Participants are also shown films and videos and given additional information on American cultural and academic life by the UF team, USAID and USIS. Interviews with returned participants (only three have so far returned) revealed that the information they received on American social-cultural patterns was generally satisfactory, but the information they

received concerning their projected academic training was less so. They felt that they had been left out of the pre-planning stages of their own course of study. However, one trainee indicated that despite this lack of information prior to his departure, once on campus in the U.S. he had the opportunity to plan his entire degree program with his advisor.

Of the 15 participants at the University of Florida who were interviewed, all said they had been met at the airport upon arrival, taken to their hotels, and began formal orientation the following day. All agreed that the initial orientation and program guidance upon arrival in the U.S. had been well planned and most helpful.

Since Cameroon is a bilingual country, four months of intensive English language training should be sufficient time to gain proficiency. However, two of the returned participants disagreed and stated that they experienced varying degrees of difficulty with English language training at UF. One participant had to take extra months in order to pass the TOEFL. The other participant was able to pass within the four month period, but like his colleague he experienced problems with English throughout his academic study, particularly with lectures.

According to one participant, part of the problem was the clustering of Cameroonians who spoke English during the day but resorted to French at night. Another participant experienced no difficulty in understanding or using English after the four month training period. He did suggest that his class work would have been facilitated had he been able to do English language training at UCD instead of at Florida.

Monitoring is the process of following a participant's progress from the point of arrival in the U.S. to the point of return to Cameroon at the completion of training. The evaluation found that the contractor's procedures for monitoring training in the U.S. under this project conform to what AID recommends. The contractor has a good reputation in arranging individual training programs at the UF and other U.S. universities, and for maintaining close contact with the participants to help solve personal and academic problems. While the participants are in the U.S., the contractor sends class schedules and academic reports back to UCD in a timely manner.

Upon returning to their home country, USAID funded participants are required to report to the USAID Mission to undergo a debriefing and to fill out a returned participant questionnaire. They are also expected to provide USAID with a brief report describing their training experiences in the U.S. So far none of the three returned participants has visited the USAID Mission since returning to Cameroon. The reason they gave for not doing so was that they were unaware of the requirement.

Since returned participants have only been back on campus for less than three months, it is premature to raise the question of the level of impact their training had on their jobs. The three returnees said that they were just settling in and making the necessary adjustments to the many changes the university community had undergone during their absence.

Short-Term Participant Training. Most progress made in the area of short-term training has been in the form of weeks of in-country seminars, third-country courses and familiarization tours to the U.S. They are described as:

	<u>PERSONS PARTICIPATING</u>	<u>DURATION</u>	<u>SUBJECTS</u>
a. <u>In-Country</u>	All UCD faculty according to subject matter	1 Week	One week workshop on methodology and philosophy of Farming Systems Research for interested UCD faculty and Dschang-based IRA researchers.
b. <u>U.S. Familiarization Tours</u>	Ass't. Professor, UCD	6 Weeks	Extension Services Adapted for Developing Countries (at University of Illinois).
	Ass't Professor Plant Science Department, UCD	3 Weeks	To present a paper at the International Horticultural Science Meeting, Tampa, Florida, and visit several branch experiment stations within the Florida Experiment Station System.
c. <u>Third Country</u>	Instructor, UCD	4 Weeks	Post-Harvest Handling and Storage of African Food Crops. IITA, Ibadan, Nigeria.

Recommendations

1. That UCD and UF study the utility of providing some course work in administration and management for participants who are quite likely to be placed in administrative positions upon return to Dschang. This should be undertaken on a highly selective basis, because such additional courses will lengthen the stay in the United States and increase costs.
2. Alternatively, as a lower-cost substitute, or to supplement the above, the UF might arrange seminars at UCD in techniques of academic administration. A large group of participants could benefit.

3. Because adaptation of the Land Grant philosophy or model is so critical to the long range success of the project, and particularly so in research and extension, it is recommended that each faculty member attend short term seminars which address implementation problems of research and extension in developing countries. A number of U.S. Universities have such programs. An option is to develop the course as an in-service training program given at UCD.
4. For Cameroonian faculty who have not been participant trainees, it is recommended that in-service programs at the International Agricultural Research Centers, e.g., IITA, CIAT, CIP, IRRI, ICRISAT, etc, can be very useful.
5. The participant's major professor should provide the USAID Mission and UCD with a copy of the complete schedule of courses and a listing of academic requirements to be fulfilled for the degree being sought. This information should be provided at the beginning of the participant's course of study. This procedure should help clarify differences arising between the program of study outlined in the PIO/P and the participant's actual program of study.
6. As a reinforcement to the research training recently received in the U.S., UCD should assign each returned participant to an ongoing research project at UCD or encourage returnees to start such projects. We recognize that lags in construction of buildings and for the farm area will limit access to research facilities and land usage for some faculty, but sufficient work space/area should be provided to those in the agronomic, plant and animal science fields. Our concern is to provide special accomodation of their needs so that returned participants will not lose enthusiasm, skills and techniques learned, and revert to prior work habits. Because of the importance of developing and sustaining an organizational climate for research at UCD, attention has to be directed to skills reinforcement and motivation of faculty. This is an additional reason for expediting the construction of remaining facilities.

OUTPUT NO. 4: INTERDISCIPLINARY RESEARCH AND DEVELOPMENT PROGRAM

Project Strategy

The R&D program will be developed by the UCD faculty and staff with the assistance of the U.S. technical assistance team. It will: (a) support the instructional program, (b) contribute to faculty development, and (c) generate useful knowledge for development of the Cameroon agricultural sector. A Director of Research and Extension will be appointed who will have responsibility of forming a systematic R&D program operating through the academic departmental structure. Provision will be made for individual as well as departmental research. Procedures will be developed for identifying institutional research goals which will, in turn, contribute to and support national development goals. Individual faculty and/or departmental research will be chosen in order to contribute to the institutional research goal.

According to the Project Paper, new position descriptions will reflect the fact that 25 percent of the time of each faculty member will be devoted to extension or research. Annual evaluation of faculty will take into consideration research and extension activities.

The project will provide necessary facilities and equipment for the R&D program (see Output Nos. 6 and 7).

Linkage between the R&D and the instructional programs are built-in since the same people will be conducting both. The R&D program and its clients outside the university will be linked through three mechanisms:

- A research publication that will report on the R&D program and its findings.
- Participation of research clients in university committees and working groups which set the R&D agenda and review findings, and
- Through extension activities of UCD staff.

The technical assistance team will work with the UCD staff in developing the structure of the R&D program. Specialized short-term technical assistance will be provided where needed. Both short-term and long-term United States and in-country training will be provided.

Implementation of Strategy

Accomplishments in developing research and outreach capabilities have been modest, at best, because of the demands placed on the U.F. team and staff and on UCD in getting the academic program revised and functioning. This effort included the physical move of the ENSA program and faculty from Nkolbisson to Dschang. Likewise faculty who have been and continue to be away for advanced degree training are only starting to return to take up their responsibilities. With the return of these faculty it is expected that the level of research and outreach activity will increase appreciably.

As time and availability of appropriate equipment permit, research projects are being initiated in all departments. A farming systems project under the direction of the agricultural economics faculty was initiated at Bafou in 1984 by two French professors. It is a good example of integrated research aimed at analyzing the problems of a certain milieu in order to carry out judicious solutions to farmers problems. This year (1986) the Department of Rural Education and Outreach initiated a research project to identify problems at the farmer and village level which will not only bring out farmers' needs but also help to identify research priorities for UCD faculty. The project consists of visits to rural areas to talk with farmers in their fields about the problems they have in agricultural production. To date, the South West, West and North West provinces have been covered by the survey.

The fifth year of ENSA is, in effect, a training ground for student research in the form of memoir studies. As faculty must supervise these students it is felt by some that this work constitutes a form of research. The opinion was expressed that some memoirs are of sufficient quality to merit publication. For example, three memoirs were published in conjunction with faculty in the first issue of the UCD Research Journal. A former UF team member reviewed ENSA student memoirs and recommended that those of acceptable quality be used to develop outreach-type publications.

A member of the UF team is serving as Research and Outreach Advisor to UCD. He reported that in 1985 almost 30 research proposals involving forty of the 66 academic faculty members were funded at a level of 40,738,100 CFA. A UCD committee composed of department heads and outside representation - depending upon the subject under consideration - receives and reviews all research proposals. This body is chaired by the Deputy Director General. A call has gone out announcing the availability of another round of funding. The research budget for 1986 is 55,000,000 CFA. A representative of UCD is invited to meetings called by IRA and IRZ where national research priorities are discussed. It is assumed that research projects undertaken by UCD faculty address some aspects of the national research program.

UCD has agreed to consider collaboration with other institutions in the development of research proposals. In December 1986, a research team from Fort Valley State College (Georgia) will visit UCD for the specific purpose of discussing the possibilities for joint research.

Academics agree that the heart of a university is its library. A functioning library has been provided at UCD. The existing collection of books and documents, though small and in need of many additions, is being enlarged, cataloged and shelved for use by students and faculty. An especially valuable asset for research is the journal collection which numbers over 300. It is considered by the U.F. library technical advisor to be the most current in Cameroon. Examples of position descriptions assigning teaching, research and outreach responsibilities are in preparation for department coordinators and faculty members to follow in drafting their individual job descriptions. Progress of a highly significant nature occurred when faculty agreed to accept an evaluation program. Performance will be judged on the basis of quality of work in each area of assigned responsibility.

Funds are available for the procurement of laboratory and other research related facilities and equipment. Orders are being placed as specific needs are identified. The first issue of a research publication, the UCD Research Journal has been published. A member of the UF team serves as advisor to the editorial board.

In collaboration with UCD faculty and administration, the UF team has proposed a restructuring of the UCD organization to provide recognition and accommodation of the research and outreach missions of the University Center at Dschang.

Most outreach activities on the part of UCD staff appear to be encompassed in the contacts made by the faculty involved in research projects conducted at farmer locations. Farmers in the Dschang area are benefiting from having observed in past years the animal production programs carried out on the farm as a part of the UCD teaching program. This has been especially true in the case of poultry. There are over 13 major poultry production units in the vicinity of Dschang. Although not a specific outcome of this project, increased yields and income for coffee producers are reported to be the result of advice provided by extension agents to farmers through parastatals.

The participant training program is providing the means for advanced degrees for more than fifty faculty members. Several have completed their degree requirements and have returned to their departments.

Short-term technical assistance is being provided when and as needs are identified. In-service training is being provided in the form of seminars, symposia, conferences, and workshops. Attendance and participation in professional meetings is encouraged as one form of faculty development.

Conclusions

To provide a balanced report of progress made toward the achievement of project objectives, it is necessary to put into perspective what was observed and discussed. Those who are familiar with the history of the "land-grant" movement in the USA will readily recognize that the U.S. agriculturally oriented colleges did not immediately emerge with an in-place component for each of the teaching, research and outreach missions. What is in place today is the result of an evolutionary process dating back to the Morrill Act of 1862 when legislation was enacted which provided grants of land in each state for the purpose of establishing an institution of higher learning. Those institutions, like the University Center of Dschang, were charged with the development of a program designed for practical application of knowledge to the resolution of problems in agriculture and the mechanical arts. Again, like UCD, the first step was to organize and implement an effective program of instruction. It took almost a quarter century to recognize the need for a continuous flow of new information and knowledge that would come from research to undergird and stimulate the teaching program. Thus, the passage of the Hatch Act took place. Another generation and a half passed before there was sufficient demand for outreach to bring about the necessary enabling legislation in 1914 in the form of the Smith-Lever Act which established the Agriculture Extension Service.

Still another dimension entered this process in 1890 with the passage of the Second Morrill act which provided for the establishment of separate but equal land grant colleges for the black citizens of the southern states. These institutions suffered a bare existence until the passage of civil rights legislation in the mid 1950's. Since that time their progress has been enhanced with additional legislation and the the provision of substantially more federal and state funding. However, they too still have considerable distance to travel in order to achieve the same level of development enjoyed

by the so-called 1862 institutions. Some of these historically black colleges and universities (HBCU) have only recently been able to put in place their own research and outreach components.

At this point the University Center of Dschang has made creditable progress toward following the pattern set in the evolution of the US land grant concept by establishing a good foundation for its program of instruction. The advantage enjoyed by UCD is that the concept of integrating the teaching, research and outreach missions into one program has been clearly stated and accepted by the Ministry of Higher Education and Scientific Research along with the faculty and staff at UCD.

While major attention has been focused on the academic mission of UCD, modest progress on the establishment of the research mission is to be noted. An excellent beginning has been made in establishing the library as a research tool. Since a number of activities are in process, the degree of progress may not be as apparent or visible as is the case with the teaching program. Less has been achieved with the outreach mission, in part because of time but also because the research required to produce pertinent new knowledge has only recently been initiated. However, information contained in student memoirs, IRA and IRZ research reports and in the reports of international agricultural research organizations, where applicable, could be used in the preparation of farmer information sheets and bulletins. For example, a substantial reservoir of research information on African root crops is available from IITA, regional projects and USAID projects in the region and in Cameroon for translation into outreach-type publications.

If the outreach mission is to move forward more aggressively, it will be necessary to give it visibility through separating it in the structure from research and appointing a Director of Outreach who will function at the same level as the Director of Research.

The Extension Units of the Ministry of Agriculture and the Ministry of Livestock have established field organizations that work with parastatal and large farm enterprises. In order for the existing Extension personnel to more adequately serve the needs of the total farm population, including the subsistence farmers, of whom most are women, they are in need of new knowledge and in-service training. Logic would suggest that the faculty members of an agricultural university that integrates teaching, research and outreach are well-prepared to serve the educational role in outreach. These faculty would serve as authorities on technical subjects - in a sense as subject matter specialists. In this role they would provide such things as technical information, in-service training programs and diagnostic services to the current extension field personnel. Currently, at some locations IRA is using the Testing and Liaison Unit to demonstrate the applicability at the field level of information obtained through research projects. The T&LU program is conducted by a team which includes an anthropologist/sociologist, agricultural economist and an agronomist. Field contacts are always made through a local Extension employee.

