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FINAL PROJECT EVALUATION
THE AGRICULTURAL EDUCATION PROJECT

No. 631-0031

University Center Dschang

Prepared for:

**The U.S. Agency For International Development
USAID/Cameroon**

by

**Robert W. Kleis - Team Leader
Univ. Administrator and Agricultural Engineer**

**Donald R. Isleib
Univ. Administrator of International Programs**

**J. Gerald Neptune - Agronomist
Professor and Development Specialist**

Under

**REDSO/WCA Indefinite Quantity Contract
No. 624-0510-I-00-9039-00
Delivery Order No. 4**

April 1990

EXPERIENCE inc.

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Executive Summary

The Agricultural Education Project (AEP) began in 1982 for the purpose of establishing a Land-Grant type university adapted to the needs and conditions of Cameroon. The basic concept of an integrated agricultural institution of higher education, relevant research and service oriented outreach represents a radical departure from the traditional French-based system of higher education. The ultimate goal is to enhance the productivity of the agricultural sector through the development of human resources, applicable technology, and enterprise efficiency.

The AEP has been a principal mechanism for the development of this unique agricultural institution, the University Center at Dschang (UCDs). It has been implemented through a Title XII collaborative assistance mode, contracted with the University of Florida (UF), funded by USAID. This, plus major commitments by the government of the Republic of Cameroon (GRC), and significant inputs by France, Belgium and the World Bank have led to development of a fledgling but dynamic University Center at Dschang, the only university level agricultural institution in Cameroon.

The complex institutional development process has involved modification of national statutes, merging of three separate earlier programs of post secondary agricultural education, major faculty development efforts, curricular development, administrative structure consolidation, definition and acceptance of the broadened three-part mission, facilities consolidation and construction, and operational infrastructure development.

This final evaluation of the AEP covers accomplishments since 1982 and the current status as the UF/USAID contract, nears completion. It also addresses immediate issues and need, and offers recommendations for continued institutional development. Finally, it describes the need for Phase II and offers specific suggestions as to issues and concerns to be addressed, as well as design concepts and contracting recommendations.

Accomplishments and Present Status

Of the eight general outputs targeted by the original AEP design and subsequent amendments, six are judged to have been accomplished.

1. A new consolidated and streamlined academic administrative structure has been developed and implemented with well qualified Cameroonian personnel.
2. A new four-year undergraduate curriculum with five areas of specialization has been developed and activated with a first year class in 1989. This replaces a three year program at Dschang and a five year program at Yaouride and physically locates all students and faculty at the UCDs campus.
3. Fifty young faculty members were provided advanced degree training at 22 different U.S. universities between 1984 and 1990. Six Ph.D. and 28 M.S. candidates have completed their programs and returned to UCDs. Others are yet in process. Short term special training for administrators, faculty and staff involve 186 individuals and 2,282 person days. Full time faculty have been increased from 62 to 116 and part time reduced from 80 to 20.
4. UCDs has strengthened and expanded its linkages and collaboration with sister agencies, organizations and institutions, both nationally and internationally. This continuing effort is important to quality and effectiveness of all three element of UCDs' mission, teaching, research, and outreach.
5. The campus farm has been expanded and improved with fencing, terracing, irrigation, livestock facility improvements, and fish ponds (in process). It is used extensively for teaching programs and for limited research work. UCDs has other lands within commuting distance of the campus which can be utilized as needs develop and resources permit.
6. In the area of maintenance, there has been much improvement in organization, supervision, facilities and equipment. The vehicle fleet has been reduced in number and increased in operability. An inventory control system for supplies, parts and tools is in place. The critical need now is for skilled craftsmen and budget, for accumulated deferred maintenance.

Research and outreach programs are in very early stages of development. They depended much upon the return of advanced degree participants. There are numerous noteworthy activities in both research and outreach. However, these cannot yet be regarded as established programs of deliberate design and focus. Priority must be given to developing these programs and harnessing the strong training and enthusiasm of a young faculty.

The facilities development output of the AEP has not been fully realized as originally scheduled. But, most significant is the fact that essential facilities for teaching, research and outreach programs are now in place or in process for realization by 1992.

Other Issues and Recommendations

In 1986 a precipitous drop in export commodity prices and a great public sector cost burden caused a continuing economic crisis in Cameroon. Economic recovery and development must be based upon the resources of the country which are land, climate and people (80% rural). This means agriculture and agri-business, which must be developed through technology generation, dissemination, and utilization by trained people. UCDs is unique for serving this need and it is, therefore, not part of the problem but an essential part of the solution and its continued development is a priority need.

The following items are not all-inclusive of the 12 issues addressed and the 22 recommendations made but they identify briefly those of greatest and most immediate importance.

- The UCDs must proceed promptly to develop and implement an effective financial management system.
- The UCDs should proceed to define a few high priority areas for research emphasis which are relevant to needs of Cameroon and within which young, well-trained scientists can pursue specific research projects.
- The outreach component of UCDs' mission is yet lacking clear definition in terms of constituencies, relationships, mechanisms and subject matter foci. A young competent faculty has much to offer even while research outputs are being generated.
- The multi-national regional role, identified for UCDs, should be defined and implemented to complement the primary mission of serving Cameroon.
- A system of faculty position descriptions, annual plans of work, annual accomplishment reports, and annual performance evaluations should be promptly implemented.
- Continued curricular development and teaching improvement are urged. Specifically needed are course descriptions and outlines, practicum modules, review of the stage requirement, text books, and student evaluations of courses and instructors.
- The roles of women (and youth) in the agriculture of Cameroon should be given attention in the programs of instruction, research and outreach.
- Consistent with the national goal of reducing the scale of the public sector and emphasizing development of private enterprise, the UCDs must orient its teaching, research and outreach programs even more heavily toward the private sector.

- All public agencies in Cameroon are strongly urged to seek mechanisms of revenue generation. This is very appropriate to a number of functions within UCDs, assuming authority to retain and utilize such revenue. However, it is urged that such initiatives be kept in perspective and consistent with the basic missions of the UCDs.

Considerations for Phase II

The evaluation team strongly and unanimously recommends that there be a Phase II of the AEP. Institution building is a long process. The planners of the AEP initially suggested a 20 year time span. In the eight years of Phase I, the UCDs has made impressive progress, but it is not yet ready to move forward without external assistance. To end U.S. assistance now would very likely be to forfeit much of the accomplishment to date. This promising young institution would almost certainly fall short of its unique potential for serving Cameroon and the region.

The issues and recommendations cited above along with others included in the report should be elements of Phase II design and implementation. There are also some items which this team recommends not be included in Phase II, e.g., agricultural engineering curriculum, major enrollment increase, MS program emphasis, Ph.D. program pursuit, outlying farms development, and major construction.

It is the evaluation team's judgement that:

- Phase II should be planned for a six year period.
- Long term technical assistance should be scheduled in a phasing down mode.
- Increased levels of short term, repetitive consultancies should be provided, using persons already familiar with UCDs whenever feasible.
- Provision should be developed for post-project linkages, both institutional and individual.
- The collaborative assistance contract mode should be continued.
- Based upon its performance in Phase I and the quality of its team as observed, the UF/FAMU should design and implement Phase II.

The evaluation team perceives UCDs as a powerful agent of change for Cameroon. To achieve this role, it is imperative that Phase II be appropriately designed and implemented.

MESIRES Minister Abdoulaye Babale; Director of Higher Education, Jean M'Foulou; UCDs Director General, Rene Owona; and others all agree that UCDs should serve a regional role. This is already happening in several limited ways, ranging from leadership for endorsement of applied agricultural research as fully accredited by the Association of Faculties of Agriculture in Africa (Abidjan, January 1990), to the admission of undergraduate students from Chad, to the new INADER curriculum in September, 1989.

The challenge to UCDs is to maintain its focus on the mission already adopted and to sustain the strategies that support Cameroon's national needs, while at the same time accommodating the expectations of national and international leaders for the increasing regional role of UCDs. The ethnic and agro-climatological diversity of Cameroon provides a range of opportunities for studies, research, and outreach relevant to the interests and needs of regional scholars. It is reasonable to extend these opportunities, which reflect the mission and strengths of UCDs to others in West and Central Africa. At this stage in the development of UCDs, however, its regional role should be secondary and complementary to its primary mission as a Cameroonian national institution.

**FINAL EVALUATION
OF THE CAMEROON AGRICULTURAL EDUCATION PROJECT
(631-0031)**

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Final Evaluation of the Cameroon Agricultural Education Project (631-0031)

Introduction

This is the final evaluation of the Cameroon Agricultural Education Project (631-0031), which was initiated with the goal of increasing overall agricultural production in Cameroon by increasing farmer productivity. To achieve this goal, the Project was designed to support development of a new agricultural institution of higher learning known as the University Center at Dschang (UCDs), based on the U.S. Land Grant university model, which will provide practical knowledge and services to farmers to assist them to increase production and income.

The UCDs was intended to train managers, researchers, planners and teachers for governmental and parastatal agencies of Cameroon.

Requirements for success of UCDs include establishment of a modern curriculum, combining theory and practice, which prepares graduates for service in governmental and parastatal entities; a competent faculty, combining scholarship and practical experience; and facilities appropriate to the needs of students and faculty.

The key Land Grant element of service to clientele through application of technical, managerial, and educational skills is paramount in Project objectives. Primary project outputs identified were:

1. A revised academic and administrative university structure
2. A revised academic curriculum
3. An upgraded faculty and staff
4. An integrated research and development (outreach) program
5. Linkages between UCDs and client agencies and entities
6. Demonstration farms as teaching, research, and outreach resources
7. New facilities
8. Maintenance and motor pool units

Based on changes in the economic environment in Cameroon, and on experience gained during seven years of Project activity, new objectives were adopted for the 1990-91 Project Amendment. These include expanded emphasis on research, a participatory role in extension, a broadened scope of continuing education involvement, and a new role in preparing graduates for work in the private sector.

Evaluation Objectives

Principal objectives of this final evaluation are:

1. Description of the current project status
2. Determination of the degree to which project outputs have been achieved
3. Identification of particular problems and issues in project implementation
4. Recommendations for correcting current deficiencies
5. Recommendations for future project directions to be undertaken in Phase II

The sections which follow describe the Evaluation Team's efforts to meet these objectives.