Recommendations

1. It is recommended that the UCD administrators, with appropriate support from the UF Team, press for early approval of the proposed organizational structure and the appointment of a UCD Director of Research and Outreach. This should hasten the formation of systematic research and outreach programs. It will provide the structure in which procedures can be developed for identifying institutional research and outreach goals. Such action will help open direct channels to other research and outreach oriented agencies and organizations, thus providing UCD the opportunity to set forth its role in these two assigned missions.
2. It is recommended that since faculty have accepted the concept of performance evaluation it will be important to complete the job descriptions.

The extent of responsibility in teaching, research and outreach will be delineated. This process needs to receive continued support from UF team members and from UCD administrators.

3. It is recommended that assignment of research or outreach activities be based on departmental needs with the figure of 25 percent being used only as a departmental guide.

The project paper specifies that 25 percent of the time of each faculty member will be devoted to research or outreach. It may be neither practical nor advisable to set an arbitrary figure.

4. In an effort to enhance the implementation of the strategy on research and outreach, it is recommended that:
 - a. The UF research and outreach advisor continue working closely with counterparts on improving the quality of the UCD Research Journal.
 - b. Continued strong support be provided by UCD to the development of the library, especially as it relates to the research needs of the faculty. Specifically,
 1. A policy statement should be developed on the role of the library and its place in the organizational structure of UCD.
 2. A clear line of reporting and authority for the librarian should be set forth in the policy statement.
 - c. The UF team continue to work with UCD counterparts in identifying in-service training and faculty development needs as they apply to the research and outreach missions of UCD. It is suggested that representatives from HBCU and AACSB institutions be considered where appropriate as consultants to provide such training.

5. It is urged that some faculty, based on their interests and performance, be assigned to work with Extension as subject matter specialists and with IRA as members of the Testing and Liaison Units. UCD should consider its role in outreach to be that of provider of educational information and training principally to the existing extension personnel in the Ministries of Agriculture and Livestock.
6. It is recommended that a Director of Outreach be appointed. Such a position is needed if the role and function of outreach at UCD is to be addressed and an effective program developed.
7. Innovative interdisciplinary research and outreach linkage efforts are to be strongly encouraged by UCD administrators.

The Farming Systems Research and Extension Project at Bafou reaches an entire chefferie. Involved are 17 faculty, the delegate for agriculture, MOA, and about 50,000 people engaged in producing three distinct mixes of crops. It is an excellent example of interdisciplinary research and provides a good illustration of the outreach linkage concept.

8. It is recommended that a properly equipped facility be provided for plant preparation and analytical analysis in order to more adequately support agronomic field research.

OUTPUT NO. 5: LINKAGES BETWEEN UCD AND ITS CLIENT AGENCIES

Project Strategy

New linkages will be created between the UCD and the various agricultural support institutions, and existing linkages will be strengthened. The linkages will involve personnel of these institutions in broad policy formation of the UCD and will provide means whereby the UCD faculty can gain knowledge and understanding of their capabilities, needs and problems. This will also provide opportunities for UCD faculty involvement in extension and R&D activities and hence, a means of faculty enrichment.

Mechanisms will include an inter-agency committee for university oversight, seminars, workshops and conferences involving UCD faculty and agricultural support institution personnel, field site visits by UCD faculty and students, new off-campus centers for student and faculty use at the research stations at Ekona and Wakwa, and closer involvement of client institutions in planning and supervision of UCD student field experiences.

The U.S. technical assistance team will help the UCD faculty determine appropriate participation, plan initial activities, and participate as appropriate. Project funds will construct a student dormitory with kitchen and dining area and facilities for teachers at the Ekona and Wakwa off-campus center.

The outreach function of the UCD is viewed as part of its education and research program. As such, faculty participation in outreach activities will be included as one element of position descriptions and considered in faculty evaluations.

Implementation of Strategy

Linkages with respect to this project are viewed from these perspectives:

- UCD serving client groups such as IRA, IRZ, MOL and the Extension Unit of the Ministry of Agriculture and others as a supplier of trained personnel to staff those organizations, and
- Groups such as IRA, IRZ, MOL and the Extension Service, along with national/international organizations involved in plant and animal production research collaborating with UCD in the development of effective teaching, research and extension support programs.

From its beginning, UCD has been serving clients through the training of personnel who are ultimately employed by those clients. Under Cameroonian government policy all those successfully completing their studies at UCD are guaranteed employment in one of the agencies charged with responsibility for improving plant and animal agricultural production in the country. Although these linkages are in-place, it is important that efforts be exerted to maintain and enhance these relationships through frequent communication and consultation. An important way to do this is the development of linkages whereby those organizations can establish and provide reciprocal service. For example, establishment of national-level committees for research and outreach would be an important step toward providing a mechanism through which close ties might be maintained and nourished.

Numerous linkages have been formed and are being maintained with IRA, IRZ, parastatal organizations, Ministry of Agriculture, Ministry of Livestock, FONADER, cooperatives, regional agricultural schools and others. An additional linkage that should be made is with the USAID sponsored research projects being conducted in-country. Such ties where carefully developed and judiciously nurtured can prove highly beneficial to individual faculty effort as well as to institutional progress. Likewise such linkages can provide opportunities for students to serve internships, to gain on-the-job training and provide knowledgeable people as guest lecturers, seminar leaders, and in-service training activity leaders.

The linkages with IRA and IRZ are critical to the development of UCD research and teaching programs. The same observation applies to linkages with the Extension Service units in Ministry of Agriculture and the Ministry of Livestock. Such contacts have tremendous public relations value when properly utilized. Any organization established to serve a public need must be constantly aware of its role and obligations to that public. The development of a strong supporting network that tracks a diverse group of organizations, agencies and individuals is an essential tool to be used to insure its success.

Conclusions

Research Linkages: Since there are on-going programs of research in IRA and IRZ, the question of duplication of effort and territorial imperatives could be raised. The fact that UCD and these research oriented groups are within the same Ministry should help reduce problems of communication and understanding.

A National Committee on Plant Research has been established by IRA. It is essential that UCD work through the membership of this committee to insure that the role it plays will be in harmony with the research objectives of the nation and in support of its teaching and outreach missions. Hopefully, and where appropriate, faculty from UCD would work on specific projects with counterparts from other research units. Also, UCD students might be assigned as assistants or technicians on research projects that are managed by faculty from IRA and IRZ.

One way to help supplement the teaching program at UCD might be to invite scientists from the regular research groups, especially those located at or near Dschang, to participate as guest lecturers as a means of communicating results of their research to a very important group of clients and future professional colleagues.

Appointment to the UCD staff of a person with internationally recognized research credentials is a highly significant step toward the development of a strong research program and effective linkages with the Cameroonian national research enterprise. It also opens linkage channels with the international agricultural research centers throughout the world.

Information provided through interviews with the IRA unit at Dschang revealed a readiness on the part of the leadership and staff of that unit to have close institutional ties with UCD. In fact, UCD faculty are frequently invited to participate in seminars, field days and conferences held at the Dschang IRA facility. They are eager to see a strong two-way relationship developed wherein mutually beneficial outcomes would result. In fact, they visualize having the opportunity for (1) IRA staff to participate in courses at UCD, (2) UCD faculty to be involved in collaborative research with IRA scientists and (3) for UCD students to be involved as research assistants and technicians.

Outreach Linkages: A second and perhaps more highly sensitive factor to be addressed by UCD and its supporting agencies is the existence in the Ministry of Agriculture of an in-place extension program and a staff of over three thousand. So again the question of duplication of effort and territorial prerogatives comes to the fore. This constraint may be more difficult to manage than the research relationship because two ministries are involved. Thus the need for the establishment of close ties with the Extension Units of the various ministries.

However, since representatives of the Ministry of Agriculture have been involved in this project from its inception, the chances for friction would appear to be reduced. As noted in Annex H.2 of the Project Paper, an appropriate role for the UCD faculty might be with (1) in-service training for representatives of all the agencies that provide food production advice to the general public and (2) continuing education through media channels and to groups not now served by Extension personnel. In essence the UCD faculty would be serving in a role similar to that of the Subject Matter Specialist in the USA Agricultural Extension Services. In its Testing and Liaison Unit (T&LU) program IRA has an excellent example of an effective applied research effort. It employs the same techniques as those being used by UCD in the farming systems program at Bafou. The T&LU Program is based on the assignment of interdisciplinary teams to conduct on-farm demonstrations based on research findings at the IRA experiment stations. When such teams go into an area they are required to make contact with local Extension Service personnel and work through them with farmers. Also, as noted in annex H.2 there are such groups as small farmers, many of whom are women, that are not now being served. Determining how best to address this need could be an important topic on which faculty in the Rural Education and Outreach Department of UCD could join hands with Extension Service colleagues.

At any rate there appears to be a need for an appropriate high level discussion group with representatives from UCD and the Extension Units in the various Ministries. The Extension Service tie to the University faculty is extremely important as it is through such an arrangement that UCD faculty can be quickly alerted to citizen needs requiring research effort. Thus the cycle becomes complete -- new information is developed, it is shared with various publics through formal instruction in the UCD classrooms and through outreach to the lay citizenry -- extension brings back to the University questions and problems needing resolution through in-depth study (research).

Another important function that can be provided to the Extension Service by UCD faculty, as an outgrowth of a healthy, effective linkage relationship, is the preparation of publications and other educational materials for distribution through the established Extension Service channels. The basis for these materials can be knowledge generated through research projects they and their colleagues in IRA and IRZ conduct. An excellent example is a program recently initiated (1986) by the Rural Education and Outreach Department. They are working with IRA colleagues at Ekona and Njombe to translate research results into Extension Bulletins for farmers. The team comprises an Outreach Rural Sociologist and a Plant Pathologist from UCD and an Agronomist and a Plant Breeder from Ekona and Njombe who are working on root and tuber crops, such as cassava, yams, potatoes and cocoyams. Other examples include the dissertation studies conducted by two of the faculty members who are participant trainees. One study is on Women in Production which entailed many interviews with women farmers in the South West Province. The other is on linkages between farmers, researchers and Extension Service agents in the West Province (maize and coffee producers). Several hundred interviews were conducted in order to provide the data. Such linkages should prove highly productive and are to be encouraged. A review of

recent research conducted by IRA AND IRZ would surely reveal additional information that could and should be placed in the hands of existing Extension Service personnel. This could be prepared in the form of bulletins and fact-sheets for easy distribution. Still another excellent source of information is to be found in technical papers published by the international agricultural research centers and other research colleagues throughout the world. Of course this presupposes the availability of, and ready access to, current issues of journals, periodicals and technical papers from the appropriate International Agricultural Research Centers such as CIAT and IITA where extensive work has been done on cassava, and at CIP which concentrates on potatoes.

A concluding note on this output is that the linkages described must become operational if the objectives of this project are to be achieved. In order for them to become operational, extraordinary effort, diligence, dedication and commitment are required to promote the concept of the intertwined and supportive relationship of teaching, research and outreach as a means through which food production can be improved in Cameroon.

Recommendations

1. Develop at UCD ways to nurture and enhance the linkages that exist with all the agencies and organizations that provide employment for UCD graduates.
2. UCD should consider delaying the construction of off-campus center facilities at Ekona and Wakwa for students and faculty until program relationships of UCD with IRA and IRZ have been clarified. This is a matter that should be considered under output No. 7.
3. Organize UCD faculty committees to develop and implement activities that will insure close, effective, collaborative working relationships with all groups where linkages have been established.
4. UCD administrators and faculty should develop such additional linkages as will be beneficial to the enhancement of the teaching, research and outreach program.
5. In an effort to sensitize participant trainees to the importance of the linkage concept, it would be useful for each one to have a short-term training experience with an Extension Service counterpart at the U.S. university that is providing the degree program.

A National Committee on Plant Research has been established by IRA. It is essential that UCD work through the membership of this committee to ensure that the role it plays will be in harmony with the research objectives of the nation and in support of its teaching and outreach missions. Hopefully, and where appropriate, faculty from UCD would work on specific projects with counterparts from other research units. Also UCD students might be assigned as assistants or technicians on research projects that are managed by faculty from IRA and IRZ.

One way to help supplement the teaching program at UCD might be to invite scientists from the regular research groups, especially those located at or near Dschang, to participate as guest lecturers as a means of communicating results of their research to a very important group of clients and future professional colleagues.

OUTPUT NO. 6: DEMONSTRATION FARMS

Project Strategy

Three demonstration farms will support the UCD instructional and R&D programs. They will also produce food for the students and feed for the farm stock.

An experimental farm of approximately 100 hectares at the new campus will support research, provide student practice plots, and contain production units for dairy, swine, poultry, rabbits and goats. The proximity to classrooms of the campus farm will allow students to follow growth cycles of plants and animals and to relate classroom work to field situations. The buildings on this farm are funded by the Belgian aid program. The AID project will fund general site preparation, fencing, and development of the student practice plot area.

A second farm will be developed at Bansoa to serve as a demonstration farm and for large-scale agricultural production. Mechanization and farm management will be emphasized. This farm will be a major source of produce for the UCD and will have approximately 50 permanent workers. The loan portion of the project will fund construction at this and the third farm.

The third farm, to be constructed at Djoutittsa, will serve as an experimental livestock unit. Emphasis will be placed on the development and demonstration of range management techniques, improvement of grazing lands, and development of dual purpose cattle and goats. This facility will be a training base for specialized research in animal production and for student summer field work experience.

Each farm will have a manager and a director of farms who will be responsible for developing all farms and integrating their activities into the UCD curriculum. They will work closely with the UCD administration and staff to ensure optimal contribution to student training and R&D efforts (See Annex H.2, Technical Paper.).

Implementation of Strategy

Three farms, one at Dschang adjacent to the UCD campus, one at Bansoa and one at Djoutittsa have been designated for use by the University for student demonstration plots, for faculty research and for food production. A minimum level of operation is being carried at the Dschang farm -- a few student plots, some research on baby chickens, the production of some broilers, swine

feeding demonstrations, some agronomy research plots, raising some rabbits and the care of two undernourished calves. Some maize and soybeans were grown at the Bansoa farm this year. That grain is being used to feed the animals at Dschang. Plans have been made for further activity at Dschang and for facility development at Bansoa and Djoutittsa.

Conclusions

Until there are significant improvements and someone is assigned to supervise the development of each farm, it will not be possible for faculty or students to utilize these areas effectively for the purposes intended. Present conditions at the Dschang farm set a poor example for visitors to follow. These conditions, along with lack of equipment, discourage faculty from trying to initiate research activities and set up student demonstration plots. What little contribution there is to student training at Dschang is indeed marginal. Problems of land ownership are reported to be a major constraint at the Dschang farm.

Recommendations

1. It is recommended that the demonstration farms be developed as quickly as is possible and practical. The development of these farms is considered to be a high priority in the UCD program. Perhaps the farm manager at one of the UF research stations might be selected to assist in getting this effort underway.
2. The UCD should employ a farm director-manager who would report to the Deputy Director General for supervision.

If there isn't a well-prepared Cameroonian available, an expatriate could be selected under whom a Cameroonian might serve as an intern or as an apprentice. Another possibility might be for a current or returning faculty member who has a strong interest in the farm(s) to be assigned to the position of farm director, at least until someone can be trained. Getting the farm program adequately organized and underway will require skills not possessed by many individuals. When a director is selected, that individual should be given some in-service training under the direction of an experienced farm manager at an agricultural experiment station in the USA. This is too important a task to be taken lightly. The UF team needs to provide thoughtful guidance as UCD seeks a solution.

3. Provision by UCD of technicians to support faculty is another important requirement if a research and demonstration farm is to function effectively. These people should have in-service training so they will understand the importance of the work assigned and the necessity for a well-disciplined operation. Here again the UF team can provide useful guidance.

4. It is important for UCD administrators and faculty to share and discuss with students and staff their expectations regarding the learning opportunities being provided as well as the care and maintenance of research and demonstration facilities and equipment.
5. It is suggested that each participant trainee receive short-term training experience working with a US research station farm manager. Such a program would provide these individuals with background sufficient to enable them to better understand the purposes of such resources and the management needs of the UCD farms.

OUTPUT NO. 7: NEW FACILITIES TO BE CONSTRUCTED

Project Strategy

According to the Project Paper, the USAID loan component of the project was to finance building and equipment costs estimated at \$25 million of the total \$48 million building program (including an inflation factor of 15 per cent compounded annually and a contingency of 10 percent). Designated facilities included the following:

- One general teaching block consisting of 3 lecture rooms, 6 seminar rooms, lecture hall/gymnasium, projection room, service rooms, and the necessary equipment and furnishings.
- A library with seating capacity for 600 students and 50,000 volumes, including stacks, reading rooms, work areas, office circulation area, and carrels area.
- A media center consisting of an offset room and lab, assembly room, art room, film and plate room, self-tutorial room, and a repair and supply room.
- A dormitory accomodating 400 beds.
- A cafeteria and commons room seating 400, kitchen, serving area, office, storage and cold storage areas.
- Infirmary with space for 10 beds, nurses' office, store room, and dressing rooms.
- An agricultural economics teaching block consisting of four laboratory/classrooms, 1 meeting room, 5 offices, storeroom, and necessary equipment.
- A rural technology teaching block with 4 laboratories, 5 offices, a storeroom, records and file room, and necessary equipment.

- Agronomy and basic science laboratories providing 8 laboratories and six offices.
- A rural education teaching block with 3 laboratories, an extension work room, storage, 5 offices and necessary equipment.
- General site work at the Dschang experimental farm, including fencing and development of the student practice plot area.
- Construction at the Djoutittsa livestock farm, including a dipping tank, corral, 1 three-bedroom house, and 1 cluster of five working houses.
- Construction of facilities at the Bansa demonstration farm, consisting of 1 three-bedroom house, 10 five-house clusters for farm workers, water well, pump and tower, storage shed, 2 store rooms, scale shed with office, grain feed storage, office repair shop and drying unit with silo.
- Construction at Wakwa and Ekona off-campus centers, each site including dormitory for 30 students, 2 private rooms for teachers, kitchen and dining area.
- Site work at UCD, construction and improvement of roads, walks, etc., including a sewerage treatment plant and a disposal system.

The World Bank contribution to construction at UCD has recently been completed and consists of the following:

- 1 teaching block.
- 1 cafeteria for 300 students.
- 3 dormitories accomodating 180 students.
- 3 off-campus centers with dormitories and classroom facilities for 30-50 students at each location in Bambili, Ebolowa and Maroua.

Total World Bank contribution towards construction was budgeted at \$3.6 million plus \$2.15 million for equipment.

The Cameroonian Government contribution towards construction was budgeted at FCFA 3,335,000,000 (or US \$ 13.34 million at an exchange rate of 250 FCFA/US \$1) and would finance the following components of the Project's construction program:

- A paved road between the UCD campus and the city of Dschang.
- Improved dirt roads between the UCD campus and the farms at Bansa and Djoutittsa.
- Water supply, including pumping station, water distribution lines and water tower.

- Electrical power and light supply, including distribution system.
- Telephone system, including switchboard, four outside lines, fifty extensions and external distribution lines.
- Administration building.
- Sports facilities, including gymnasium, soccer field, track and basketball courts.
- Housing for UCD staff and faculty guest house.
- Renovation of existing ITA buildings.
- Soil exploration and topographical surveys.
- Architectural and engineering design and supervision services for the construction activities financed by the Government, USAID and the Belgian Government.

The Belgian contribution to facility construction includes the following:

- 1 technical block consisting of offices, laboratories and scientific equipment to accommodate the Departments of Plant Protection, Soil Sciences and Animal Sciences.
- Budgeted construction costs were \$2.6 million, plus equipment costs of approximately \$0.4 million.

Implementation of Strategy

To date, the following has been accomplished:

- Renovations to existing ITA buildings.
- Extension to existing library at the lower campus.
- Construction of the administration block.
- Services such as roads, electricity and water supply to the administration block and World Bank buildings.
- Design services for the housing for UCD staff and faculty at the Colline de Foto.
- Master plan for the UCD campus.
- Topographical surveys.
- Substantial completion of architectural and engineering designs.

It should be noted that the achievements listed above were generally completed between one to two years later than planned.

Construction Delays: The present status of planned construction of new facilities is about two years behind schedule. The original scheduled date for the start of construction was early 1985. Delays were attributed to problems in the design of the project.

The architectural and engineering services (A&E) for the project are funded by the GRC. A&E services were contracted to a consortium of Cameroonian firms as early as 1979, about 2 years before the GRC requested USAID and Belgian Government assistance in financing the UCD construction. After the signing of the Project Agreement in 1982, USAID persuaded the GRC to hire an American firm to form a joint venture with the Cameroonian consortium of design firms in order to assure that the drawings and specifications would have the detail normally associated with American construction plans and to guarantee that the technical laboratories and library would be properly laid out. Also, early inspection of the construction of the World Bank buildings, which were well under construction at that time, indicated that laboratories were inadequate for the intended educational programs. The basic chemistry laboratory, for example, was little more than a classroom with a ceramic tile shelf around the wall containing a series of small sinks with only cold water facilities and drains made of PVC pipes. The drains did not meet specifications for removal of acids or hydroxides. There were no fume hoods, and no provisions for hot water, distilled water, gas or electricity.

Experiences such as these reinforced USAID's position in persuading the GRC to hire an American firm to join the consortium. Also, observation and instructional tours of laboratories and libraries in the U.S., particularly in Florida, were organized with the help of the UF team. Based on these observations, preliminary sketches were reviewed and design changes made to avoid such errors.

The firm of Peirson and Whitman (P&W) was selected as the American firm to join the A&E firm of Nsangwe Akwa/Douala Bell and the engineering firm of Tamajong Ndumu and Partners. The original contract was signed in 1979 and amended in September 1983 to include P&W as part of the joint venture contract to do the technical studies. Unfortunately, P&W was plagued with personnel and financial problems, which eventually resulted in the failure of this joint venture.

After both USAID and the GRC interventions, design studies resumed in early 1985. USAID appointed an IQC contractor, the firm of Gauthier, Alvarado and Associates from Falls Church, Virginia, to establish a program of requirements for layout of laboratories and technical buildings that would be functional and compatible with the technical building designed earlier. This work was completed in July 1984. In early 1985, the GRC selected a reputable French firm, SCET International, as replacement for P&W.

While delays in design spanned several years, the educational program was undergoing revisions to arrive at a new curriculum and degree program, requiring an up-dating of the facilities needed to accommodate the growth in student body and changes in curricula. Also, experiences with the World Bank buildings, presumably completed in 1984, but which were not functional for another year due to inadequate planning of utilities and services, prompted USAID and the GRC to award a contract for the development of a master plan for the University complex. The firm of Gauthier Alvarado and Associates, in association with Louis Berger International and Emman Manga, was selected and a contract signed in September 1985 to provide these services. The master plans were completed in July 1986.

The final design plans and specifications for the new facilities were submitted by the A&E firm to the Ministry of Equipment in October 1986. The formal review of the A&E submission by the Ministry of Equipment commenced 7 November 1986, and is substantially completed.

Conclusions

Construction of facilities at UCD has lagged significantly behind schedule. The problems involving design plans and specifications, review and compliance with GRC, USAID and regulations of other donors, the untimely withdrawal of one of the design firms from the A&E consortium, and the initial lack of a campus master plan to provide the necessary infrastructure relationships in support of the academic program, are a matter of record. Even the World Bank-funded construction has experienced serious problems: the need to add an access road, where none had been planned; correction of the flow of rainwater from rooftops, which was creating a serious erosion condition around the new buildings; and modifications in the interior equipment and furnishings for laboratories and other facilities, are some examples of the problems encountered.

The original scheduled date for start of USAID-financed construction was early 1985, based on the assumption that A&E studies would take one year. Perhaps the actual time allocated for A&E services should have been doubled, judging from the time it took to develop a program of requirements and a master plan for the UCD complex.

The campus comprehensive master plan document, a twenty year academic and facilities planning document, was completed in July 1986. According to USAID engineers, the construction phase is at the pre-final design and specification stage. The current target is to prepare the final design and bid documents with simultaneous advertising and securing of pre-bid expressions of interest by February 1987. The actual bidding process to execution of contract for construction is expected to take seven months. If all goes well, actual construction could begin by October 1987. Completion of construction is estimated to take a minimum of two and probably three years. This places the construction completion date for late 1989 or early 1990, approximating the present PACD of 30 December 1989.

The agricultural education project may expire before the USAID construction phase is completed. Considering the current stage of construction, it is not likely that use of the new facilities can be evaluated as to effectiveness before the date specified in the Project Paper. This is a problem that USAID and UF need to address. All proposed aspects in the creation of the new agricultural university at UCD cannot be accomplished within the time frame of the project despite the considerable amount of financial inputs allocated to construction of facilities. Obviously, prolonged delays in construction activity were not anticipated at the start of the project.

Given the problems encountered, there are several points worth noting for future activities involving "bricks and mortar". The scope of an institution-building task of this size cannot be fully known at the outset. In this project there were several donors involved - the U.S, IBRD, Belgium, and the GRC. It appears that a major problem for construction was lack of coordination on how the various donors' funds and accountability for construction were to be integrated into the design and construction phases. For example, each donor has a representative to clear design specifications. There have been and are donor territorial problems, as competing and sometimes conflicting regulations and approval systems must be applied. If there is a "lesson to be learned", it is the need for early, close coordination of activities on multi-donor construction projects, with each organization making clear what must be done according to what schedule, to satisfy its set of rules. Costs are another consideration in construction delay; despite a sizable built-in inflation factor, it is unlikely that the initial 1981-82 financial inputs will buy in 1988 and 1989 what was intended or desired.

On the appropriateness of facilities designed for UCD, the evaluation team is of the opinion that these decisions have been well researched by UCD and the UF team in both the master plan and in the space utilization surveys. The enrollment forecast and academic program projections were the data used by the Gauthier, Alvarado and Louis Berger International group to formulate the future academic, support and housing needs and land use planning for agricultural practitioners and research needs, and so forth. These have all been analyzed by the external A & E specialists. The UF team believed that their study of academic space utilization to accommodate the ENSA move on campus, plus the additional construction to be completed by 1989-1990, was accurate and that adequate space would be available to accommodate present and projected student enrollment needs and faculty/staff population by that date. This conclusion still appears to be valid. The campus master plan presumes that the capital improvement projects will be completed by 1991, the end of the first five year planning period (1986-1991) under the master plan. This target is probably attainable.

Recommendations

1. For reasons stated in the conclusions, the expediting of the construction activity is imperative to the formal completion of the project.

2. A permanent long-range planning committee should be set up at UCD to maintain the planning process initiated by the campus master plan effort.

This committee would review the progress made under the plan, examine needed refinements and adjustments because of changes in the academic programs and projected enrollments, and assist in continual updating of the plan so that it remains a flexible document. Specialists in educational program and facilities planning may be used as short term consultants in the ongoing planning process stages. This committee would also assure that coordination among donors takes place, where construction involves several such organizations. Now that UCD has acquired familiarity with detailed facilities and program planning, the UF team needs to work with UCD to keep on track a process of institutionalizing forward planning which minimizes crisis reactions and assures that timely and well grounded decisions are made in the academic and administrative arena.

OUTPUT NO. 8: MAINTENANCE AND MOTOR POOL UNITS

Project Strategy

Reports, post evaluations, and comments from personnel have consistently identified maintenance, or perhaps, lack of it, as a major problem in developing countries. Very often this situation is associated with an administrative management philosophy which results when little or no provision is made for on-going or preventive maintenance.

Too often management of the maintenance function is absent. There appears to be an adequate number of service employees but they lack training in skills needed for maintenance, and they lack supervision. Often janitorial personnel are seen sitting around talking, even though classrooms, laboratories and offices are almost too dirty to be used.

In a single paragraph, the Project Paper indicates that a Superintendent of Maintenance position will be established and additional maintenance staff hired and trained. An inventory control system will be developed for both the maintenance and transportation units. The motor pool will share the facilities of the agricultural mechanization shops for vehicle maintenance and repair. The technical assistance team will provide short-term training and assistance in establishing the maintenance system.

In 1984, twenty thousand dollars to begin acquiring tools was released to the University of Florida but progress on recruiting of management personnel by UCD and the University of Florida was unsuccessful; therefore, the released funds were not spent.

A maintenance incentive (a reward for outstanding performance) was designed to get a continuing maintenance line in the UCD budget at the time of completion of construction. The project grant will provide 50 per cent of the maintenance budget during the first year buildings are occupied, 25 per cent during the second, 10 per cent during the third, and none the fourth. The

estimated level of funding for this total maintenance line was \$350,000. The project agreement, dated 9 April, 1982, contains a paragraph that reads as follows:

"Prior to the disbursement of the assistance for facilities' maintenance in each year following completion of the facilities, the GRC shall furnish to A.I.D., in form and substance satisfactory to A.I.D., evidence of the source and availability of the corresponding GRC contribution for facilities maintenance for that year as provided for under the terms of this Agreement."