The Evaluation Process

The Evaluation Team spent six days in Yaounde in attending preliminary background meetings and reviewing numerous relevant documents provided by USAID/Cameroon. These documents and others are listed in the last chapter, Reference Documents Used. The original project documents (1981-82) were especially useful as reference points. Numerous subsequent evaluation and special reports provided extensive background information about needs, constraints and progress of the project.

The next two weeks were spent at UCDs in Dschang and related facilities in the region. The first half of this period was devoted to further documentation review and to meetings with:

- Administrative officials of UCDs
- All UCDs academic Department Heads
- Student body representatives
- USAID/AEP team members
- French and Belgian program specialists
- UCDs graduates in the field
- Returned participants
- Various others

Considerable attention was given to first hand observation of facilities, program operations, support functions, field projects and clientele conditions and needs.

The second week at UCDs was devoted primarily to the analysis of documents gathered, to selected follow-up discussions and further site visits and to some preliminary formulation of report elements.

During week four in Yaounde team members had further interviews with the Minister of Higher Education and other key ministry officials, further analyzed information collected, developed the first draft of its report, made an oral presentation at USAID/Cameroon and worked on refining its report and recommendations.

Early in week five the team returned to UCDs to distribute the report drafts, have some wrap-up interviews, make an oral presentation and entertain discussion and consider suggestions. Late in the week, the report was finalized and submitted to the USAID in Yaounde.

Team Composition and Support

The three person external team, provided through an IQC with Experience Incorporated under Delivery Order number 4, was composed of:

Dr. Robert W. Kleis: Executive Dean of International Affairs, University of Nebraska. (Agricultural Engineer, Agricultural Experiment Station Director, development assistance, industrial consulting, university administration)

Dr. Donald R. Isleib: Associate Dean and Director, Institute of International Agriculture, Michigan State University. (Agronomist, industrial research, state government administration, international research coordinator, development assistance)

Dr. J. Gerard Neptune: Assistant Director, International Agricultural Programs, University of Missouri. (Agronomist, teaching, research and administration, USAID foreign service/Africa, university program development)

Effective assistance and support for the team was provided by USAID/Cameroon Project Officer, Dr. Max Williams. Mr. Robert Hellyer, Program Officer USAID/Washington, served as a special resource. Extensive and able secretarial support was provided by Ms. Scholastica Agbor.

Director General Rene Owona of UCDs and his staff were very cooperative and supportive. Dr. François Tchala Abina, Director of INADER, and Dr. Simon Lyonga, Chief of Research and Extension, provided highly valuable inputs, as did many other UCDs faculty. Drs. François Kamajou and Ruben Njwe were designated to assist the team with support and contact arrangements, and were most helpful. Dr. Joseph Nkwain Sama, Chief of Cooperation Relations, arranged numerous interviews and meetings with UCDs faculty, administrators, students, and returned training participants. Dr. Ajaga Nji accompanied team members to Bamenda and Bambili.

The USAID Agricultural Education Project advisory team members were also very cooperative and generous with time, information and logistical support. Dr. Peter Hartmann, Chief of Party; Dr. William French, Research and Extension Advisor; and Dr. D. Mitchell Flinchum, Academic Advisor, not only provided valuable assistance directly but also arranged other sources.

The Evaluation Team is most appreciative of the extensive and objective assistance provided by all parties of this project in Cameroon.

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* * *

Background

The University Center at Dschang as the only university level institution for education in agriculture, broadly defined, has a multi-stage background that is significant to any analysis of its present and future functioning. These stages involve major shifts of location, institutional names, educational philosophies, scope of mission, technical breadth, constituencies and fiscal support circumstances. Changes in all of these areas have occurred since 1960, which has been a period of great growth in all sectors, including education clientele, educational methodologies and global interactions; conditions which required major adjustments and produced stresses in long established institutions of higher education throughout the world.

The Evaluation Team considered this background awareness important to its function. While experienced in agricultural educational institution development and operation in general, the team made a special effort to understand the unique evolutionary background of UCDs, which is summarized in the following sections.

1960 - 1982

The Ecole Nationale Camerounaise d'Agriculture (ENCA) was created through Decree No. 60/121 of May 8, 1960. ENCA was established at Yaounde to train "techniciens de valeur" for various sectors of the rural economy in two - and subsequently in three - year programs.

In 1963 ENCA was integrated into the University of Cameroon as the Ecole Federale Superieure d'Agriculture (EFSA). A four-year Ingénieur Agronome program was initiated. The first graduates, in 1965, had started as ENCA students. Only five to thirteen graduated in each class for the next eight years.

Presidential Decree No. 71/DF/477 of September 21, 1971 established a four year process in which students first obtained a "Diplome d'Etudes Scientifiques Generales" after two years at the Faculty of Science of the Federal University of Cameroon. This was followed by two years at EFSA for the degree of Ingénieur Agronome. The EFSA became ENSA (Ecole Nationale Superieure Agronomique) in 1972. The graduates at ENSA were not regarded as adequately trained and oriented for agriculture, which led to still another adjustment.

Therefore the four year ENSA program was lengthened to five year programs for "Ingénieur Agronome" and "Ingénieur des Eaux, Forets et Chasses" by Presidential Decree No. 75/239 of April 3, 1975 in order to meet academic and technical requirements then considered necessary. This Decree also authorized a three year program called "Ingénieur des Travaux" in Agriculture and Forestry. The initiation of the Ingénieur des Travaux 1 program was delayed, however, until 1977. Also in 1977, the government authorized the creation of university centers at various locations in addition to Yaounde. The University Center at Dschang, located about 425 kilometers northwest of Yaounde, was created by Presidential Decree No. 77/108 of April 28, 1977. A few months afterwards, the Institute of Agricultural Technology (ITA) was also established at Dschang.

In May 1978 ENSA in Yaounde and the Institut des Techniques Agricoles (ITA) in Dschang were incorporated into the UCDs. ENSA was to be transferred to Dschang as soon as possible. Meanwhile, ITA established a three year "Ingénieur des Travaux Agricoles" program and a two-year "Agricultural Technicians" course at Dschang. The UCDs is situated on 190 hectares on the outskirts of Dschang in the Western Province. Additionally, it has two large tracts of nearby land: 300 hectares at Bansoa and 130 hectares at Djoutittsa, some 30 and 10 kilometers respectively from Dschang. All UCDs programs are bilingual.

The Western Province is a major agricultural province. Its productive volcanic soils have attracted settlers for many generations. It is today the most densely populated of the ten provinces with more than 75 persons per square kilometer and a rural-urban ratio of about 80-20%.

In 1979-80, USAID/Cameroon developed plans to provide development assistance to UCDs. In 1981, the University of Florida was selected on a competitive basis as the Title XII institution to design that assistance, to be provided through the Agricultural Education Project (631-0031) under the "collaborative assistance mode." That design led to the Project Paper, signed in June 1981, the Project Loan and Grant Agreement, July 15, 1982 and the implementation contract with the University of Florida (UF), July 21, 1982. Subsequently, a subcontract with Florida A and M University was negotiated by UF.

1982 - 1986

The Agricultural Education Project Paper defined the program goal as "to increase overall agricultural efficiency by increasing farmer productivity." The project purpose was to:

"Assist the GURC (GRC) to create an agricultural university capable of training managers, researchers, planners, and teachers who can effectively staff the support institutions of Cameroon."

In furtherance of this purpose, a six year collaborative assistance mode contract with the University of Florida was executed by USAID in July, 1982 to provide eight primary outputs cited in the preceding Introduction.

The staffing level provided by the contract called for 571 person months in the field, 77 person months on the home campus, and 258 person months of local hire.

Funding for the life of this collaborative project included a USAID grant of \$16,670,000, a USAID loan of \$26,351,000, GRC in kind support of \$74,878,000, IBRD construction valued at \$7,000,000, Belgian contribution of \$8,100,000 and French technical assistance of \$2,720,000. The first contingent of the Florida team arrived in Cameroon in the winter of 1982-83 and became fully operational in mid 1983.

In earlier project documents, the U.S. Land Grant college system was cited as the model for development of UCDs, with closely linked components of teaching, research and outreach, and an emphasis on practical knowledge and service. In later documents, it is considered significant and appropriate to note reference to "adapted" Land Grant concepts.

Also in 1981, two external actions made changes in the project setting that had beneficial effects: (1) The Ministry of Higher Education, Computer Services and Scientific Research (MESIRES) was created. It was given responsibility for all institutions of higher education as well as scientific and technical research, thus unifying for the first time teaching and research. (2) A policy change permitted UCDs to accept ENSA students before there were placed in the Ministry of Agriculture, thereby allowing greater flexibility in selecting highly qualified individuals.

An in-house review of the project was conducted in 1984 by senior officers of UCDs, the University of Florida team, and USAID/Cameroon. In general, the evaluation found "that although significant strides have been made toward achieving the project objectives, that the University of Florida should now take a more aggressive stand toward introducing the changes mandated by the project." This statement was followed by fourteen specific recommendations.

Milestones of UCDs development progress to 1986 included:

- General acceptance by GRC policy makers and UCDs faculty of the mission of UCDs as the national agricultural university integrating teaching, research and outreach functions.

- The development and acceptance of a long range master plan for facilities development.
- The physical relocation of ENSA to the UCDs campus in 1985.
- The establishment of the department as the basic academic administrative unit.
- The placement of thirty five participants in U.S. advanced degree programs, with another twelve in preparation for training.

The November, 1986 Threshold Evaluation by outside consultants concluded that "a significant momentum has been achieved in the development of UCDs. About half the project outputs still remain to be accomplished. These are closely tied 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."

1986 - 1990

This project period involved particular attention to the physical accommodation of ENSA, the integration of ENSA and ITA faculties and programs, major curricula development, administration and management effectiveness, and focus on recommendations emerging from the Threshold Evaluation. The construction of facilities, considerably behind the originally projected timeline, was activated.

Five special analytical studies and reports were executed, providing valuable and relevant future program development considerations:

1. Recurrent Cost Study of the UCDs
2. Demand for Graduates and other Services and Products of the UCDs
3. The Profile of the Student Body at the UCDs
4. Tracer Study of Graduates of the UCDs
5. Analysis of Accounting and Financial Planning and Management Systems (Feb. 1990)

The UF team was expanded to eleven to assist in establishing greater effectiveness and efficiency in such areas as facilities maintenance, equipment servicing, and financial management.

Also during this period seven participants completed Ph.D. degrees in the U.S. and returned to UCDs, and twenty eight Masters Degree participants completed their studies and returned. Three Ph.D. candidates did not complete their programs. Twelve advanced degree participants, starting in 1988, are still in U.S. institutions.