Implementation of Strategy

UCD has a developing awareness of the need for continuing maintenance schedules and has included some preventive maintenance in their budgets; however, much maintenance of buildings is delayed until major renovation. The University has become conscious of continuing maintenance on equipment and now uses maintenance contracts on copy machines, and is considering maintenance contracts when purchasing such items as computers, typewriters, and laboratory equipment. Janitorial services and grounds maintenance have been included in annual budgets and these services are much improved in recent years.

In the 1986-87 academic year, the Director General has started a campaign to create an awareness in students of their responsibility for maintenance of dormitory and classrooms, or at least to avoid activities that are destructive.

Superintendent of Maintenance. When completed the Physical Plant at UCD will have a value in excess of thirty billion CPA. The protection of this investment and the functional integrity of the facilities is a serious responsibility of administration. The cost value of the facilities justifies the employment of a Superintendent of Maintenance with an engineering and management background to administer the total maintenance function of UCD.

The short term in-service training for a Superintendent of Maintenance was planned to begin one year prior to completion of construction. At the present time, UCD has not recruited or designated a Plants and Grounds Maintenance Superintendent but is aware of this need. It is still anticipated that in-service training would be given to the person named to the position prior to completion of construction.

The short term training budget within the project has funds to send the person selected by UCD for this position to the U.S. for 6 months of in-service training with a person in a comparable position at a U.S. university. This should be done in the year prior to anticipated completion of the new facilities. It will be necessary for this person to have some competence in English before going to the U.S.

Laboratories. The technical blocks in the new facilities will contain laboratories and equipment that will increase maintenance needs of the university. Careful selection of equipment in order to keep extremely high maintenance units to a minimum will help the university accomplish its mission and keep down maintenance costs.

Laboratories will need protection from interrupted power and water services, water filters and distillation or deionization units will need regular service and maintenance to insure water free from contaminants that will inject biases into analytical work in the laboratories.

A small electronic maintenance shop and a good electronics technician will be needed to support maintenance of laboratories and equipment.

Motor Pool. The operation and maintenance of trucks, buses and cars is a major cost item necessary to the effective operation of UCD. Observation and inquiries lead one to conclude that operational management and supervision of drivers and mechanics are matters of constant concern.

Running the motor pool and garage is a herculean task in itself but the supervisor is also responsible for certain servicing jobs on campus, such as plumbing, carpentry, masonry and electrical work. He currently has an inventory of 125 vehicles to maintain with fuel, servicing and frequent repairs. He was recruited as technical advisor for the garage and motor pool by the University of Florida. Needless to say, it was very difficult to find an individual classified as a garage superintendent, a master mechanic with managerial experience, fluency in french, and a Civil Service System salary of a beginning teacher.

The position was filled 1 December 1985, after a tedious process of justifying waivers and getting approval to recruit at a competitive salary.

The first important task of the supervisor was to have the garage facility remodeled to provide security for tools and supplies that had to be purchased. In addition, a system of administrative control and accountability had to be instituted. Unfortunately, the supervisor at this time does not have a local counterpart nor the trained assistants that such an operation requires.

Construction and remodeling is now underway to solve this problem and funds will be released in the grant for the garage and motor pool in the 1987 fiscal year. Completion of remodeling is expected by January 1987.

Conclusions

Overall maintenance at UCD is much improved over what it was at the beginning of the project. A problem still remains because of very low pay for skilled maintenance technicians under the Public Sector of the Cameroon Labor Code. Competent electricians, plumbers, electronics technicians, etc., quickly leave the University for better pay in the private sector.

A university is a community in itself with similar disciplinary problems. Supporting services at all levels of operation require constant monitoring to cope with problems of carelessness, tardiness, and absenteeism. A desirable work ethic is acquired through supervision, training and close association

with colleagues who serve as good examples. Thus, it is most important that each technical assistant have a designated counterpart and that in-service training be an integral part of maintenance and technical operations.

Recommendations

1. It is recommended that ultimately all maintenance functions including janitorial services, grounds maintenance, motor pool, etc. be placed under the Superintendent of Maintenance for administration, and that an annual budget be prepared by him for maintenance.
2. It is important to move rapidly to develop the maintenance capability required to operate efficiently a major agricultural university. It is particularly important to develop a consciousness in the faculty, staff and students regarding importance of maintenance.
3. A Superintendent of Maintenance with an engineering and management background should be employed as soon as possible.
4. It is strongly recommended that the UF Team take the initiative to supplement and strengthen maintenance and motor pool management.
5. A short term in-service training for a Superintendent of Maintenance should be initiated prior to completion of building construction.
6. A good electronics technician and an electronics maintenance staff should be provided as soon as laboratory equipment is installed.
7. The motor pool is in desperate need of trained assistants, at least two or three. A counterpart for the supervisor should be provided immediately.

PROJECT INPUTS

A. Home Campus Coordination and Backstopping: Purpose and Scope

An evaluation was conducted to assess the effectiveness of the home campus coordination and backstopping in assisting the field team to accomplish the project goal and outputs. The evaluation centered on six typical functions of backstopping: a) institutional commitment to the project, b) organization and staffing of backstopping, c) backstopping management, d) financial administration of the project, e) predeparture preparation/training, and f) administration of participant training. The administrative backstopping is provided in the Office of International Programs (OIP) of the Institute of Food and Agricultural Sciences (IFAS) at the University of Florida (UF). Technical and academic backstopping are derived from departments and offices within IFAS.

Home Campus Institutional Commitment

The commitment of UF to the success of the Project is a very strong obligation and undertaken with a long-range perspective. The project is identified on campus as a "flagship" project among eight current development projects managed or coordinated by IFAS. The importance ascribed by Florida officials to the Agricultural Education Project is that it is both an institution-building as well as an intensive training project.

The scope of institutional commitment may be measured by the number (20) of UF top and mid-level administrators on short-term consultancy to the project; e.g., two of its Presidents, the Vice President for Agricultural Affairs, Deans and Department Chairs, Directors (See Annex C, III). From the Cameroonian side, former President Ahidjo, top aides in GRC Ministries, the Director General and Deputy Director General of UCD, among others, have visited UF. UF's commitment to Cameroonian agricultural development extends beyond the life of the project. UCD and UF signed in August 1985 an agreement of intent for broad cooperative ventures between the two institutions. The latter agreement apparently satisfies and expands upon the May 1984 Project Evaluation Summary (PES) recommendation of improving liaison between the two parties.

Other institutional indicators of IFAS backstopping capability are a) over thirty years of experience in international development activities, particularly in Africa and Central and South America, b) about one-third of IFAS on-campus scientists having had international experience in tropical agriculture, and c) UF regional Agriculture Research and Extension Centers engaged in tropical agriculture because of the state's subtropic climate.

The visitation of UF personnel to UCD served a dual purpose, which besides a familiarization with the campus also included a seminar given at UCD to make use of each person's speciality/experience; e.g., on topics of the Land Grant system philosophy and functions, faculty evaluation, role of research, etc., or to provide input on a specific problem area.

Home Campus Organization and Staffing

OIP has a Director, an Associate and an Assistant Director, an Assistant Research Scientist, an Editorial Specialist, and a Language Coordinator comprising the faculty personnel and project managers. Staff members include a variety of support specialists who handle the procedural details in training, accounting, contract administration, procurement, travel and transportation and general secretarial. The organization of OIP is presently under review for a streamlining of the support specialist tasks, whether along functional lines or by geographic region. A June 1986 proposed organization chart showed 29 positions for OIP (and the Center for Tropical Agriculture housed within OIP), paid from institutional funds, direct project funds for administration and from overhead recovery on projects.

OIP has a strong personnel base with which to provide administrative backstopping and it receives assistance from other support offices of IFAS. The additional personnel needs in OIP as identified in the May 1984 PES have been addressed. Likewise UF filled the need for an experienced administrative assistant in the field office to handle local purchasing and hiring, housing, visa problems, customs clearances of commodities and personal effects, etc. In the early project stages lack of sufficient assistance with these types of logistical matters resulted in some start-up delays.

Home Campus Management

The operations phase of OIP backstopping consists of planning, coordinating, monitoring, and controlling functions. Each OIP project is assigned to a project manager who has had international experience. The Agricultural Education Project falls under the Assistant Research Scientist responsible for African projects. As the project manager, this individual is involved in the following activities of the project: drafting of the annual plan of work, coordination of technical backstopping to fill field needs, monitoring of progress, schedule, reports and record keeping, contact with the COP and USAID Mission, budgetary and financial tracking and approval of expenditures. He is assisted by OIP specialists in the day-to-day management of details and logistics, such as with training, accounting, travel. The types of problems encountered and resolved by personnel, e.g., in procurement or travel delays, are typically for international program development.

An international program coordinator is designated in each academic department and administrative office to act as a liaison between OIP and the department/office. For example, there are fifteen departments offering graduate study and 1,000 scientists located within IFAS's main campus and satellite research facilities. In coordination of technical backstopping needs, OIP has final authority on approval of faculty and staff recruited for long-term assistance and short-term consultancy. A listing of the twenty faculty and staff fielded to date on the project is found in Annex C, I, II. The contract for the project specified that 50 percent of faculty in the field must be tenured, a provision which UF has met. In handling of technical backstopping needs, OIP encountered some unusual circumstances. In order to hire a motor vehicle maintenance supervisor, experienced overseas and with good French language capability, OIP had to obtain an exception within the State personnel system to hire a non-professional employee to be paid at a professional level salary. For a portion of the construction design phase, UF was able to assign its Dean of the Architecture School with the additional qualification that he was fluent in French.

Communications between the home and field offices are undertaken by phone on a weekly basis.

Home Campus Financial Administration

OIP has an accountant to assist in the financial monitoring, tracking and reporting on expenditure of funds on sponsored projects and programs. OIP has

daily computer access for updates of expenditure data processed through state offices. This information is made available to project managers. According to the accountant, invoices undergo a three stage (i.e., person-office) review and approval process. Expenditure documents on international programs are processed through the Planning and Business Affairs Office of IFAS. Oversight responsibility for assuring adherence to compliances set in contract or grant terms and conditions and for allowability of expenditure items per agency-specific rules, e.g., USAID regulations and OMB Circulars A-21 rev. and A-110, all rest with the project managers.

OIP is heavily involved in initial preparation and processing of paperwork for overseas work; e.g., payment of salaries for overseas staff including applicable allowances, procurement and shipping of field equipment and supplies, transportation and travel advance arrangements and their reconciliation, etc.

Internal controls were observed to be operative at both the home campus and field offices, with field office expenditures scrutinized upon their receipt at OIP and then reconciled. It appears that completed expenditure reports from OIP are now being sent on a regular basis to the field office for their planning and decision-making. IFAS accounts are routinely audited by the State, including the USAID awards. The state's auditor general report on audit ending 6/30/84, which tested federal funds accountability on OMB Circulars A-110 and A-21 Rev., found compliance with project terms and conditions. One minor deviation cited was subsequently corrected.

In brief, the activities and processes outlined above are typical of international program offices in state universities.

Problem areas for OIP have come from rigid management procedures of Florida state government. This climate is changing, it was reported, with fewer program and fiscal constraints. A credit to the successful backstopping of OIP in conjunction with the IFAS Planning and Business Affairs office was in obtaining a \$200,000 revolving account for the field operation. Sparked by the visit of a UF President and a Chancellor Emeritus who observed the serious cash flow problems of the project, the revolving account initiative became a two year process, through state offices and the legislature, to secure understanding of the need to set up a better system of payment of in-country expenses incurred by the COP than through personal advances. The revolving account also eased the usual sixty day turn-around response for the state to reimburse funds to overseas projects.

Other problems relating to state policy are payment of invoices within thirty days of receipt, a continual concern to OIP in first verifying receipt and condition of equipment and supplies shipped to Cameroon. The problem is further complicated by the fact that each shipment arriving by air or sea must be accompanied by an airway bill or bill of lading, an inventory list, and official evidence of tax exoneration for the shipment. OIP has endeavored to expedite delivery of airway bills and bills of lading to the field office, both to reduce delayed payment of vendor invoices and to reduce storage demurrage charges on commodities at the port of Douala. The tax exoneration

document to clear GRC customs is obtained from USAID/Cameroon upon receipt of the shipping documents. Commodity procurement problems were addressed in March 1986, in a joint meeting between UCD, USAID/Cameroon, the UF project team and SATA, the receiving agency in Douala. A comprehensive list of recommendations was developed by this group. These recommendations, if carefully followed, should facilitate shipment of goods both in and out of Cameroon.

Predeparture Preparation/Training at Home Campus

Predeparture preparation for overseas assignment consists of language training and cross-cultural orientation. Language training is handled by a full time faculty coordinator in IFAS who offers a summer program of intensive French at the beginning and intermediate levels. Daily conversational instruction in French and/or Spanish are offered during the academic year as well as intensive tutoring for faculty leaving on long or short-term assignment to Francophone Africa, Central and South America. The coordinator is assisted by two faculty specialists for French and for Spanish. The coordinator was involved with information gathering on and design of instructional materials for the (bilingual) language laboratory at UCD, and assisted in the early stages of setting up the lab's operations.

The availability of cross-cultural enrichment opportunities are numerous throughout the campus. The campus has a nationally known Center for Latin American Studies, an African Studies Center, and a Center for Tropical Agriculture. Seminars, visiting professor lectures, and arts events related to international themes, are available throughout the academic year and summer. The Dean of the Graduate School and of International Studies and Programs has prepared (June 1986) and distributed on campus a "Handbook of International Programs, Research and Faculty" and an "International Faculty Directory". The OIP institutional capability statement for 1986-1987 contains useful information on recent and projected IFAS internationally oriented workshops and meetings, new courses with international foci, new training materials and data collections, and current research and outreach activities related to international development.

Faculty anticipating or preparing for overseas assignment have a wealth of socio-cultural, economic and other information available to them on campus and in an easy access to these resources by contacting relevant faculty. Faculty on the project have been and are making use of these resources. Unlike language training, cross cultural enrichment activities are not pre-arranged specifically by OIP for personnel going overseas.

Another cross-fertilization approach, generated by the project's institution-building capacity and the UCD Director General's interest, was establishment of the Cameroon Working Group. This is a small group of interested faculty and department chairs in IFAS and other UF colleges who have African experience. The group is interested in fostering long-term linkages between UF faculty members and at sister institutions in Cameroon, especially UCD and University of Yaoundé, in cooperative research, teaching and publication efforts.

The importance of emphasizing predeparture orientation as a continued focus of OIP, and particularly with the project, was underscored by returned faculty and teaching assistants (TA) who spent one to two years at UCD. Five succinct benefits were stated by a TA (Agronomy) stationed at UCD as a replacement faculty member for a participant trainee. These were; a) an increased sensitivity to applied problems of international development, b) exposure to an alternative approach to educational organization (e.g. the French/Cameroonian university system), c) an understanding of constraints to conducting research in developing countries and difficulties facing UCD faculty, d) improved French proficiency, and e) an appreciation of the background and culture of participant trainees studying in the U.S. and a better understanding of relating to their needs and concerns while they are in the U.S. Overall, the TA's and faculty experiences at UCD were positive.

The field office has prepared a project orientation kit for field personnel as well as for home campus use in responding to questions of short-term assignees and visitors to the project; e.g., on topics of living in Dschang, health care, UF/USAID project policies and regulations, and so forth.

Administration of Participant Training in the U.S.

Participant trainee names, dossiers and PIO/Ps are transmitted to OIP for forwarding to appropriate UF departments and those at other institutions for placement. Departments assign regular or probation status for each participant. Each department has a graduate coordinator to act as faculty liaison and assist students in selecting an appropriate faculty advisor.

The graduate supervisory committees review the PIO/P, which designates the proposed field of study for the participant, and prepare the program of study based on his/her qualifications and training. During the course of study some activities may be specifically tailored; e.g., one candidate for the M.S. in Agricultural Education and Extension had a summer internship arranged to visit UF Research and Extension Centers, county extension offices, high schools and farms. Lengths of stay average 30 months minimum for M.S. candidates, usually because they need additional English language instruction and prerequisite courses. In Annex B is a summary of the academic status of 15 trainees at UF (three additional trainees cited in the list are in the English Language Institute). According to data provided, a total of seventeen trainees have been at UF.

Participant trainees, whether to stay at UF or enrolled at other schools, are briefed upon arrival in the U.S. by the OIP training staff on maintenance allowances, housing, stipend, attendance at professional meetings, etc.

A session was arranged for a group interview with the UF participant trainees and two calls placed out-of-state to two trainees (at NCSU and UC-Davis). The out-of-state calls were positive, the trainees satisfied with their program of study, their advisors, and the challenges presented them. The program of study was viewed by them as appropriate to the objectives decided at UCD for their training, and they reported thesis topic designs related to field problems in Cameroon. Discussion at the group interview

session at UF, while positive overall to the trainees' programs of study, tended to concentrate on procedural problems such as the costs of reference texts vis-a-vis the book allowance, the possibility of shifting unspent funds in categories of their total allowances to their other needs, (e.g., towards books, or for others to research projects costs higher than the USAID allowance), alternatives to the USAID health insurance, completion of study before graduation and the required date of return to Cameroon. These items pertain primarily to AID regulations and approved exceptions.

Several other points deserve attention. The first is that trainees desired their program of study to be on file at UCD to document changes from the proposed program of study given in the PIO/P. Another concern was Florida versus USAID policy on travel reimbursement ceiling (a \$50.00 limit versus USAID allowance of \$60.00). The third area was to encourage a better understanding and appreciation of the Cameroon environment by UF faculty who approved thesis topics.

Conclusions

The home campus coordination and backstopping are adequate to the needs of this project and the OIP portfolio of projects. There appears to be adequate program and financial audit trails. There are management successes in working within the state machinery to obtain specialized technical assistants for the field as in the case of the maintenance mechanic and in securing the revolving account to handle field expenditures. The problems cited are typical of the adjustments the needs of overseas projects will impose on the stateside administrative and fiscal systems. There were unplanned events such as the interior institution building generated by the Cameroon Working Group, and the impact the project experience has had upon UF teaching assistants in their expression of interest for careers in international agriculture.

Recommendations

1. OIP should continue to impress upon the state system a recognition of special conditions generic to overseas projects and the governing USAID regulations, and obtain the needed exceptions to state policy.
2. Returned faculty, staff and teaching assistants should be encouraged to interact with potential long- and short-term personnel going to the field and with the participant trainees.
3. The short-term visits of UF personnel should be continued as needed, particularly to sensitize department heads and key faculty working with participant trainees to the long-term needs of UCD and Cameroon.
4. The practice of encouraging UF faculty and administrators to present seminars at UCD on subject matter and management topics should be continued.

5. OIP should clarify the USAID regulations on those concerns expressed by the participants at UF (e.g., the USAID travel reimbursement of \$60.00 versus \$50.00 allowed by the state of Florida). OIP should verify whether the participant's academic program of study in the U.S. is being transmitted to the USAID Mission and to UCD. This should address the concern of participants on documenting changes made in the PIO/P proposed program of study.
6. USAID should consider the advisability of writing PIO/P's for a period of thirty months instead of twenty - four (M.S. level), to allow for a semester of prerequisite/foundation courses recommended for trainees by their graduate committee and to also include as needed the additional time for English Language instruction.

B. Financial Support: Purpose and Scope

The financial support of the project is intended to provide those resources of technical assistance, training, construction, equipment, and operational costs necessary to accomplish the project goal and outputs. The financial resources consist of funds and contributions made by USAID, GRC, IBRD, the Belgian and French governments, either directly or indirectly to the Agricultural Education Project or to UCD's overall development. Each of these funding sources is treated in turn.

USAID

The total USAID and GRC financial inputs in the PP were estimated at \$90,112,500. The planned USAID assistance was to cover approximately 48 per cent of the costs and the GRC contribution to be approximately 52 per cent. The USAID assistance for the project consisted of a grant agreement of \$16,670,000 and a concurrent \$26,351,000 loan to the GRC, both dated July 15, 1982. Under the grant agreement, a cost reimbursable contract was issued to UF to undertake the technical assistance and training portions of the project at funding of \$16,123,429, for the period beginning July 22, 1982 and continuing to the present contract termination date of September 30, 1988. The project loan to GRC was to finance construction of new facilities (output seven) and to purchase commodities such as equipment, supplies and books for the library, general equipment and furnishings for the university administration, classroom and dormitories, and equipment for the farms and media center.

The present project loan termination date is also September 30, 1988. The total USAID financial resources (UF contract and loan to GRC) amount to \$42,474,429. These can be summarized in the chart below, along with expenditure data.

Chart 1: USAID Financial Resources:

a. UF contract for technical assistance		
(dates: 7/22/82 - 9/30/88)	-	\$16,123,429
b. Loan to GRC under Grant Agreement	-	<u>26,351,000</u>
(dates 7/15/82 - 9/30/88)		
Total Resources		\$42,474,429

C. Expenditure: UF Contract and Project Loan

	<u>Award/ Budget</u>	<u>Actual Expenditures to 9/30/86</u>	<u>Per Cent Expended</u>	<u>Per Cent Activity to 12/30/88</u>
UF contract:	16,123,429	6,101,019.53	38	65%
Subtotal		6,101,019.53		
Project Loan:				
Language Lab	75,000	72,941.09	97	65%
Library Collection	370,000	185,359.76	50	65%
Scientific Equipment	405,000	222,279.76	55	65%
A & E Services	349,617	N/A	N/A	One-time
Subtotal	\$1,199,617	\$ 480,580.40+		

Expenditure data on the Contract were supplied by OIP (see Annex D) from July 1982 through September 30, 1986, to serve as one indicator of project level activity. The Per Cent Expended column is the ratio of expenditures to the award/budget. The Per Cent Activity column depicts expenditures for a period of 51 months (July 1982 - Sept 30, 1986) out of a current total of 78 months. As of April 1986, the PACD for all activities under the project except for training was set for December 30, 1986; the PACD for the training program has been extended to December 30, 1989.

The first three activities under the GRC project loan -- for establishing the language lab, for library materials, and scientific equipment for labs -- were a delegated responsibility to UF by the GRC to procure these commodities for UCD and to manage the budgeted funds. The fourth activity for A & E services refers to the UCD request in May 1985 for \$350,000 of the project loan to be released to finance the architectural and engineering services for development of the campus master plan (the actual contract was for \$349,617).

In Chart 2 below is a projected balance of funds status for discussion purposes:

Chart 2: Projected Balance of Funds Status (USAID):

1. UP contract - \$10,022,409.47
(10/1/86 -PACD OF 12/30/88 or 27 months)

	<u>Amount</u>	<u>Category</u>	<u>Obligation</u>
2. Loan to GRC	13,013,000	(Construction)	0
(10/1/86 -PACD OF 12/30/88	1,577,000	(Contingency)	0
or 27 months)	9,006,000	(Inflation)	0
	1,555,383	(Commodities)	1,199,617
			(See Chart 1)

Total Project Resources - \$42,474,429

Projected Balance of Funds - \$35,173,792.47

Of the projected funds balance, a total of \$23,596,000 is allocated for the construction of facilities identified in output seven. These facilities have been significantly delayed by events outside the control of UCD, the UF team and USAID. The UF contract cost breakdown is shown below by general budget category:

<u>BUDGET</u> <u>CATEGORY</u>	<u>EXPENDITURES</u> <u>07/22/82-09/30/86</u>	<u>ORIGINAL ESTIMATED</u> <u>CONTRACT COSTS</u>
Salaries:		
Home Office	\$ 553,060.33	\$ 880,863
Field Office	1,419,999.03	2,613,604
Consultants	3,397.03	See other
Indirect Costs:		
Home Office	286,331.61	582,628
Field Office	851,198.78	1,946,795
Allowances	408,827.09	682,735
Travel and Transportation	484,998.03	1,720,556
Expendable Equipment and Materials	259,408.18	202,027
Non-expendable Equipment	280,590.04	1,419,199
Participant Costs	978,982.02	3,745,819
Other Direct Costs	574,227.39	287,887
Inflation Factor	<u>not reported</u>	<u>2,041,371</u>
Total	\$6,101,019.53	\$16,123,479

Project expenditures are ongoing, and budget amendments have occurred to reflect changes from original cost estimates. There are 35 participant trainees now in the U.S. and another twelve to be added in 1987. This budget category should be well obligated over the next twenty-seven months of the contract. The budget categories for salaries, indirect costs and allowances may appear to be underspent over the 27 month period, particularly for the field office. The field office expenditures should increase with the requested extension of tour for the administrative support specialist position and continuance of the motor pool supervisor through the PACD. There appears, however, to be leverage in the budget for adding one or two long-term technical assistant positions. The non-expendable category is well underspent to date, while the other direct category is 100 per cent overspent. In brief, there are ample contract funds to reach the PACD, with budget flexibility to allow for additional UCD briefing tours to the U.S., short-term consultancies, their travel and transportation cost and related operational needs to meet various project outputs.

GRC Contributions

In the project loan, the GRC contributions are estimated at 11,772,750,000 CFA or \$47,091,000 (US) at an exchange rate of 250 CFA to 1 US dollar. The GRC's contribution to the project consists of budgetary support and in-kind contributions. The designated GRC funding categories include both recurrent costs of ENSA and ITA and increased construction, personnel and operational costs to be generated by the project. Some of these GRC proposed costs include physical infrastructure improvements (roads, utilities, building renovation), faculty and staff housing, sports facilities, participant training travel, freight charges for in-country transport of project-funded commodities from the Douala port of entry, and a variety of recurrent operational costs at UCD.

Data provided by UCD (see annex E) show expenditures from 1981-82 through 1986-87 in two categories: the recurrent budget and the investment and special budget. The recurrent budget, financing administrative and academic activities, is shown in four subcategories: salaries, student scholarships and food services, research, and direct costs such as equipment, maintenance, housing, transportation, etc. The annual allocation of funds to each of these subcategories over a six year period reveals an overall substantive increase of support. The total UCD budget increased by 54 per cent in six years. Each of the four subcategories shows an incremental increase annually with the exception of scholarships and food services dropping substantially in the 1986/87 year and research expenditures fluctuating annually but stabilizing in the 1985-87 years. The investment and special budget allocation for physical infrastructure fluctuates by year but overall reflects a 10 per cent increment between 1982/83 and 1986/87. The total expenditures by GRC for the project period years 1982/83 through 1986/87 amount to 23,212,971,800 CFA, or an increase of 11,440,221,800 CFA over the original estimated GRC contribution in 1982.

An example of a breakdown of the GRC contribution by year is provided for the 1985/86 year (see annex F). Both recurrent and investment/special investment funds are shown. For example, over 2.4 billion CFA were spent on construction, 219,005,000 CFA on utilities, 205,114,000 CFA on maintenance, 265,000,000 CFA on farm operations, etc. In brief, the GRC has provided substantial financial resources to UCD. UCD used its investment and special budget funds to accommodate the ENSA relocation both by constructing the interim library building on the ITA lower campus and an office building, as well as to construct the general administration building.

IBRD contribution (loans)

No financial data were provided. However, the "World Bank" building complex on the upper campus has been completed, furnished and equipped, and is in use. The PP refers to a sum of \$7,000,000. The absence of some standard infrastructure, e.g., adequate water supply, sewers and electricity, delayed opening of the buildings until these oversights were corrected. Site planning was apparently ignored.

Belgian Contribution

The PP refers to a Belgium contribution of \$8,100,000.

The assistance (see annex G) to the Departments of Plant Protection, Soil Science and Animal Science, is for construction of offices and laboratories, scientific equipment, a percentage of the management costs of these three departments over a five year period, participant trainees from these Departments to study in Belgium, and technical assistance of up to twelve Belgium staff to the departments for teaching, research, etc. Financial data provided show:

<u>Department</u>	<u>Total costs, all categories</u>
Plant Protection	\$ 390,000
Animal Science	2,175,000
Soil Science	1,265,000
Total Belgium assistance (estimated 1982 to 1986 years).	\$ 3,830,000

French Contribution

The contribution has been primarily with the Department of Forestry, in providing instructional staff and construction of the Department's facility at Nkclbisson. Present French teaching staff at UCD number nine, between the Departments of Agronomy, Forestry and Agricultural Economics. No financial data were provided. The project paper refers to a sum of \$2,720,000.