The new four year B.S. curriculum was developed and put into effect with the first class entering in September 1989, consistent with project goals and as authorized by Presidential Decree and Act of October 1988. That program combines the previous three year program of ITA and five year curriculum of ENSA. At the same time ENSA and ITA were abolished and absorbed into a single academic entity "The National Institute of Rural Development" (INADER).

A two-year program to train Technicians of Agriculture was continued on an as needed basis for areas of Crop Production, Animal production, Agricultural Engineering, Fisheries, and Natural Resources.

Along with continuing students of ITA and ENSA, the last of whom will graduate in 1993, the INADER faculty is involved with four different academic programs during the transition period. However, this does not add to the teaching load because of the system of programming instruction according to entering class units.

This project period (1986-1990) coincided with a crisis in the national economy due largely to sudden and severe drops in export product prices (petroleum, coffee, cocoa, cotton). This condition and other considerations have led to new national thrusts and structural adjustment initiatives that relate indirectly but significantly to UCDs' mission. A principal effect is a very much more specific orientation of UCDs to serving the needs of the private sector.

During the later part of the original UF contract period as amended in 1984, the project was extended for 18 months from December 30, 1989 to June 30, 1991. This extension, in effect at the time of this report, also involved an additional \$6 million grant for the project effort.

The University Center at Dschang and its Relationship to Other Higher Education Agricultural Training Institutions of Cameroon

The Ministry of Higher Education, Computer Sciences, and Scientific Research (MESIRES) is responsible for institutions of higher education throughout Cameroon, including the University Center at Dschang (UCDs). Technical training in agriculture is also provided by the Ministry of Agriculture (MINAGRI) and by the Ministry of Livestock, Fisheries and Animal Industries (MINEPIA.)

University of Yaounde

The University of Yaounde (UY) is the principal institution of higher education in Cameroon, both in size (29,000 students) and diversity (3 faculties and 5 professional centers). UY students are largely non-professional academic students, who are admitted on the basis of completion of accredited high schools. Many are supported by scholarships from the GRC, although graduates are no longer guaranteed employment by the government. In fact, many recent graduates are unable to find employment. After matriculation at UY, many students apply for admission to the professional curricula offered at the university centers, including UCDs. They are motivated to seek admission to the professional programs by better academic conditions and student life, higher scholarship stipends, and better prospects for employment as graduates of the university centers.

Professional centers of the UY offer curricula in medicine, engineering, teacher education, mass communications, and international affairs.

University Centers

Four University Centers, independent of UY, were created in 1976. These are:

- University Center for Business Administration at Douala (UCD)
- University Center for Food Technology at Ngaoundiri
- University Center for Languages and Literature at Buea
- University Center for Agriculture at Dschang (UCDs)

An organigram describing these institutions and their administrative relationships is shown on the following page. Candidates to the professional programs at university centers are admitted on the basis of competitive examinations that are developed and administered separately by each university center. Those who are admitted receive full scholarships and in the past have been guaranteed government employment. All jobs in Cameroon are classified by the government and must be filled by persons holding appropriate qualifications, based largely on educational achievement, each educational level having been assigned a classification status.

Ministry of Agriculture

The Ministry of Agriculture (MINAGRI) is responsible for 29 regional technical schools of agriculture that provide training of two years duration or less. Five two-year programs award Techniciens d'Agriculture (TA) certificates. One of these was located at Dschang. When ITA and ENSA came under UCDs, responsibility for the TA program at Dschang was also transferred to UCDs. In the future, the TA program at UCDs may be the only such program to be continued.

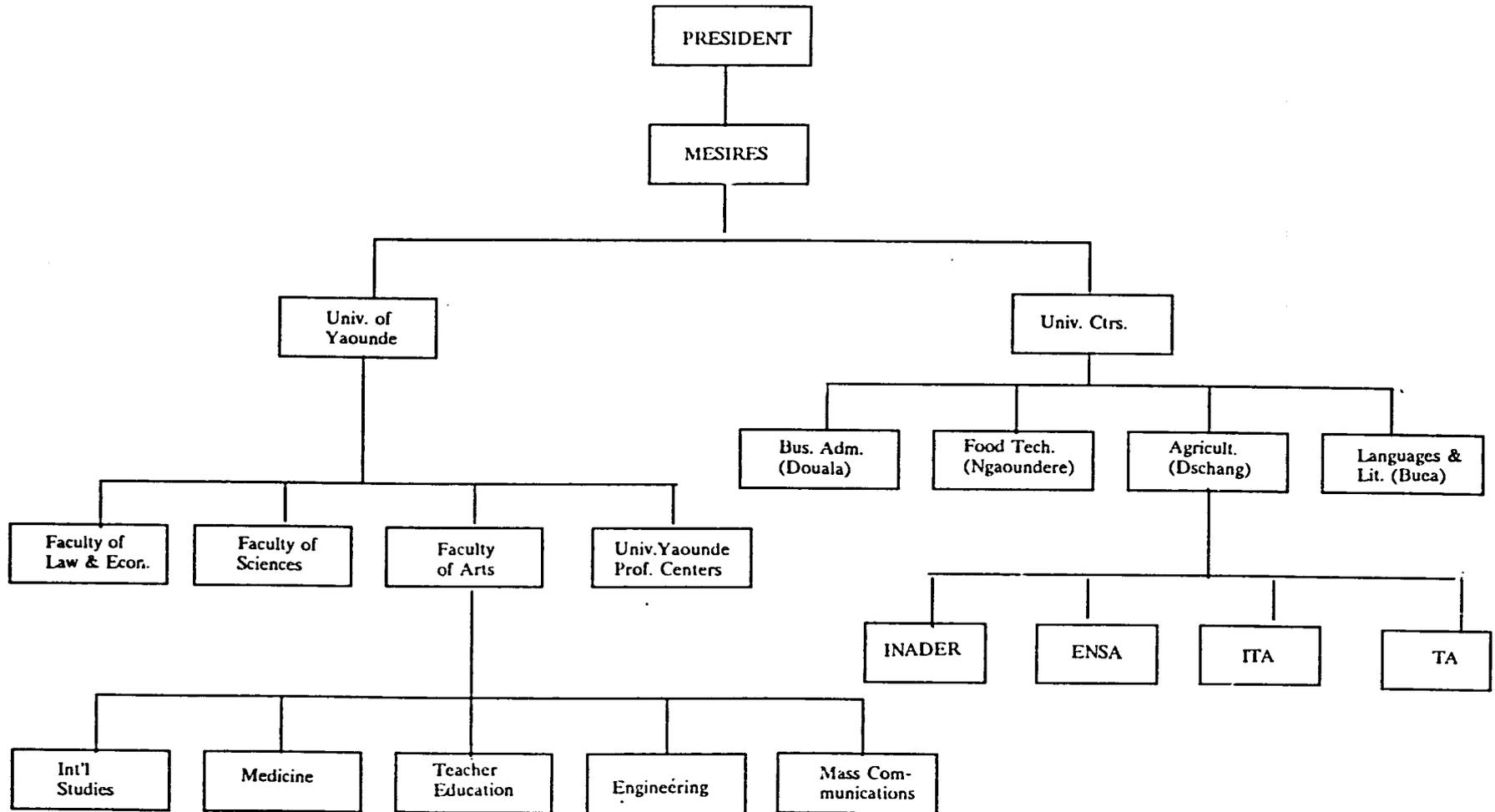
The combined capacity of these schools is 440 students, with half expected to graduate each year. In 1988, of the total of 149 TA graduates, 84 or 56 percent were from UCDs.

The remainder of the regional MINAGRI schools produce graduates with lower level credentials than TA. Collectively they have capacity for 655 students. In 1988, they produced 373 graduates. At present the MINAGRI school at Bambili is without students because funds are not available to support them.

Ministry of Livestock, Fisheries and Animal Industries

MINEPIA conducts training schools for zootecnicians at two locations, Maroua and Jakiri. Graduates are certified at four levels, the uppermost being about the same as the TA level. Although these schools have the capacity of almost 100 students, only nineteen graduates were produced in 1988.

ADMINISTRATIVE ORGANIZATION I.



- 12.

Discussion

No other institution of higher education in Cameroon has a program similar to that of INADER at UCDs. When the ITA and ENSA programs are concluded in 1991 and 1993, respectively, INADER will be unique in producing university graduates with practical, scientific agricultural training relevant to the improvement of Cameroonian agriculture and oriented toward the needs of the private sector.

INADER graduates will not be in competition with graduates of MINAGRI or MINEPIA programs. Rather, they will be in position to teach at the latter institutions and to lead those technicians in both public and private employment situations.

Opportunities for linkages with several of the professional schools at UY and other university centers are being discussed at UCDs.

In the field of agricultural engineering, there might be possibilities for utilizing the UY professional engineering program as a component of any future UCDs agricultural engineering program.

There may be opportunities for collaboration in teaching, research, and outreach with the Food Technology program at Ngaoundiri. This program is not sufficiently defined at present to enable UCDs to establish appropriate linkages.

There are also possibilities of linkages between UCDs and the business administration program at Douala. This combination could create important human resources for the private agri-business sector.

The need to integrate animal disease management with animal production technology exists universally. Opportunities for UCDs faculty to develop linkages with the MINEPIA training programs can be built on existing collaborative activities with Cameroon's Animal Production Research Institute (IRZ).

Conclusion

UCDs, with its mission and as an institution of higher education oriented to the application of scientific information to the improvement of agriculture and agribusiness is unique in Cameroon. UCDs is undebatably a change agent, both through its graduates and through its research and outreach activities. Its impact on higher education and agriculture is only beginning to be felt.

The UCDs' role as a regional institution has received impetus, with regional farming systems symposia held at UCDs and future meetings planned, with a regional post-graduate program in plant protection now in progress, and with students enrolled from nearby countries. These regional initiatives will enhance UCDs in terms of the professional development of its faculty, the scope of its programs, and the quality and diversity of education provided to its students.

Of equal importance, UCDs will enhance the institutions, faculties, students, and others, through its program interactions, and thus have a multiplier effect throughout Cameroon and West Africa.

Analysis of Project Outputs and Accomplishments

This is a primary chapter of the final evaluation report. It encompasses the team's assessments of the performance, accomplishments and present status of the Agricultural Education Project. These assessments correspond to the eight "Outputs" identified in the Project Paper (1981), the University of Florida contract (1982), for the total period of that contract, as amended, and the two governments' project agreement. Each output is discussed separately below.