Conclusions

Each of the donors has demonstrated a contribution to the institution-building of UCD by one or another resources: facilities and equipment, technical assistance, participant training, recurrent costs, physical infrastructure.

From the data provided herein on USAID and GRC, we can generalize that:

1. UF should have sufficient funds under the current PACD to respond to those outputs which will take a longer time to complete; e.g., construction of facilities including the demonstration farms, research activities undertaken by faculty, linkages established with client agencies, and successful reentry of participant trainees. The USAID loan to GRC available for construction and commodities is also to be accomplished within the current PACD. A degree of progress is likely to be found over the next two years in development of the demonstration farms, and the undertaking of the research and linkage activities as the number of faculty return to UCD from study leave. How much a draw on the available financial resources the activities in outputs four, five and six will make is dependent upon the priority and follow-through given to them.

2. Two concerns have been raised by UCD interviewees on the financial impact of institution building, e.g., upon the recurrent and investment/special budgets. One concern is the cost of capital improvements proposed in the master plan and whether the funds will be available over the twenty year span of the plan to complete the facilities and infrastructure as proposed. The cost of capital improvements is estimated at 15,400,000,000 CFA.

The other concern expressed by the Secretary General and staff was on the impact of the master plan upon the non-academic sectors of the campus. While the plan is an academic and physical planning document, it has a bearing on increased costs of support services personnel and operations; e.g., financial affairs, physical plant, maintenance and motor pool functions, security, student services for medical, food, housing functions, etc. The Secretary General stated that there was no formal planning in his areas as yet to respond to these future personnel needs and responsibilities.

3. Since budgeting is undertaken annually for both investment and recurrent funding and only unused investment funds may be carried forward, there is the need to make certain that budgeting is included in the formal planning process. Financial planning forms an interactive relationship with academic/research/outreach program planning and with facilities planning as suggested in the model below.

Academic, Research,
Outreach programs

Planning
process

Facilities

Finances

Each of the functions in the model is interdependent, with change in one causing adjustments, deviations or slippage in the other two functions.

Recommendations

1. Because of available, uncommitted funds, the USAID contract to UF and the project loan to GRC should be reviewed by UF, GRC and USAID to determine the schedule of meeting project outputs; e.g., the building construction, additional technical assistance and short term consultancies related to output one and other outputs, capital improvements for the demonstration farms to be functional, initiation and/or expansion of research and outreach activities of UCD, etc.
2. The UCD budgetary process for recurrent and capital improvement funding and financial projections should be included in an institutionalized planning process.

LESSONS LEARNED AND FUTURE PERSPECTIVES

Short Term Perspective

In terms of perceived needs for the remaining 2 or 3 years of the project, the following technical assistants, and as listed below according to priority, should be provided:

1. An extension specialist experienced in African outreach programs and capable of communicating effectively with all levels of clientele; also experienced in identifying problems needing research in production and marketing of agricultural products. Such a person should also have experience in conducting demonstrations, field days, and preparing extension type information leaflets for distribution to the farming population.
2. A research specialist familiar with African cultures, experienced in conducting adaptive research, and in supervising graduate student research, both at MS and PhD levels.
3. A superintendent of maintenance to coordinate and supervise maintenance of grounds, buildings, equipment, garage and motor pool.
4. An administrator and educator to work closely with UCD in a continuing effort to improve the administrative structure and adjust curricula to meet needs arising from the phase out of the two Ingenieur programs and installation of the BS and MS degree equivalent programs. This individual might also be Chief of Party.
5. A fifth person might be needed when the demonstration farms are put into operation. This would require a superintendent of farms experienced in managing research station farms and in supervising farm workers.

Project objectives are often stated in a combined listing and regarded as grouped objectives to be thrust forward in a concurrent effort to accomplish a general goal. In reality, some project objectives or outputs cannot be properly addressed until some of the other stated objectives have been accomplished, either totally or partially. This was particularly evident in this evaluation of the University of Florida's institution building project at the University Center at Dschang. Although the Project Paper listed eight outputs or objectives, it was logical to concentrate on those that would lay the ground work for accomplishing other objectives. For example, the UF Team in collaboration with UCD focused their attention on revising the administrative structure, revising the curricula, providing participant training to upgrade faculty and staff, pushing for construction of facilities and planning for improvement and strengthening of maintenance of the physical plant, garage and motor pool. This summary covers five of the eight objectives listed in the Project Paper. Accomplishing the three remaining objectives; namely to promote and conduct interdisciplinary research, to expand and develop linkages between the UCD and client agencies, and to develop and utilize the demonstration farms is virtually impossible to accomplish until the faculty is upgraded and

capabilities developed to the point where the needed professional manpower is available. Consequently, the project designers should recognize and allow for these phased-in types of objectives. Moreover, subsequent evaluations would be less critical of a contract team's efforts when assessing accomplishments of objectives that cannot be addressed until a sequence of other objectives are accomplished.

During the remaining two years of the agricultural education project, it is recommended that the collaborative effort of UF and UCD continue to fine tune the administrative structure of the University and to revise the curricula as necessary to phase out the two former ingenieur programs and install the 4-year BS degree equivalent program.

Another recommendation pertains to the effective use of participants as soon as they return from training. An orientation should be arranged for each participant, a job description provided, and immediate assistance made available for getting involved in teaching, research and extension duties.

Moreover, the reputation and image of the University can be upgraded by tracking the returned participants trainees and graduates of the University at Dschang to document achievements and performance. In fact, every effort should be made to have a committee consisting of representatives of the faculty, administration, students and public and private agencies to confer on revising curricula and developing graduate news notes.

Long Term Perspectives

1. General Commentary. What does the future hold for institution-building activities in Africa such as the Agricultural Education Project being implemented at UCD by the University of Florida team?

Perhaps careful study of the progression of events and activities that has taken place on the UCD project will lead us to conclusions that can serve as guideposts, not only for what can be done during the remaining two years of the UCD project but also for consideration as similar projects are designed and implemented.

Significant progress has been made toward putting in-place a revised administrative structure and academic organization, a new academic program with revised curricula, and a large cohort of faculty is engaged in participant training leading to M.S. and Ph.D. degrees. The revisions in organization, structure and curricula have been set forth in an arrêté issued by MESRES in March 1986. Implementation awaits the issuance of a decree by the Presidency authorizing the proposed revisions. Certain construction and housekeeping activities needed to accommodate the move of ENSA to the Dschang campus have been finished or are nearing completion. All of this has required strong commitment from the UCD administrators and diligent work from the UF team of advisors. However, with these outputs so recently set in-place sufficient time has not elapsed to allow for measurable outcomes to make themselves evident.

A substantial number of faculty members have submitted research proposals and are involved in research activities. Since there appears to be no focused research mission in-place, the question arises regarding how the research problems were derived. Do they address priorities set forth by the national research organizations, or do they merely exhibit the special interests of the faculty members preparing them. Progress has yet to be made toward defining the role UCD is to play in serving the educational needs of the general populace through outreach programs. Construction of facilities to be provided through USAID funding has been delayed with further delays being indicated. Little has been accomplished toward the preparation of the three farms for faculty research, for demonstration and for student projects.

This litany of the current status is not set forth for the purpose of criticizing UCD or the contractor. Rather, it may point to lack of a clear understanding of what is meant by, implied in, and involved with institution-building, and more specifically, of the basic constraints to be confronted in building African colleges of agriculture. BIFAD Occasional Series Publication No. 7 (May 1986) addresses some of those constraints.

Regarding the UCD project, it is obvious that the design and time frame for project completion were flawed. There seems to be no reasonable way in which all eight outputs can be accomplished, let alone having time for measurable results to become evident. It is not possible for an institution-building project of this nature to be set in-place and for the program to become institutionalized (to demonstrate beyond a reasonable doubt a significant and lasting impact) in the time specified in the contract. In trying to develop the program at UCD the program of work should take into consideration the need to seek the guidance of farmers and other basic consumers of the product UCD is seeking to provide (graduates, technical knowledge, advisory services and in-service training). How many UCD trained graduates are needed in Cameroon and for what purposes? Does the answer to this question indicate a need for a program like the agricultural education project to be instituted at UCD? If so, of what magnitude? Has thought been given to the issue of the role of the private sector in the development of the Cameroonian agricultural enterprise and the role UCD might fulfill in providing the leadership required? What about the question of US academic degree equivalency in an educational system heavily weighted toward the French program of higher education? In the French system there is no masters degree as we know it. Mention was made of the fact that African women are the chief cultivators of the soil but what of their role in marketing the surplus they derive from subsistence agriculture? Further, the matter of relationships between UCD and the research enterprise of the nation requires clarification. The same applies to the relationship between UCD and the established Extension Services of the nation.

In many of the African nations, universities have traditionally been teaching institutions. Research has been conducted in institutes not directly related or tied to the universities and outreach has been the purview of still another agency of government, usually in another ministry. Therefore, there is no history of close linkages between the teaching, research and outreach

programs of a country. In fact, in some countries the role of Extension has not been to provide knowledge and guidance on plant and animal production, rather it has concentrated on such matters as credit, delivery of fertilizers and pesticides and the implementation of government decrees that apply to the rural populations. Still another constraint is that schools providing agricultural training were not held in high regard. Thus the better students tended to avoid such institutions. Often those posted to the Extension Service failed to qualify for post-secondary schooling. Some did not have the high school diploma. In many cases the Extension Services have had to set up their own schools to provide basic as well as in-service training.

To impose or force the land grant model, as we see it functioning in the USA today, upon the educational system of a country like Cameroon has the potential for real frustration and trauma. On the other hand, it is quite possible to develop and institutionalize an effective program building around the concept of integrating the missions of instruction, research and outreach (service to the larger public) as these missions and their roles are seen in the context of the African nation's system and culture.

This discussion leads to two recommendations. The first applies to the Agricultural Education Project at UCD. The second to the issue of institution-building.

In the remaining years of the current project contract, efforts and resources should be concentrated on:

1. The issuance of the decree by the Presidency authorizing the administrative, academic structure and curricula revisions for UCD as proposed in the MEGRES arreté. Such action is of prime importance as continued delay will hamper implementation resulting in heightened concern and loss of momentum.
2. The institutionalization and operation of the instructional program at UCD. Adjustments and fine-tuning will be required. Laboratories are not yet fully in-place and equipped, the library is in temporary quarters and has yet to receive all of its collection as provided under the contract. Job descriptions are yet to be prepared and adopted. A faculty rewards (promotion) system is to be developed.
3. The UCD farms which have to be developed for use by faculty and students as a part of the instruction, research and outreach program. To fulfill these purposes the farms and all that is related to them must be of the highest quality. For farmers in the Dschang area they will be the most important feature of UCD. UCD can, through its farms, set the tone for the entire country.
4. The appointment of Director of Research and Outreach. The research philosophy, role and function at UCD should have immediate attention. How does outreach fit into the total mission of the

institution? Soon the outreach function should have its separate leadership if that mission is to receive the attention required for adequate development and if the role UCD is to play in outreach is to be clarified.

5. How will the newly trained faculty be integrated into the system at UCD? These individuals, along with those currently at UCD, could immediately start serving a highly visible and useful role by taking results of IRA and IRZ research to the field to demonstrate applications to the resolution of farmer problems. Utilizing the TLU program would be ideal as it is based on applied research conducted on farms by an interdisciplinary team. Also, it provides an avenue for outreach as the program works through local extension service personnel and allows ready access to the ultimate consumer of the information being tested. This approach would be well-suited to training students as well. Data obtained could be used by students for their memoirs and by faculty to develop publications for use by the Extension Service.

A point that deserves re-iteration is that the process of putting in-place and the ultimate functioning of an educational institution is an evolutionary one. Each and all of the activities involved do not, and really cannot, occur in lockstep or all at one time. In the case of an agricultural college in which the objective is to integrate the missions of teaching, research and outreach this is especially true. The time frame in which the evolutionary process takes place is affected in major part by the practices, mores, culture and history of the public it is designed and intended to serve. Where patterns are already set the resistance to the introduction of innovations can be very strong, especially if those changes are viewed as threats to the existing system and to the individuals already in-place.

It is time to accept the fact that the time frame allotted in the Agricultural Education Project was unrealistic. A more realistic time frame is needed. In setting out that time frame it is necessary to determine what can be realistically accomplished in the next two years and then how much longer will it take to fulfill the objectives originally set forth in the Agricultural Education Project. The total period from project start-up to the development of an effective institution may be fifteen or more years.

An excellent start has been made. Continued attention and nurturing are needed for the academic program. It may be in-place but there is as yet no product to be used as a measure of its effectiveness. The UCD farms should be developed to serve as effective tools for student instruction, for research and for demonstration. If there is a citizen-based demand for the potential products of UCD, generated through research and outreach, it has not been demonstrated. The TLU program could be implemented in the immediate area of Dschang. This would involve faculty and students in interdisciplinary research and outreach activities in direct contact with local extension service personnel and farmers, the ultimate consumers and beneficiaries of UCD programs. As the successful outcomes of the TLU effort become common

knowledge demand for the program will spread thus helping to build the solid citizen base required for continued support of UCD. Success helps to establish an image which depends upon demonstrated capability. As capability becomes recognized the institution becomes more visible and more creditable.

The recommendation to USAID relates to lessons learned in this project. Longer, much longer, time frames are necessary as institution-building requires time. Witness the expanse of time encompassed in the evolution of the so-called land grant system in the USA and especially so with the HBCU institutions. It is one thing to put a structure in-place but quite another to see the program develop and bear tangible results. Realistically, a time period of fifteen or more years will be needed. To be effective, the institutions USAID helps to build must be formed in a manner that speaks to host country needs. The institutions must fill a need greater than that of supplying more infrastructure.

The Agricultural Education Project at UCD is a noble effort. However, it misses the mark in terms of achieving the objectives specified in the time set forth in the contract. There is even the likelihood that the project may well miss the purposes for which it was designed unless it is understood that institution-building is an evolutionary process, one that must grow out of the needs as well as the hopes and aspirations of the public that is called upon to support it. It is essential that all parties involved have clearly in mind that what should take place is the evolving of a Cameroonian model based on the concept or integrating the programs of teaching, research and outreach into the combined mission of a college of agriculture, specifically the University Center at Dschang, which has been appointed to address the pressing and basic needs of the rural population of Cameroon.