Output Number One: A Revised Academic and Administrative University Structure

This output was designed to assist UCDs to develop as the national university of agriculture, broadly defined, with an integrated program of higher education, research and outreach. The "Land-Grant" concept of these three integrated functions was to be adapted and developed for local needs and conditions.

The adaptation process involved the major challenge of developing an administrative organizational structure to replace the geographically and operationally separate structures of ENSA and ITA. A second major challenge was the enunciation, development, acceptance, and organizational accommodation of the integrated teaching, research and outreach functions of UCDs.

Implementation Strategy

In the early stage of the contract, the AEP team devoted considerable time to working with the skeletal UCDs administrative structure in planning for the move of ENSA from Nkolbisson to Dschang. This undertaking involved the complexities of dealing with faculty and student linkages to the previous location, the planning of existing and new physical accommodations, and the incorporation of ENSA administratively into an integrated UCDs structure. The major elements were accomplished in 1985, with ENSA physically moving to Dschang, with its five year academic program joining the three year ITA program and the two-year TA program to form three academic components of the UCDs.

In the latter stage of the project, the AEP team focussed on the merging of the five and three year programs into a four year academic degree program, developing the curriculum, academic facilities and the support services, and developing an effective organizational and operational structure, from the Director General down to established subject matter departments with their key officers and interactive mechanisms.

Concurrent with these administrative development efforts, and perhaps even more important, was the nurturing and acceptance of the integration of teaching, research and outreach functions of this fledgling national agricultural university. This represented a radical departure from the traditional approach to higher education in agriculture and required commitment to the concept by all levels from the President of the country to the faculty members and many important officials in-between. The process proceeded very deliberately and gradually became defined, understood, and accepted.

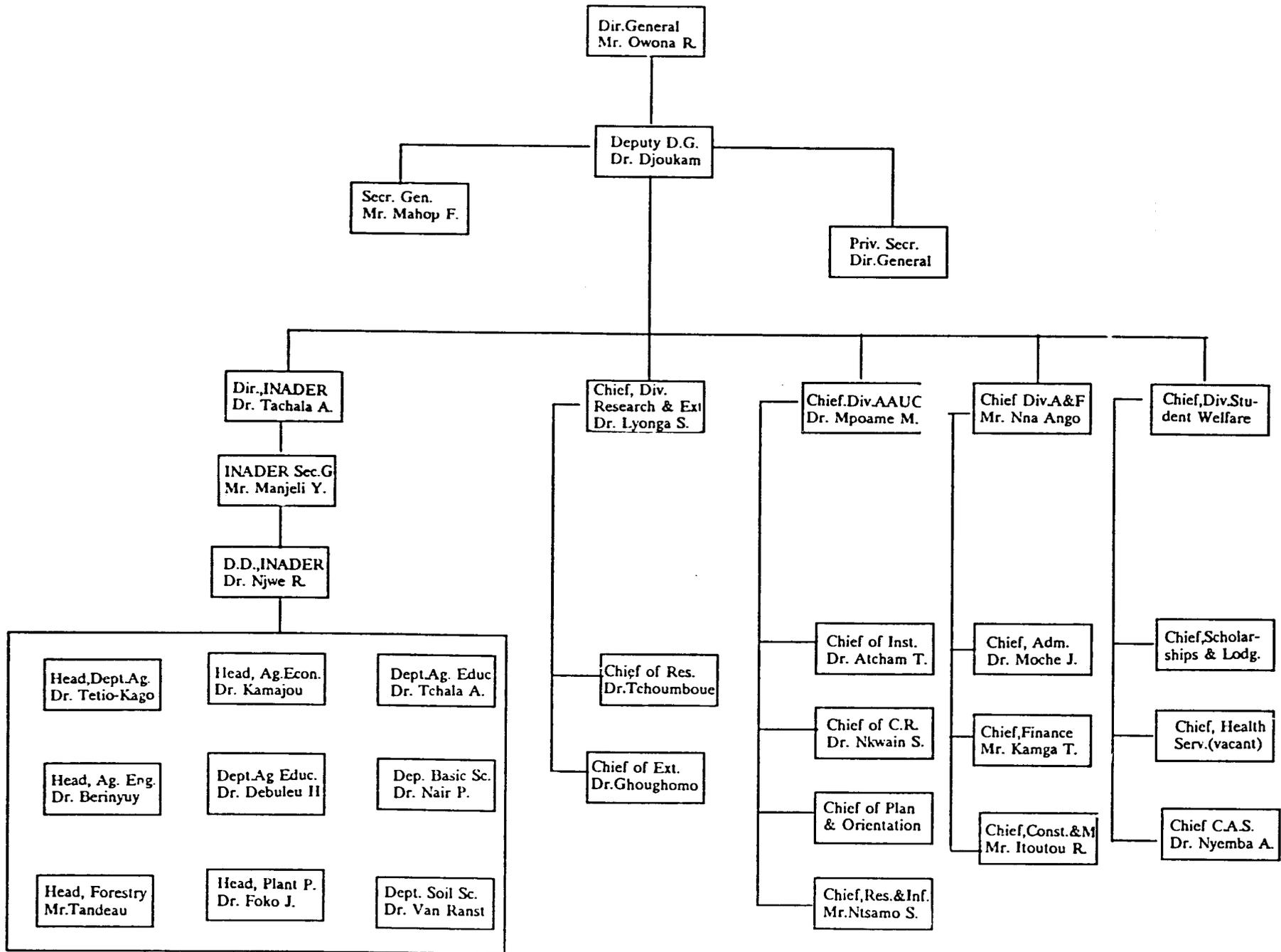
As the administrative structure was developed, attention was directed to operating procedures and processes. An important example of this is the regularizing of the academic calendar.

A major effort has also been directed to the establishment of mechanisms for improving communications, cross-fertilization, and collaboration within UCDs. This is extremely important to morale, efficient program development and execution, faculty equity in the institutional mission and effectiveness of the human resource pool.

Accomplishments

- A new administrative organization for the integrated teaching, research and outreach mission of UCDs is operational (see following page).
- Key administrative positions are filled with qualified Cameroonians committed to the UCDs mission.
- The department is established as the basic programming unit; ten departments including a physical fitness department, are functional with defined faculties and designated department heads.
- The National Institute of Rural Development (INADER) has been established as the academic administrative entity replacing ENSA and ITA within UCDs.
- A concise and clear UCDs mission statement has been developed with broad input and approvals (Appendix G).
- A regularized schedule for the academic year has been established with two sixteen week semesters of instruction plus examinations, deliberations, vacations and preparation periods (Appendix K).
- The "Faculty Assembly" has been activated for deliberations and inputs to major institutional policies, procedures and academic issues.
- Three key standing committees, each with representatives from each department and relevant administrative office, have been activated for the teaching, research and outreach functions.

ADMINISTRATIVE ORGANIZATION II.



16-

- A student association, with elected officers, serves as a liaison and communications mechanism for student concerns.
- The faculty and administrators have endorsed the development of position descriptions, annual plans of work, and annual performance evaluations for all academic personnel. These processes are not yet fully implemented
- Special program support units have been established, e.g., Library, Media Center, Language Laboratory, Audio-Visual Center, Teaching Resources Center, Professional Development Center and the campus farm.

Present Status

With the able assistance of the AEP team, UCDs has established an academic and administrative structure to effectively execute its new and broadened mission. There are great expectations for UCDs' contributions to the nation's development. There are also expectations for it to serve some multi-national regional role. It is already doing so in limited ways.

The enthusiasm and commitment of the administration, faculty and staff to the UCDs mission is strong. Moreover, the students are eager and of high quality. The institutional orientation to practical, applicable and quality programs for rural development needs and private sector development is appropriate. The AEP has been essential to UCDs development.

Likewise, the UF team is especially able, positive and enthusiastic. Good relationships and respect between counterparts, so necessary for effectiveness, are evident. This is particularly obvious in the relationship of the Chief of Party and the Director General of UCDs.

All this is not to imply that there are not critical needs yet to be addressed in UCDs' development and maturation. Although these needs will be addressed in other sections of this report, three are closely related to this "Output" section and are discussed below:

- A broad institutional acceptance of UCDs' three main functions exists, yet, these functions are visualized as quite separate. The interactive and synergistic enhancement of each function by the others is not yet fully appreciated, e.g., student programs' linkages to research and outreach, outreach feedback to research, teaching, faculty confidence and credibility, and research impact on teaching and outreach.
- Several mechanisms of communication, interaction and input for administrators, faculty and students were cited in the previous section on accomplishments. But, there is yet a lack of week to week operational, procedural and events type communication within the institution. A newsletter has been initiated, and that is commendable but it cannot serve

the entire need. Perhaps a more regular sharing of information at administrative meetings, followed by regular departmental faculty meetings where information is passed on and mutually shared, would serve this need.

- In the area of faculty accountability and recognition there is a critical need for evaluation of performance in teaching, research and/or outreach, and for citations, salaries and promotions to reflect such.

Conclusions

The projected output of "a revised academic and administrative university structure" has been achieved. The AEP team has served effectively in collaboration with the Director General and other UCDs officers in bringing about this difficult development.

There are areas of need for further development of concepts, policies, procedures and programs in all three major functions and in the support units. There is momentum for continuing the maturing and strengthening process. That momentum must be maintained and exploited. The faculty members are, by and large, able, well trained and enthusiastic. But they are also young and rather inexperienced for the leadership and program development roles in which they are cast. There is a shortage of senior faculty oriented to the broadened mission of UCDs. There are only three full professors in all ten departments and two of them are expatriates.

Thus, for this young institution with its vigor and enthusiasm, there is a continuing need for external peer reinforcement, guidance and developmental support, as it matures to fulfill its important mandate.

Output Number Two: A Revised Academic Curriculum

The Project Paper called for the development of a revised curriculum at both ENSA and ITA that would place greater emphasis on practical and field work, and would relate that work closely to course content and training objectives. It was also to include appropriate courses in administration and management as well as offer a new option in Rural Technology. It was expected that revision of the curriculum would be accompanied by more effective teaching techniques that would make greater use of library resources and laboratory exercises as well as course syllabi, textbooks, and audio-visual aids. Finally, it was projected that ENSA would be physically relocated to the UCDs campus in 1984 and implementation of the revised curriculum would begin that year. These expectations represented a radical departure from the existing Cameroonian system of higher education.