2. Time Frame: The project design recommended a six year period in which to accomplish eight outputs. Even with substantial financial and other resources made available to the project, the project time period (PACD) has been extended to 30 December 1985 to accommodate participant training delays (output three). Because of extenuating circumstances, construction (output seven) has been delayed and the new facilities may not be in-place before the PACD. Before the PACD, progress is expected on research, outreach and the demonstration farms (outputs four, five and six) and on the maintenance/motor pool (output eight); but these outputs will not be accomplished in their entirety as stated in the PP. There are refinements and completion of some activities on outputs one and two but most should be completed by the PACD. Yet is difficult to state categorically that UCD will be an established agricultural university by the PACD.

The design of the project is flawed in the time frame. Descriptors such as "strengthened", "developed", "created" are relevant to an anticipated continuity and perpetuation of activities. We do not disagree with the choice of outputs, but with the scope of proposed activities expected to be accomplished within each output and within the timing chosen in the implementation schedule. Neither do we disagree with the choice of the Collaborative Assistance Mode for this project because this procedure allows

for in-course adjustments to the PP. This flexibility became essential to modify the schedule for the Agricultural Education project because of the prolonged delays and slippage occurring throughout the original implementation schedule. We also concur with the general assumptions about the project as these may be extrapolated from the project and financial analysis sections of the PP.

Our concern is that the PP does not address the evolutionary process of institution-building. Institution-building is a process which takes a long period of time -- unable to be precisely specified -- for organizational change to be accepted and legitimized with a continuity well beyond the project period. The question of institution-building is whether the institution is mature enough to operate satisfactorily without outside assistance. The achievement of internal change is not the final test of effectiveness. Institutions are built to provide services or products for target groups. The effectiveness of institution-building is measured by the impact upon the beneficiaries (see USAID 1981 Manual on Program Design, Implementation and Evaluation).

BIFAD Occasional Series Publication No. 7, dated May 1986, reports on a study of USAID institution-building projects funded in the 1960s. The study conducted by David C. Wilcock and George R. McDowell, University of Massachusetts, revealed that these projects ran out of time to accomplish all outputs, especially those relating to research and extension. No opportunity was provided for follow-up projects to study what happened, and why, and to make further interventions to insure fulfillment of the institution-building objectives.

There are "building blocks" in the process of institution-building of a university as we show in the diagram on institutional building tiers. We discuss these "building blocks" in the next section.

On the issue of the time frame for this project, we would have suggested a phased-in approach to the outputs. That is, a concentration on outputs one, two and three during the first three-to-four years of the project since the administrative/academic structure, curriculum revision and training of faculty and staff form the nucleus in the formation of a university. Because construction is a known time-consuming process, this output would also have begun in the first phase of the project and continued into the fifth or possibly sixth year. By the third year of the project, work would have begun on output four (research) to be successively accelerated through year six to accommodate the increasing number of participants returning back to join the faculty; on output six (demonstration farms) for the campus farm to be developed, with planning during years four to six for facilities to be constructed at the two other farms; and on output eight to accelerate activities during years four to six. By the fourth year of the project, work would have begun on output five (outreach) to be concentrated in years five and six as the participants returned to UCD. This phased-in approach would coincide with several of the actual events which did materialize on the project in the first four years and parallels a number of other activities which are expected to occur during the next two years of the project.

A related time frame problem we note is on project start up, one that is common to AID projects where there is no established base of operation at the field site. The historical data on this project reveal typical logistical problems in project start-up which delay action on technical activities and move back timetables. In brief, it is unfair to begin evaluation of technical portions of a project as of the contract start date, realizing that the first six months (and perhaps more) of a project will be consumed to a considerable degree (perhaps 75 percent of the time) in internal administrative/operational concerns of the field team, arranging commodity purchases and so forth.

A more realistic policy for USAID to consider is an initial plan of work for a specified time period devoted principally to the management/administrative needs of the project, specifically the field team, securing of commodities and housing, office space and the like. Some remaining time may be devoted to specific technical activities which can be satisfactorily undertaken in the initial time period. Following this period, another plan of work can begin the regular technical assistance work. We acknowledge that there are inevitably going to be a few lingering logistical problems and needs continuing beyond the initial project start-up period. Our focus on this matter is because the historical record for the project suggests a year spent primarily on resolving field logistical and administrative problems before full attention could be given to the technical portions of the project. Project implementation is stated by the COP as beginning in July 1983 under the new administration of the present Director General of UCD.

3. Institution-Building Tiers: The attached diagram has been devised to illustrate a conceptual framework to institution-building appropriate to the setting of UCD as an emerging agricultural university developing an integrated teaching, research and outreach program. In this conceptual approach the premise is that institution-building is an evolutionary process consisting of a series of incremental levels of development (we show four in the model) taking place in the context of a time period and growth pattern, shown here in progressively dynamic five-year increments.

There are four elements with which a youthful organization should be concerned: image, capability, visibility and creditability. Each element acts as a building block upon the other and produces benefits. The first is image which is both an institutional assessment (positive and negative) as well as how the institution is perceived by external "publics". The image of the institution, in this case the university, begins to change as its capability is improved, e.g., faculty expertise in teaching, research and outreach. The university's image changes as it becomes more visible with its products: its graduates, faculty output and service rendered through outreach. The final element is creditability, through which the university acquires an institutional identity, that is, it is being characterized as performing, as delivering a product, and is being respected for the type of product (a quality assessment). As an institution gains creditability, the greater becomes the visibility of the institution as interest in the university's products is stimulated and the university increases its marketability. The increased

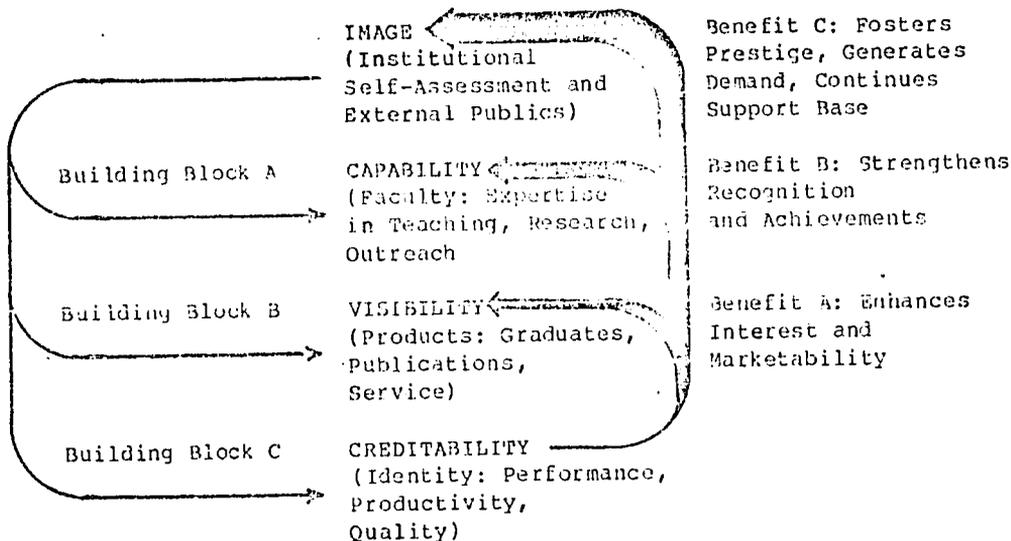
visibility tends to enhance the capability of the university as faculty are recognized and called upon for consultation. As the capability of the university is strengthened, its image changes again. The institution becomes more self-assured and more respected by its publics and peers who increase their demand for use and assistance from the university. The support base of the university should become stronger as the institution is perceived now as being indispensable. Over time, illustrated here in five year segments, the university should see this cycle continuing to grow resulting in a more dynamic organization fulfilling its mission and goals.

We perceive UCD to be in the level 2, emerging stage, which is characterized by a concentration on establishing the foundation or basis of the institution and, thereby, the focus is primarily inward on this task. At the end of the second five year cycle, the image of the institution should be quite different, for example, toward extending horizons, pursuing further expansion, and encouraging innovation.

UNIVERSITY INSTITUTION - BUILDING TIERS
A SUGGESTED CONCEPTUAL FRAMEWORK

E.g., Start
Level 2: Internal
Perspective Focus
on Foundations

E.g., Complete
Second 5 years
Horizons
Expansion
Innovation



Evolutionary Process:

- Level 1: Creating
- Level 2: Emerging
- Level 3: Maturing
- Level 4: Mastering
- Level 5: -----

Time and Growth
Pattern:

- First 5 years →
- Second 5 years →
- Third 5 years →
- Fourth 5 years →
-

A P P E N D I X

TEAM PERFORMANCE: A CHRONOLOGICAL SUMMARY OF ACTIVITIES
OF UNIVERSITY OF FLORIDA TEAM 1982-1986

Project Purpose: To assist the GRC to create an agricultural university capable of training managers, researchers, planners and teachers who can staff effectively the agricultural support institutions of Cameroon.

1982

Project Agreement was signed by USAID and GRC on July 15, 1982.

A week later, July 22, 1982, a technical assistance contract was signed by USAID and University of Florida.

From August 5 to September 9, the Party Chief was in Cameroon initiating start-up of the project with USAID Project Officer and the Director General of UCD.

Party Chief opened a project account with Chase Bank, Douala; negotiated for several duplexes for housing team members.

Discussed plans for visits to Florida by USAID Engineer and an outside architect, to view laboratories and technical building designs.

1983

With the arrival of two more team members on January 9, 1983 the team was ready to begin the first phase of the project.

Offices were set up in a faculty house and a series of organizational meetings were initiated.

A committee for on-going evaluations of the project was one of the early considerations. Ministries of Education, Agriculture, Animal Breeding and Industries, Economic Affairs and Planning, and the Delegate General of DGRST, were invited to participate. Other members of the committee would come from USAID, the University, and the Florida Team.

Integration of the Florida Team into the University faculty was begun, and they were given membership on faculty committees. By July 1983, logistical support was complete for increasing efforts at implementation of the project. Recruiting efforts and participant training dates were accelerated.

Five faculty members of UCD were evaluated for participant training and nominated for training.

1983

Construction plans for laboratories delayed because of lack of agreement between architects and engineers. Space allocations still in progress.

Director General of UCD was appointed Minister of Economic Planning and Industry in April, and was replaced a month later.

Assistant Director, International Programs, IFAS, University of Florida, visited Cameroon May 12-24, to confer on administrative and financial details about participant training and legal issues regarding funds released to Chief of Party. He also agreed to implement weekly telephone calls between University of Florida and the project office to facilitate University support. Weekly staff conferences were also initiated by the Team to improve communication and morale. A slide-tape show prepared for the President's visit to Florida was brought to Cameroon at the request of members of the President's party for showing in Cameroon. The Minister of Agriculture presented the multi-media show to an invited audience from several GRC ministries.

The first research seminar, involving research agencies, took place on the Dschang campus. The seminar included participants from UCD, IRZ, IRA, Ministries of Agriculture, Plan and Industry, Livestock and the Florida Team. Invited papers were presented and extensive discussions followed. Evaluation committees made recommendations after the conference. A proceedings for the seminar was published.

Briefing papers on various aspects of university development were prepared for the new Director General.

A full time secretary was recruited and employed.

President, University of Florida, visited Cameroon at the invitation of the Presidency. He was joined by Vice President of IFAS in a visit to Dschang to discuss and promote project implementation. Contract for A&E work for the project was finally approved on September 9.

Plans to move ENSA from Nkolbisson to Dschang within two years were announced by the Director General.

A financial analysis of in-country expenditures was discussed and a budget projected for 1983-84. Copies were prepared for UF Backstop Officer and IFAS Business Officer.

Weekly conferences with the Director General were initiated and found to be very useful.

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1984

A considerable amount of time went into the review of A&E preliminary plans for developing the UCD campus and the Bansa demonstration farm. A new USAID Engineer was briefed on the status of A&E work. Work by the contract A&E firm of Raleigh, N.C. was lagging seriously.

An in-depth review of the project's implementation was undertaken by the Team in concert with the USAID Director and the Project Manager. Areas of concern included: participant training, status of the ENSA move and 1984 upper ITA course offerings, faculty qualifications, and a common core curriculum for ENSA and upper ITA students. The next class of ENSA was to enter at the UCD campus on October 1, 1984.

The budget submitted by UF was amended to include the position of counterpart to superintendent of the garage and motor pool as recommended by UCD and approved by USAID. Deputy Director General was briefed for his tour to the U.S., February 23 to March 25, 1984.

Serious problems with the garage and motor pool at UCD necessitated assignment of new personnel and a reorganization to improve management and control.

Specifications and bids on a 24 place language laboratory were received from UF.

A joint plan-of-work conference was held between USAID, UCD and the Florida Team. Tasks were identified, personnel named, and commitments established for the next two years.

A meeting between UF Team, ARD, and a consultant on strengthening Cameroon Extension Services, was held to discuss potential for improving extension in Cameroon. A briefing paper was prepared for the Director General and ARD.

An agricultural engineer was recruited and expected to be on site in June. A research extension specialist and three teaching assistants were also recruited. A librarian arrived for a short tour of duty, June 15-August 15, 1984. The Administrative Specialist was medically evacuated. The Director General and Team Leader went to the U.S. on March 28 to study administrative structures of U.S. universities.

Participant Trainees were processed for U.S. training. Two were sent to UF for English training. One went to University of Wisconsin for Ph.D training. Sixteen additional UCD faculty members were nominated for training, nine for the M.S. and seven for the Ph.D degree.

Reviews of A&E plans for the two Demonstration Farms at Bansa and Dschang continued to require a lot of time.

A new survey of the campus area was initiated. Work progresses on the UCD administrative building and the World Bank financed buildings. Briefing papers were developed for the Director General and other administrators concerning the long range water plan, university administration, needs for a common core curriculum, and status and needs of the UCD library.

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1984

An in-depth review of UF Project was conducted by the Mission Director and the Project Director of USAID. Areas of concern were participant training and curriculum development. A UCD committee was appointed to make final recommendations.

Director General of UCD completed an orientation tour of four Land Grant universities in the U.S. and concluded his tour with visits to AID/Washington and the National Association of Land Grant Colleges and State Universities. The tour was designed to give an overview of the administrative organization of teaching, research, and extension, as well as faculty evaluation techniques and reward systems. University support units such as libraries, bookstores, and alumni associations were also of interest. The role and function of a college registrar were especially noted.