The Setting

A major curriculum revision is almost always a difficult undertaking as it invites re-examination of the philosophical underpinnings and objectives of the institution. Steadfast and thoughtful efforts are required to achieve among policy makers, administrators, faculty and other interested parties the delicate consensus necessary if proposed changes are to be implemented successfully. In the case of UCDs, the curriculum revision process was complicated by the unique cultural and linguistic setting of the institution.

It was also made enormously difficult by the fact that UCDs was physically divided, it lacked an established and experienced faculty, and its continued operation depended to a significant degree on the support of foreign groups with diverse educational philosophies and traditions.

The University Center at Dschang comprised two post-secondary institutions at the time that the Agricultural Education Project (AEP) was being developed. Permanent faculty members were few in numbers and taught at both institutions. Most of the courses were taught by individuals who were recruited on a temporary, ad hoc basis from various government agencies. Often they had neither adequate knowledge of the subjects assigned to them nor experience and interest in teaching.

Scheduling of courses was guided primarily by the necessity to satisfy the legally prescribed requirements for graduation and by the availability of the temporary teachers. As a result, teaching consisted almost exclusively of lectures, if not dictations, that were often concentrated over a short period of time, even a few days, to accommodate the ad hoc lecturers. Little time was left for discussion or the use of limited library resources, and laboratory facilities were at best inadequate. To a large extent, academic success depended not on the acquisition of knowledge but on rote memorization of often irrelevant information.

Not surprisingly, graduates of both institutions were rated as generally lacking in practical knowledge of technical agriculture, as well as research and communication skills and management ability. By 1980, ENSA and ITA had produced 327 and 70 graduates respectively. A 1979 manpower study, financed by USAID/Cameroon, estimated that 628 IAs and 734 ITs would be needed to meet public sector demand between 1980 and 1985. Although demand in the private sector was thought to be growing, it was not quantified.

Implementation

Project files indicate that UCDs and the contractor began early and continued steadfastly their efforts to achieve this output. These efforts included extensive advisory and consultant services from UF. The UF Team also organized study tours abroad for faculty, administrators and policy makers, conducted workshops and seminars, and worked with faculty committees on curriculum development. These efforts were intensified following the relocation of ENSA to the Dschang Campus in 1985. The work began to bear fruit with the decision in 1988 to combine ENSA and ITA into INADER with a single curriculum.

INADER's mandate is to train technicians and competent, self-confident and competitive professionals for the purpose of developing and promoting a dynamic agricultural sector in Cameroon and Africa. Besides a continuing two-year program for technicians, it will offer a four-year curriculum with optional specializations in Animal Production, Plant Production, Agricultural Economics and Rural Sociology, Forestry, and Rural Engineering. It was proposed that INADER also offer two-year graduate programs in the same five broad areas of study and, in time, a doctoral program. Graduates of the four-year curriculum (Appendix H) will receive a Diploma as Ingenieur des Techniques Agricoles.

Present Status

When the 110 students of the first class of INADER began their studies in September 1989, a common curriculum for the first two years was in place. For three of the five options, the final two years have been developed. The final stages of the other two options, however, are yet to be developed. In all cases, the new curriculum places greater emphasis on practical exercises and fieldwork, introduces courses with an agribusiness orientation, and reduces the total number of lecture hours.

With respect to improving teaching effectiveness, the contractor has provided leadership and expertise in developing a Teaching Resources Center which publishes a catalog of its collection of charts, filmstrips, slides and transparencies covering some 26 subjects. Similarly, the library resources have been increased considerably and made more accessible to students and faculty. Further progress will depend largely on the expansion and improvement of the physical facilities available for teaching, the equipping of new laboratories, and on the improved scheduling of courses.

Conclusion

A radical re-orientation of higher agricultural education in Cameroon has been initiated with the creation of INADER and the introduction of its new curriculum in September, 1989. The AEP played an important catalytic role in these developments. All students are required to perform, under direct faculty guidance and supervision, twelve hours of practicum per week. Special modules are being developed by the academic departments to ensure that the farm practice course will provide a diversified and enriching learning experience.

No descriptions are available for the courses listed in the curriculum. Thus, one cannot form a judgement on either their orientation or their content. The total number of hours that students will be required to spend in supervised classroom, laboratory, field work and sports activities is quite high, ranging from 34 to 46 hours per week. With such requirements, students may not be able to make use of the library or to study independently. The number of courses is high and several of them, surprisingly, require only 15 contact hours per semester.

Fortunately, faculty and administrators are aware of these concerns. They clearly understand that the development of an appropriate curriculum for INADER students must be a dynamic and continuing process. They seem to be able to address those concerns and others that will inevitably arise in time.

Output Number Three: Upgrading Faculty and Staff

This project output required the development of a full-time UCDs faculty to teach the new curricula envisioned for UCDs, including field studies. The UCDs faculty was expected to engage in the research and or outreach programs planned as additions to the traditional teaching missions which had characterized ENSA and ITA.

The PP stated that the AEP would provide U.S. training for 55 faculty and staff to the M.Sc. level and for 3 persons to the Ph.D. level. Additional training for at least 13 faculty members was to be provided by other donors.

Short-term training in the U.S., at UCDs, and in other locations was to be provided for faculty professional development and to enhance administrative and technical skills of UCDs administrators, faculty, and staff.

UCDs faculty and staff included 40 Cameroonian and 22 expatriate teachers and administrators at project initiation in 1982. In addition, 80 part-time adjunct teachers were employed to meet the needs of ENSA and ITA for lecturers.

By the end of the project, 75% of the part-time teachers were to be replaced and UCDs faculty were to devote 25% of their time to research and/or outreach. In addition, the number of classroom preparations per week for each teacher was to be reduced, and teaching methods appropriate to the new orientation of the curriculum were to be put in use.

Implementation Strategy

The UF team assisted UCDs to make a training needs analysis and a training plan. Training opportunities appropriate to each participant were identified, including both long-term and short-term training in the U.S., third-country training, and in-service training at UCDs by senior staff and AEP team.

The UF academic advisor was responsible for preparing each candidate for training, and for monitoring all aspects of each participant's program. A guide to long-term participant training was prepared for the use of the faculty to enable them to understand how the AEP supports training and how UCDs selects candidates. This guide is included as Appendix B.

After approval of the nomination and proposed discipline and degree by the UCDs Director General, the academic advisor assisted candidates to arrange programs of study relevant to UCDs needs. He also assisted in selecting an appropriate U.S. university and in completing the requirements for admission.

That advisor also provided predeparture orientations for participants and monitored their academic progress in concert with the AEP support staff in the Office of International Programs at the University of Florida.

Short-term training and orientation to the land-grant philosophy was provided for UCDs administrators and faculty at various universities in the U.S. and at Escuela Agricola Panamericana at Zamorano, Honduras. Additional short-term training was provided in Canada, Ghana, Zaire, and Germany.

A guide to short-term training was prepared which described the nature of such training, including its purposes, limitations and reporting requirements. This guide is included as Appendix C.

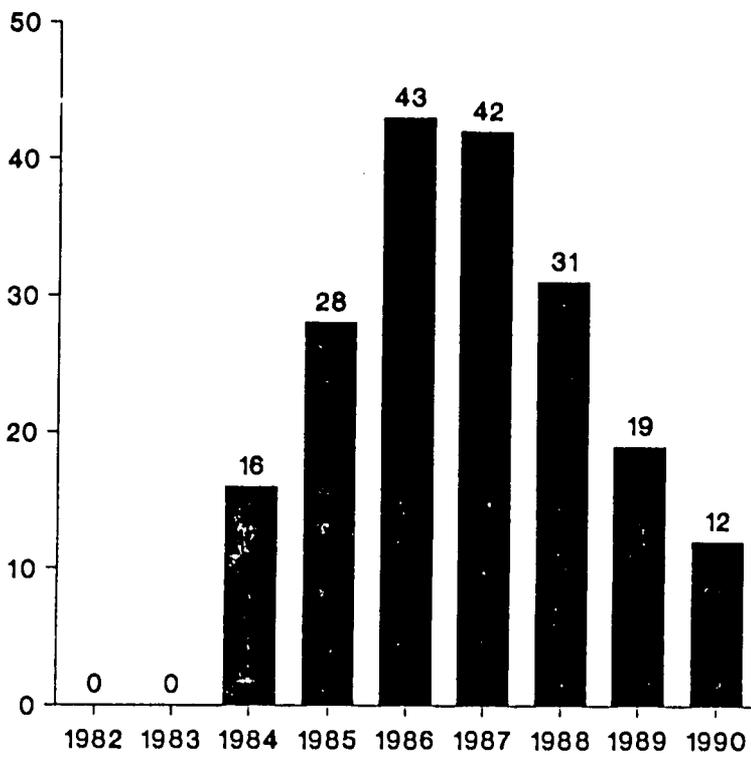
Early in the project it became obvious that more training at the doctoral level was required to accomplish the project's objective of creating a university completely independent of outside assistance. Thus, an increase in the number of Ph.D. programs and a consequent decrease in M.S. programs was planned and approved.

Accomplishments

Of 53 candidates selected for advanced degree training in the U.S., 50 had been admitted to programs of graduate study by the beginning of 1984. The last candidates matriculated in 1988. Those participants were enrolled in 22 different U.S. universities.

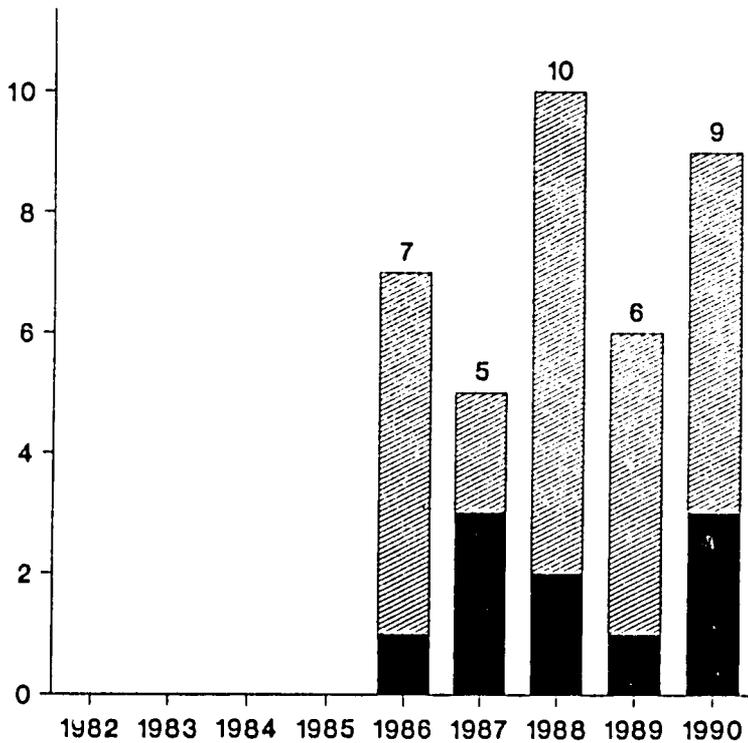
On December 31, 1989, the status of long-term advanced degree training was as follows:

M.S. degrees completed	28
M.S. degrees in progress	9
Total	37
Ph.D. degrees completed	6
Ph.D. degrees in progress	3
Ph.D. degrees not completed	3
Total	12



A summary of the numbers of UCDs faculty engaged in long-term advanced degree participant training from 1984 through 1989 (and projected through 1990) is shown in this graph.

Number of UCD faculty in advanced degree programs at U.S. universities in any given year



The status of degree training completions through 1989 (and projected through 1990) is shown in this graph.

Status of degree completion/failures by year of project.

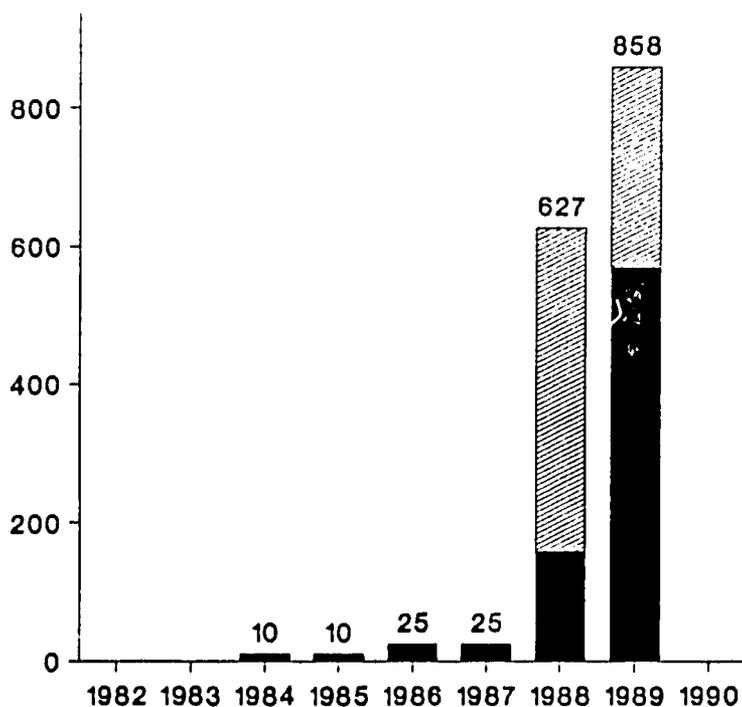
Increased emphasis was placed on short-term training during 1988 and 1989. This was in recognition of the need for continuing professional development of UCDs faculty, both those returning from long-term advanced degree training and others who had not received recent training. In addition, short-term training for administrative and support staff was prompted by the realization that faculty success would be dependent on a staff that had skills necessary for efficient performance of their assigned tasks.

A complete listing of long-term advanced degree candidates, including their departments at UCDs, degrees previously held, training institution in the U.S., and training status through December, 1989, is provided in Appendix B.

Short-course training in the U.S. for UCDs faculty provided orientation to land-grant philosophy (12 trainees), institutional management (17 trainees), farming systems (7 trainees), introduction to teaching skills (6 trainees), integrated pest management (2 trainees), physical plant operations (1 trainee), root crops (2 trainees), print shop operations and publication production (1 trainee), and geographic information systems (1 trainee).

Short-term training for supporting staff was conducted in country in: driver education and safety (90 trainees), introduction to computers for service staff (13 trainees), electric typewriters (2 trainees), library computerized data base network (4 trainees), library training (1 trainee), gasoline and diesel engines (7 trainees), automotive electricity (4 trainees) and automotive transmissions (4 trainees).

Additional short-term training was provided in the use and care of the Heidelberg Model GTO Offset Press in Germany (1 trainee) and computer maintenance and repair in the U.S. (1 trainee). The number of persons-days of short-term training, both out-of-country and in-country, is shown in the following graph.



A complete record of all short-term training, including the title and description of training, location, dates, sponsor(s), and participants, is included in Appendix C.

■ S/t training out Ctry
 ▨ S/t training in Ctry

Person-days of short-term by year of training, conducted in and out of Cameroon.

Current Status

Progress in faculty development is summarized in the following table.

**Table Changes in UCDs faculty
1981-82 to 1989-90**

Total Year	Total Faculty	Cameroon	Expat.	% Expat.	Part Time	% Part Time
1981-82	62	40	22	35.5	80	56.3
1989-90	116	100	16	13.8	20	17.2

There is no question that continuing professional development is essential for the maturation of the UCDs faculty. Many are young and have had little opportunity to utilize new professional skills acquired in advanced degree training. Competence in teaching, in research, in outreach, and in the effective participation in institutional affairs will all be facilitated by a continuing program of in-service professional development. Similarly, the skills of support staff must be improved and maintained to enable the faculty to function effectively.

In addition, needs for new faculty will occur from time to time, because of attrition and the necessity to add new subject matter specialties and higher levels of training to the UCDs agenda. Support staff renewal will also be necessary. These considerations call for continued training programs for UCDs faculty, administrators and support staff.

The objective of a full-time faculty, adequately trained for teaching and able to devote significant time to research and outreach, has been achieved. In-service training programs for faculty and staff have been conducted. UCDs will continue to utilize some part-time lecturers and guest speakers in a deliberate strategy to sustain linkages with individuals and institutions outside UCDs, and to provide student exposure to role models, especially from the private sector.

Difficulties were encountered at the earliest stages of this output due to a design that allowed too little time for degree program completion (including English language training when required) and by a lack of provisions for health insurance for participants training in third countries.

A strain was imposed on both faculty and students when large numbers of UCDs faculty were engaged in long-term training simultaneously -- a maximum of 46 persons, or almost half of the UCDs faculty, in 1986. The complete cooperation and forbearance of all involved and the use of teaching assistants from UF, however, enabled UCDs to meet this challenge.

Output Number Four: Interdisciplinary Research and Development Program

This output required UF to assist UCDs to develop a program of interdisciplinary research and development (outreach). This would be accomplished through the adoption by UCDs of a systematic operational program managed by a Director of Research and Outreach, functioning through the academic departmental structure.

Relevant applied research creates useful knowledge in support of decision-making at all levels. This contributes directly to increasing farmer productivity and in turn increases overall national agricultural production. An additional benefit of research and outreach programs at UCDs is the enhancement of the instructional program through the professional development of the faculty.

The outreach component of this project is reflected in the role of UCDs in providing information and/or training to extension workers, other governmental agencies and parastatals and non-governmental users. During the years 1988 and 1989 increased attention has been focused on needs of the private sector.

Implementation Strategy

The AEP has undertaken the following broad initiatives to increase this capacity of UCDs for research and outreach:

Faculty expansion and scientific training. Previously, the teaching loads imposed on all faculty precluded involvement in research and outreach. Furthermore, many faculty had not been trained to undertake meaningful research and/or outreach activity.

Facilities and equipment improvement. Meaningful research can succeed only if adequate facilities, equipment and support staff are available to the research scientist. These needs have been addressed broadly by AEP as discussed under outputs three and seven.

Administrative support for research and outreach. Provisions for defining the research and outreach priorities, for soliciting and evaluating faculty proposals, for selecting proposals to be funded, for monitoring progress and for reporting and evaluating research and outreach are necessary to provide guidance, encouragement and support to the faculty. These will ensure that the research and outreach undertaken is relevant, that resources are used to good advantage and that the stature of UCDs is sustained at a high standard.

Policy Accomplishments

- An institutional mission statement has been adopted (Appendix G). Departmental mission statements identifying specific objectives have been prepared but are yet to be adopted.
- Individual position descriptions for faculty are planned for completion during 1990. These are expected to define specific partitioning of each faculty member's time among teaching, research, and/or outreach. They will be followed by a system of annual plans of work, achievement reports, and performance evaluations. Position descriptions will also help to identify redundancy and overlap among faculty as well as areas with little or no coverage.

Personnel Accomplishments

Advanced training of faculty and reduction of average classroom hours from 250 to 70-80 have led to an availability of faculty time for research and outreach as follows:

- 1986-87 40 full time equivalent positions
- 1987-88 50 full time equivalent positions
- 1988-89 60 full time equivalent positions

Source: Dr. J. Djoukam, 03/20/90.

Facilities Accomplishments

Not all facilities envisaged in the project plan have been completed. This limits the capability of the faculty to engage in some areas of research and outreach. Even so, the faculty have increased the number and complexity of proposals and projects. Future completion of additional infrastructure will enhance research and outreach capabilities.

Notable developments in library resources in support of research include acquisition, cataloguing, and shelving and maintenance of journals, reference documents and research reports from faculty and student memoirs. Other new resources include library access to information in an eight-institution agricultural information network in Cameroon and participation in an international agricultural information network.

Administrative Accomplishments

Administrative support for both outreach and research has increased somewhat.

The proceedings of the 1985 National Seminar on Extension and Interventions in the Rural Area acknowledged the potential contributions of UCDs in support of the needs of extension. A national policy on agricultural extension is needed to define and formalize the role of UCDs in this area.

The UCDs role in support of outreach is becoming evident with the production of information pamphlets and leaflets designed for farmer use, soil mapping associated with plant nutrient requirements, advice on plant protection and animal management systems, assistance rendered to an implement manufacturers, and price policy analyses. All these provide information to decision-makers, whether at the small farmer level or ministerial level in government.

Progress in encouraging research at UCDs is occurring in five major areas:

- Availability of faculty (human) resources
- Definition of the UCDs research mission
- Establishment of procedures for managing research proposals and projects
- Development of research projects with agencies and organizations outside UCDs
- Financial resources

The first four are discussed in detail elsewhere in this Evaluation Report. The financial resources available for research for the period 1986-89 are presented in the following table.