The first formal internal evaluation of the project took place in May and the final report completed in August.

A Veterinarian from the University of Florida, Dr. Gibbs, presented a seminar at UCD in response to a request for assistance in curing or controlling the spread of African Swine Fever, also Blue Tongue in sheep and Rinderpest in cattle. Faculty members, students and personnel from livestock related ministries were in attendance.

Project Manager and an AID representative met with project personnel and UCD administrators to obtain suggestions for the July meeting of the International Agricultural Education Conference in Yaounde. Both the Director General and the Chief of Party agreed to develop papers for the conference.

A study of the curriculum for ENSA and ITA was begun, with an analysis of course offerings as a first step in developing an appropriate curriculum for UCD.

The wife of a technical assistant was employed on a short term basis to help prepare 14 participant trainees for graduate training in the U.S.

An extension specialist met with project personnel to discuss his proposed plan for strengthening agricultural extension services in Cameroon. Resulting suggestions were helpful in developing his final report.

The UF Team and UCD worked out an agreement to have UF provide three teaching assistants for the 1984-85 school year. A UCD seminar on Economic Development was presented on the UCD campus July 16-19. This was the second annual seminar, and was very well attended by UCD faculty and personnel from government agencies and ministries. A representative from USAID/Yaounde and a consultant on extension services gave papers.

An international workshop on agricultural education, sponsored by AID/Washington, took place in Yaounde July 23-27. Two UCD faculty members in Rural Education served as discussion leaders. Papers were presented by the Director General, UCD, and the UF Chief of Party.

1984

Twelve participant trainees were given orientation for departures to the U.S. in August and one trainee departed in early September for graduate work in extension education at Ohio State University. Two TDY people completed two months of TDY and submitted reports on curriculum development and an interim library.

The Agricultural Engineering Technical Advisor began planning for a Rural Engineering Department. Plans included use of two teaching assistants from UF. One to teach at ITA and one at ENSA, each for a one-year tour.

Two IBM-PCs and some software were received and installed. Minor repairs were made to get the units functioning properly. The Agricultural Engineer trained office personnel on the use of the Word Processor, and planned workshops for faculty training, particularly on use of the statistical package to support research.

An experienced curriculum organizer arrived in late August and began work on recommendations for curricula for the Ingenieur Travaux track and the Ingenieur Agronome track. Recommendations were based on earlier reports. Furthermore, courses were studied to determine logical sequencing and scheduling. At the same time, work was progressing on administrative reorganization, operating policies and training needs. Formal reports were prepared by team members to be used at an administrative retreat with UCD administrators in October.

1985

Plans for campus facilities continued and need for a campus Master Plan became a priority. Perimeter fencing, based on a recently completed campus map, was recommended.

Project personnel and UCD faculty were involved in conferences concerning fertilizer needs in Cameroon and in a Farming Systems Support Project International. Administrative and curriculum organization and development continued.

Transfer of ENSA to Dschang commenced.

Plans to initiate the 4 and 6 year cycles in October 1985 were developed, with emphasis on Practical training. A two-year common curriculum would be required of all students and specialization would occur during the 3rd and 4th years. Those graduating after 4 years would be required to work in Cameroon for 2 years before being admitted into the last 2 years leading to the equivalent of an MS degree.

Accordingly, the UF Team developed flow charts to show how the academic transition would take place. Committees were appointed to assign spaces for both faculty and students as to use of classrooms, laboratories and offices, also for the integration of ENSA into the system. The UF Team offered technical assistance to ENSA to facilitate the move to Dschang.

1985

Plans to locate all UCD faculty on the campus and do away with part-time visiting faculty facilitates development of course schedules and more appropriate sequences than existed previously.

The revised educational program was taken into account by the A&E specialists.

Plans were finally reviewed. Problem areas were identified and a report presented to the Presidency.

A planning committee prepared a development plan for the UCD demonstration farm. The absence of field support facilities was recognized.

Two IBM computers and word processors were installed in the project office. Workshops for faculty were conducted on the use of these new machines. An interim library was completed on the lower campus capable of accommodating the ENSA library collections and an additional 5000 volumes of a core collection recommended for small agricultural libraries. The core collection cost was estimated at \$300,000. UCD provided most of the furnishings to make the library functional. A participant trainee was sent to University of Indiana to pursue an MS degree in Library Science.

A 13th month bonus for Cameroonians employed by the UF Project was offered to worthy workers in conformance with local government policy.

Organization and development of the Rural Engineering Department and the related curriculum option was continued.

Staff conferences and internal communications were established on a regular basis.

Plans for installation of the Language Laboratory and training of an operator were completed. Approval to transfer ENSA to Dschang was received in mid 1985, and admission of students to the new 4-year schedule was initiated.

Library was made functional and UF was asked to provide a library technical advisor. Supporting staff were found to be lacking in ability to read both French and English. There was a shortage of bilingual clerks.

Time consuming efforts at curriculum development continued.

Construction of four buildings for faculty offices and laboratories, a student common building, a library, and a large classroom were completed. The World Bank facilities approached completion construction started on new administrative building.

Delays in finalizing A&E plans and the Master Plan continued to impede progress.

1985

Thirteen faculty members were named to begin graduate studies in the U.S., making a total of 32 participants in the pipeline. Personnel recruitment and assignments continued to occupy a lot of time.

Replacements arrived for the Research and Extension Specialist and for the advisor in Rural Economics.

Recruitment began for an advisor for Rural Education and a manager for the garage and motor pool. Six teaching assistants requested from U.F.

A Department Chairman of IFAS visited the project in March and participated in development of the Rural Engineering Department. He and the Agricultural Engineering Technical Advisor presented papers at a regional conference on agricultural mechanization sponsored by UNESCO and UCD.

A UF technical assistant presented a paper and served as reporter and panelist at a workshop on Fertilizer Research and Technology Transfer. In consultation with USAID, salary schedules for Foreign Service Nationals were adopted in place of the Private Scale of the Cameroon Labor Code. The new pay schedules became effective April 1, 1985.

Efforts continued to develop course syllabi, evaluate course content, and reduce duplication.

Teaching support materials such as slides, models, charts, etc., were ordered to enhance teaching of the basic core courses.

Courses for the Agricultural Engineering option were developed.

The Chancellor Emeritus, State of Florida University System, and the current chairman of BIFAD visited UCD and presented seminars in Dschang and Yaounde. They also advised the project on some priorities for institutional development. Strengthening extension services in Cameroon was given high priority.

Plans of work were developed by each member of the UF Team and reviewed by UCD, USAID and UF.

Three members each from the UF Team and UCD participated in an ARD workshop in Yaounde with the purpose of presenting an overview of USAID projects in Cameroon and to become better acquainted with personnel staffing the projects. Research and Extension were also emphasized at the workshop. Discussions centered around Cameroon extension services and Farming Systems Research as an approach to strengthening extension services.

Recruiting for teaching assistants continued, particularly in the areas of Ag. Engineering, Ag. Education and Extension, Agronomy, Soils, and Ag. Economics.

1985

Director of ENSA went on an orientation tour to the U.S., including visits to three university campuses. The new President of UF made an official visit to Cameroon accompanied by the Vice President in early August, 1985. He expressed enthusiastic support of the project and hoped to develop relationships between UF and UCD far beyond those expressed in contractual negotiations.

The Language Laboratory was made operational. The UCD administration building was completed and transfer of offices to the building began in September. The World Bank buildings were completed and an access road built.

Considerable effort has been devoted to curricula development and to the evaluation of course content and teaching methods.

The use of visual aids strongly encouraged and a teaching resources center established to make these visuals available to UCD instructors. A UF technician concentrating on food crop production and preservation visited IITA in Ibadan, Nigeria, to observe research on African food crops. He subsequently developed a course on Harvest Handling of Food Crops to be offered for the first time at UCD. (Research shows that losses of food crops range from 5% to 40% in Cameroon because of poor handling and storage).

Recruiting and employment of a superintendent of the garage and motor pool was accomplished.

1986

Several demonstrations of the Language Laboratory capability were presented to the UCD community. In addition to standard language tapes, USIS Douala loaned tapes of Voice of America programs on agriculture and other subjects.

An orientation session for the benefit of UCD faculty and administrators was presented to acquaint them with the availability and use of the many teaching aids on hand at the Teaching Resources Center.

To encourage use of visuals, portable projection screens were installed, necessary electrical outlets provided, and drapes hung to control light.

A second participant trainee was accepted for graduate study in Library Science at Atlanta University, Georgia.

The Assistant Director of International Programs, IFAS, UF, and the backstop for the project visited in November. He participated in the mid-year review, met with team members, advised the Chief of Party on personnel and financial matters, and met with UCD administrators to facilitate future communications. He also met with the USAID/Yaounde Director and staff to discuss contractual matters.

Course and teacher evaluation techniques are being introduced and accepted. Evaluation questions pertain to course objectives and content, and to effectiveness of instructors.

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1986

Evaluations are a new concept for the Cameroon educational system. It is catching on very quickly and is being extended to include colleague evaluations when considering awards or promotions.

Operations of the garage and motor pool are being improved. This is a very complex and important function in the university system. Trained and responsible personnel are difficult to find.

Another 9 faculty members have been nominated for studies in the U.S.

A participant trainee developed a research project to be performed in partial fulfillment of her Ph.D in Cameroon. Ohio State would not approve the project proposal unless the Committee Chairman would come to Cameroon to provide some supervision. This posed a serious problem. Fortunately, a compromise resulted in having the project pay for international travel of the major professor and UCD paying in country travel and per diem costs.

A retreat was devoted to consideration and recommendations for the common core curriculum, staffing requirements and sequence of courses.

The Director General accompanied the President to Washington, D.C. The D.G., accompanied by the minister of Agriculture, then went to the UF to meet with administrators concerning the Land Grant System. Budget needs for the 1986-87 budget year and to the end of the project, December 1989, were reviewed in collaboration with the USAID Project Manager. This included an estimate of participant training costs, expected to extend beyond the project completion date.

Six teaching assistants were requested to fill gaps in the teaching programs for the academic year 1986-87.

A catalogue listing teaching support materials available from the Teaching Resources Center has been prepared and distributed to faculty members.

The problem of too many adjunct faculty still persists; however, not to the extent that it existed in the previous three years.

A revolving account of \$200,000 was established at Chase Bank, Douala, to solve the serious cash flow problems that have plagued the project since its inception. Clearance of commodities through customs at the Port in Douala has been a problem. Conferences to discuss the problem resulted in a series of recommendations to be submitted to UF for action.

The development of UCD has had an impact on the town of Dschang, particularly on traffic and roadways. Accordingly, the Ministry of Urban Affairs notified the UCD that the Ministry's department of town planning has the authority to review the Master Plan for the University before final approval can be granted.

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1966

The new supervisor took over full responsibility for the garage and motor pool. Remodeling and instituting security measures were given priority at the outset.

The wife of a teaching assistant was temporarily employed as Librarian while awaiting the arrival of a library technical advisor who had helped plan the library.

An agricultural orientation tour to the U.S. for Dr. Tchala Abina was arranged by Dr. Warren Prawl, USAID contractor representative who accompanied him. They were joined by Mr. Meka, Director of Training, Ministry of Agriculture.

A progress report meeting with BIFAD, in Washington, D.C., on May 14, was attended by The Director General, the Assistant Administrator for Africa and the Vice President, IFAS at UF. The Assistant Administrator stated the UCD was regarded as a flagship university in Africa, and that AID was committed to its long term support. The Director General reported on the extent of in-country support for UCD which was very impressive to BIFAD and AID personnel.

A media center, consisting of a production and print shop for university publications and a photography laboratory, is being planned. Many university publications, including research reports, lab manuals, student information brochures, circulars and extension type leaflets will be produced at the Media Center when it becomes functional. The photographic capability will allow for visuals in publication, for classroom use and for extension work.

Regularly scheduled administrative conferences were renewed after a lapse of some time. This involves the UCD administration, USAID/Yaounde administration and the Chief of Party.

Official visits to UCD were quite numerous in 1966. These included: the American Ambassador, the USAID Director, the Minister of MESRES, the Director of International Programs, IFAS, UF; the Deputy Director USAID; the Agriculture Officer, USAID; the Director of USAID/Ouagadougou with an important group from Burkina Faso; Assistant Dean and Director of Home Economics, IFAS, UF; Human Nutritionist, IFAS, UF; Assistant Dean of Veterinary Medicine, UF; Assoc. Professor, Agr. Education, Ohio State University.

The Plant Science and the Agricultural Engineering technical assistants completed their tours and departed the latter part of June.

Status reports were requested for each trainee in the U.S. Five or six are expected to return before the year's end. A group of nine trainees are expected to leave for the U.S. in August.

AV

1986

Plans of work for the coming academic year were requested of each area of technical assistance and a formal review process was held with UCD, the Project Manager of USAID, and a representative from the University of Florida.

Six teaching assistants finished their assignments for the academic year and four of them returned for graduate study in the U.S. Teaching assistants are required to fill in for participants pursuing advanced studies in the U.S. Teaching areas requested were:

Agricultural Economics, Agricultural Engineering, Mathematics, Plant Sciences and Physics. UCD requested a technical advisor for the Library. USAID agreed and UF recruited for the position. The Library now has about 15,000 volumes. The Librarian assumed her duties and proceeded immediately to make ready for the new academic school year.

The Language Laboratory has already delivered about 1000 hours of French and English instruction.

A trainee has been admitted as participant trainee in Dairy Technology at Kansas State University.

All students enrolled in U.S. universities were evaluated. Two were having difficulties. One was terminated and the other placed on probation. Two are doing their research in Cameroon for their Ph.D requirements. Two students, one completing an MS in Agricultural Engineering and the other a Ph.D in Agricultural Extension and Education, returned to assume their faculty positions at UCD.

Motorpool remodeling and improvement of management are continuing.

The project provided, at the request of USAID/Yaounde, a chauffeured 4-wheel drive patrol vehicle to assist the U.S. Emergency Technical Assistance Team investigating the Lake Nios disaster.

A research committee has recommended that UCD develop a Plant Tissue Preparation Facility and a Central Analytical Laboratory. A building suitable for the laboratory has been identified subject to some modifications. A small concrete block building for a drying facility will be needed in conjunction with the Plant Tissue Preparation Facility.

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