UCDs Research Budget for the Period 1986-1989
(in F. CFA x 1000)

Source of Funds	Academic Year		
	1986-87	1987-88	1988-89
UCDs Budget	55,000	24,000	20,000
Bilateral Cooperation	7,500	9,000	41,926
International Organizations	6,593	3,000	18,860
Total	69,098	36,000	80,797

Source: Dr. S. Lyonga, 3/19/90

Conclusions

The AEP has succeeded in assisting UCDs to develop programs in research and outreach. Although an effective beginning has been made, important elements are unfinished and currently occupy the attention of UCDs administrators and faculty.

There are needs to develop and adopt research management policies and procedures with appropriate involvement of the Director of Research and Outreach. Also, identification of research and outreach priorities should focus on targets chosen for the maximum utilization of UCDs resources and to ensure that impacts can be identified. Finally, the GRC budget for research must be increased and made a permanent line item in the UCDs budget.

Output Number Five: Linkages with Client Agencies

This output called for UCDs to establish linkages with its client agencies, including joint seminars, workshops, conferences, and field visits and creating an interagency committee for university oversight.

Linkages with outside agencies were a characteristic of the two institutions that constituted UCDs until their fusion into INADER. The mandates of ENSA and ITA were exclusively to train personnel for the public sector agencies and organizations. Neither institution had a sufficient number of faculty members nor adequate facilities to carry out its mission. Both became heavily dependent on other agencies to provide opportunities for students to do required field work and on outside individuals to teach a large percentage of their prescribed courses.

During the life of the AEP, the situation has been fundamentally changed. UCDs' facilities have been expanded and the expansion is continuing. Currently, its faculty comprises over 100 well trained scientists, and its mandate has been enlarged to include research and the transfer of information and technology to potential users. UCDs is expected to become a major contributor to the socio-economic development, not only of Cameroon, but also of other African countries. Accordingly, UCDs has been strengthening and expanding previously established linkages and creating new ones in its three areas of responsibility. Those linkages are discussed in the following paragraphs.

Linkages for Training

As the faculty of UCDs has increased in quantity and quality, its dependence on outside lecturers has been virtually eliminated. Nevertheless, UCDs plans to continue usage of individuals both in the public sector and the private sector who can enhance the breadth and quality of the teaching program. These individuals will be called upon not to teach courses but to serve as occasional guest speakers or lecturers. Also, the new curriculum,

with its greater emphasis on practical and professional training, will necessitate a review of existing institutional linkages that enable students to do required stages and memoirs. These linkages will be expanded and new ones will be developed, particularly with private firms.

UCDs is also becoming increasingly involved in regional training. Students from neighboring countries, Chad in particular, have been attending ENSA for several years and UCDs has begun offering international training courses in cooperation with external agencies. A farming systems training workshop was conducted in 1989 in collaboration with the West African Farming Systems Research Network (WAFSRN). Additionally, agreements are currently being developed with ILCA, IITA, and OAU/ICRISAT to offer training programs in animal diseases, crop production and improvement, and plant protection, respectively. As it consolidates its national role, UCDs will be poised to expand its international role as a bilingual agricultural university center. This is unique for Africa.

In addition to the USAID financed relationship with UF, UCDs maintains an important linkage with the University of Ghent, which has been making a major contribution by providing teachers in the Departments of Soil Science, Animal Science, and Plant Protection. The French Government has also been contributing to the Forestry Department in the same manner.

Linkages for Research and Outreach

UCDs has created a Division of Research and Outreach that includes a Research Service and an Outreach Service. Although the functions and responsibilities of the division have not been fully developed, it is already actively engaged in monitoring and coordinating existing research/outreach activities, promoting new ones, and planning for the future. Within Cameroon, UCDs continues to maintain long standing linkages with IRA and IRZ, which have made possible the completion of over 300 student memoirs on a wide variety of agricultural subjects. These are a valuable library resource at UCDs. In collaboration with IRA and with the active support of the UF Research and Outreach Advisor, UCDs has initiated the publication of a series of "fiches techniques" that provide, in simple language and graphics, much useful information on such topics as: production of legumes and pastures, harvesting and handling of vegetable crops and fertilizer purchase and application. UCDs and IRA are also jointly publishing a series of technical bulletins for use primarily by extension agents and literate farmers. To date, four such bulletins have been published. Others are being planned by the Department of Rural Education, which has been the leader in this activity.

Currently, UCDs is developing with the International Potato Center a joint research program on potato blight and production practices in Cameroon. Another program for maize improvement is being considered in collaboration with IRA, and UCDs has initiated a dialogue with IRA and IRZ with the view of eventually developing a unified, integrated national research program.

Conclusion

This output has been effectively achieved. With its new mandate and structure, the re-orientation of its academic program, and its engagement in research/outreach activities, UCDs will maintain and expand its linkages to other agencies, both national and international. A university oversight committee has yet to be activated.

Output Number Six: Demonstration Farms

This output was intended to develop three farms in support of the teaching, research and outreach programs at UCDs. One farm, located at Djoutittsa, about 10 kilometers from the campus, was to become an experimental livestock station and another, at Bansoa, about 30 kilometers from the campus, was intended to demonstrate large scale, mechanized crop production and, at the same time, supply produce to the campus cafeteria. The third farm, of about 100 hectares, and adjacent to the campus would support faculty research and accommodate student practical work in plant and animal sciences. The development of all three farms was to be financed partially under the AEP.

The 1986 Threshold Evaluation of the project noted that maize and soybeans were then being produced on the Bansoa farm as feed for livestock at the campus farm, while at the latter only a minimum level of operation was being carried out. No comments were made on the Djoutittsa farm. The threshold evaluation team also reported a lack of equipment and qualified farm managers and alluded to problems of land ownership at the campus farm.

Following the evaluation, this output was revised and the AEP resources were restricted to the development of the campus farm.

Present Status

Some of the most productive land adjacent to the campus is technically owned by IRA. UCDs has an agreement with IRA to utilize that land and a perimeter fence has been constructed, which incorporates that land along with the UCDs owned land. Modest facilities for animal production have been renovated or built and are being used in the teaching program. Fish ponds are currently being established. Terraces have been restored or built to prevent soil erosion. A limited irrigation system is operating and the available land area is being utilized in support of student farm practice and faculty research.

On the management side, a budget has been allocated for the operation of the farm, and an administrative structure has been established under the supervision of two faculty members, one for cropping activities and the other for animal centered activities.

As intended originally, the campus farm is becoming an increasingly valuable asset. It is conveniently located and easily accessible, thus providing students and faculty with the

opportunity to engage in field research in a station environment. It's location is also an incentive to researchers to maintain high standards in the conduct of their field activities, as these are always observable by faculty, students, and visitors.

The Bansoa farm is currently operated by a local farmer under contract to UCDs. No definite plans have been made for its development as an integrated component of the UCDs teaching, research and outreach programs. The Djoutittsa farm is shared by UCDs and the Ministry of Agriculture, which maintains a potato seed multiplication unit with some research on low cost potato seed storage. At the latter farm UCDs operations include a cattle herd and a swine production unit that has a 1,000 head capacity but is activated only intermittently due to risks of swine fever. As in the case of the Bansoa farm, no definite plans have been made for further systematic development of this farm.

Conclusion

The evaluation Team concludes that this output, as revised, has been basically achieved. The campus farm has been improved considerably. It is serving important needs and, if properly managed, it will have increasing value as a demonstration and teaching unit. However, for the campus farm to reach its full potential, UCDs must formulate a plan for its further development, taking realistic account of its needs and available resources. Provision must also be made for an improved financial management system. The possibility of adding the adjacent IRA station to the campus farm should be explored with IRA.

Output Number Seven: New Facilities

The total facilities development program cost as defined in the Project Paper was estimated at \$48 million. Of this total, about \$5.75 million was from the World Bank, \$3.0 million from Belgium, \$13.34 million from the GRC, and \$26.4 million from a USAID loan. The USAID loan provided \$2.8 million for equipment and furnishing and \$13.01 million for new construction plus \$10.6 million for 10% contingency and 15% inflation compounded annually to the projected contracting date.

The USAID funded facilities construction was originally to include some fifteen units, mostly on the upper campus. The plans were modified in March 1987 to provide the following:

- Site development
- Technical block plus library
- Teaching block
- Amphitheatre
- Dormitory A
- Dormitory B
- Genie Rural
- Student project plots

The penultimate item was deferred with modest funding reserved for phased development on the lower campus. Funding for the last item was set aside as a separate account to be utilized directly by UCDs, with the advice of UF technicians, for the development of the campus farm.

At the start of the AEP project (1982), the UCDs administration, the two year technical program and the three year ITA program all shared the existing ITA campus (lower campus), which had been modestly supplemented with IBRD-funded construction.

Implementation Strategy

The early AEP facilities development input involved purchasing equipment and renovating existing laboratories, coordinating with the planning and construction of all new facilities, and trying to resolve planning and design problems in the USAID portion of the construction scheduled for completion in 1985.

Because of major delays in the implementation of the USAID loan funded construction, it was necessary to make nominal modifications to several ITA classrooms and laboratories and to adapt some residential units to offices to accommodate the ENSA move to Dschang in 1985. The very inadequate accommodation of ENSA was relieved somewhat by the 1985 completion of the World Bank funded facility consisting of a modest teaching block, three dormitories for 180 students and a cafeteria for 300 students. At that time, the World Bank also provided three off-campus centers (antenne) with dormitory and classroom facilities for 30-50 students in Bambili, Ebolowa and Maroua.

Delays and resulting increased construction costs forced a replanning and redesign of the campus construction financed by USAID. This also corresponded to some programmatic changes related to curricula consolidation and outreach program concepts, which have in turn induced rethinking of optimal usage of existing facilities on the lower campus. The major upper campus construction was contracted in 1989 and at the time of this evaluation is moving well toward its completion by May, 1991.

The basic academic facilities on the lower campus are very sound structures, although they are in need of maintenance attention and renovation/remodelling for acceptable functioning for the new programs. The very logical plan, in the judgement of the team, is to adapt the lower campus facilities for:

- a practical training program base of operations
- basic science courses for the first two years
- chemistry, physics and biology laboratories with related storage, preparation and office areas
- the agricultural engineering department facilities in total (having been deleted from the upper campus construction but fitting well into the building assignments) with major renovation and upgrading of utilities
- campus support units, including maintenance, motor pool, bookstore, media center, language laboratory, teaching resources center, audio-visual center,

- professional development center, and computer center facilities for public access and outreach functions, making use of the special program support units plus large meeting facilities, housing and cafeteria services.

Some of the lower campus modifications already have approved USAID funding, and the AEP is in the process of contracting them this year.

Accomplishments

While the four year delay in the major USAID funded construction has been disappointing and has caused much stress and less than adequate accommodation of developing programs in the interim, the result now promises to be a logical and efficient usage pattern for the two campus units. In the meantime, there have been significant elements of progress in facilities development. For example:

- There have been some renovations of lower campus facilities and more are being planned.
- The library was expanded in a form readily adaptable to bookstore usage when the library moves to larger and better new upper-campus facilities.
- The administration building on Foto Hill (off-the-campus) was completed in 1985 and is serving well.
- Roads and utilities were extended to the administrative building and to the upper campus.
- A language laboratory was developed and equipped.
- The World Bank-funded units on the upper campus were completed.
- Much essential equipment has been provided through USAID/AEP funding.
- A functional and well equipped media center has been established in a renovated building on the lower campus.
- A teaching resources and audio-visual center has been established, substantially equipped, and extensively used.
- A twenty year master plan for campus development has been completed.

Present Status

The facilities development component of the AEP is belatedly on track with the major upper campus construction now in progress. In the meantime, extensive remodeling of facilities on the lower campus is critically needed to accommodate the new programs and essential support units. Some of this remodeling is funded by USAID and is in the process of being contracted. The remodeling and development of the agricultural engineering department facilities can proceed as soon as designs are completed and funding is available. Other remodeling must await completion of upper campus construction and vacation of some lower campus facilities.

This sequence of facilities development will take some two to three years to complete, assuming timely approvals and funding of the stages. The most critical stress will come in the fall of 1991 as students start the third year of the new four year INADER curriculum prior to completion of the upper campus project. Given the implementation of present construction and the renovation of components planned, the facilities will be quite adequate for the expected programming in 1992 and beyond.

Conclusions

The facilities development output of the AEP has not been realized as originally scheduled. It is useful to note these obstacles and delays only in that there may be lessons learned for future project designs. Most significant to UCDs' development of its capabilities to serve its teaching, research and outreach mission is the fact that the essential facilities are now in place or in process.

Output Number Eight: Maintenance and Motor Pool Unit

This output called for the creation of the position of a Superintendent of Maintenance and the hiring of additional maintenance staff, the establishment of an inventory control system for both the maintenance and transportation units, the reorganization of the motor pool unit to share vehicle maintenance and repair facilities with the agricultural mechanics shops, the provision of short term training and assistance in establishing the maintenance system, the provision for maintenance budget support of 50%, 25% and 10% during the first, second and third years respectively of such facilities operation, and the inclusion in the general budget of adequate maintenance support as a covenant to the project agreement.

The project agreement contains a relevant condition precedent: "Prior to the disbursement of the assistance for facilities maintenance in each year following completion of the facilities, the Government shall furnish to AID evidence of the source and availability of the corresponding Cameroonian Government contributions for facilities maintenance for that year as provided for under the terms of this Agreement."

The financial plan of the project agreement included items for maintenance as follows:

AEP Project: 1982 Obligation - 0;	LOP -	\$ 423,000
GRC (CFA): 1982 Obligation - 92,500;	LOP -	510,000,000

Implementation Strategy

Early attention was given to the motor pool, with particular activity in the procurement of vehicles and a parts inventory. The ITA program at Dschang had some 30 vehicles of various types and varying operational condition in 1984. After the move of ENSA in 1985 the vehicle inventory swelled to some 130, with a low percentage of fully operative units. Personnel numbers were more than adequate for the number of vehicles but seriously lacking in maintenance skills and system organization. Building facilities were quite sufficient but void of basic tools and functional equipment.

Maintenance as an overall item included then (and now) a wide spectrum of functions: custodial, routine repair, routine maintenance, renovations, and fabrication of equipment and furniture. It was subject to extensive non-University exploitation. Overall it lacked operational organization, control, equipment, and skilled personnel.

In 1985, UF added a very experienced and able motor pool advisor to the team. With his assistance UCDs proceeded to purge the facilities of extraneous and unusable gear, reduce the vehicle inventory from 130 to 52 of the most usable units, procure hand tools, establish an inventory and parts control system, and reduce the excessive driver pool through attrition and reassignment.

Subsequent attention has focussed upon skills training of Cameroonian managerial personnel and recruiting and training for the motor pool. Recent budget deterioration has resulted in a dissipation of the parts and supplies inventory and an accumulation of numerous inoperable units needing routine but essential repairs, such as brakes.

The UF motor pool advisor has gradually broadened his efforts to the entire maintenance system, as the demand for his services increased. Until the appointment of the Superintendent of maintenance, he had become over-extended.

Accomplishments

Vehicles were pulled back from assignment to specific offices into a consolidated pool and a functional management and dispatching office was established. Fourteen mechanics were sent to Douala for a month-long training program for gasoline and diesel unit maintenance. Tools were procured and a secure tool checkout system established. A separate combustibles storage was established. The adequate motor pool space continues to be organized and developed for greater functionality, control, efficiency and safety.

An organizational structure for all maintenance related functions has been developed and partially implemented. A well trained and able chief of service has been recruited, further trained and installed in the position. To complement this function, an assistant chief of service of demonstrated capacity has recently been recruited from a parastatal. Several other key positions have been filled as capable Cameroonians were identified.

Special in-country skills training is planned for craftsmen for the operational units, e.g., welders, woodworkers, electricians, plumbers, machinists, and painters.

A computerized inventory of all campus structures, space, usage, maintenance needs, remodeling needs, and aggregated cost estimates is currently in process by UCDs with the assistance of the University of Florida.

Present Status

The current situation may be characterized by the following observations:

- Considerable capability and organizational enhancement progress has been made, especially as related to the motor pool.
- The maintenance operations facilities are adequate in size and are improving in functionality.
- The special shop equipment to support craftsmen's functions will be available through joint usage with Rural Engineering, as their laboratories are renovated as planned.
- The skilled craftsmen as developed or recruited may also assist in practical skills instruction in Rural Engineering courses.
- There is an enormous amount of building maintenance and utility improvement needed.
- There is much need for skilled craftsmen development or recruitment.
- The maintenance needs will increase as the new upper campus construction comes into service.
- The budget for basic maintenance operations is only a small fraction of that needed (Appendix O).

Conclusion

The AEP has essentially fulfilled the specific maintenance output elements.

The very great back-log of deferred maintenance cannot be handled by the on-campus resources, even when needed skills and budget for steady state maintenance are provided. Contracting of special "catch-up" and renovation activities will be needed. This will require a special budget allocation. The inventory of needs currently underway will provide the costs information within a few months.

Given a special "catch-up" program, a much-increased operations budget, and continued personnel skills development (within present personnel numbers), maintenance will be adequate to keep up with present campus and program needs. *For a campus with physical facilities valued at perhaps 40 billion CFA, this maintenance investment is critical to protect the investment and its functional integrity.*

Summary

Institutional development is a long process. When viewed in the context of the eight years of the AEP, progress of UCDs has been quite rapid. UCDs has benefited from strong commitment and support from important people and entities of the GRC. It has also benefited from major external multilateral assistance from the World Bank and bilateral support from France, Belgium and the USA. It has been forged by cooperative efforts and a belief in the important role of a national agricultural university serving an integrated teaching, research and outreach function for national development.

UCDs has progressed to the brink of its potential for serving a central role in the economic recovery and development of Cameroon. The AEP has contributed essential inputs to this progress.

Having studied in great detail the eight specific outputs identified in the AEP documents and discussed individually in preceding sections of this chapter, the evaluation team offers the following judgements:

- ▶ Outputs one, two, three, five, six, and eight have been effectively achieved.
- ▶ Output four, relating to research and outreach, has achieved substantial accomplishment but has depended much upon advanced degree participants' return. This output is not yet fully realized.
- ▶ Output seven, new facilities, is committed for realization but is substantially behind the originally projected schedule.

Other Issues Addressed

Input Analysis

The initial financial plan of the AEP included a U.S. contribution of \$43,021,000.00, which represented about 48% of the estimated total costs of the project. This contribution consisted of a grant of \$16,670,000 to finance the costs of technical assistance, training and commodities and a loan of \$26,351,000 to finance construction and the purchase of commodities. The latest extension of the AEP increased the grant by \$6,000,000 for a total of \$22,670,000, thus increasing the grand total of the U.S. contribution to \$49,021,000. The allocation of these funds is summarized below:

Grant Funds (\$ 000)	Initial	Extension	Total
Technical Assistance	6,432	3,500	9,932
Training	3,971	500	4,471
Commodities	423	500	923
Contingency and Inflation	5,844	-	5,844
Renovations	-	1,500	1,500
Total	16,670	6,000	22,670

LOAN FUNDS (\$ 000)

Construction	13,551
Commodities	2,800
Contingency and Inflation	10,000
Total	26,351

The GRC contribution was initially estimated at the equivalent in CFA francs of \$47,148,000, broken down as follows:

Personnel	12,682,000
Operations	20,037,000
Training	236,000
Commodities	253,000
Land	600,000
Construction	13,340,000
TOTAL	47,148,000

Although the accounts and Records of expenditures of the grant funds kept by the Office of International Programs at the University of Florida were not reviewed, it seems that a number of adjustments in the allocation of inputs were made to facilitate project implementation and that the level of funding was adequate. With regard to the GRC contribution to the AEP, it appears that UCDs has been receiving better financial support from the GRC than most of the other national institutions. Total GRC expenditures for the project period 1982/83 through 1986/87 amounted to over 23 million CFA, which is more than twice the original estimated GRC contribution for that period. Figures for the period 1987-1989 were not available, but may have been somewhat lower than the amount expected.

Project Management

Patterns of Contact

The UF Chief of Party and the UCDs Director General meet every Monday to discuss ideas, issues and problems. A proposed agenda is prepared by both individuals and exchanged the day before the meeting.

The Chief of Party meets with the UF Project Team each Tuesday to communicate results of the meeting with the Director General as well as to discuss problems/issues, administrative matters, general information and share ideas for collaborative efforts. The Chief of Party prepares an agenda which is circulated at the meeting.

The Chief of Party can approach the Director General informally on a walk-in basis at any time. However, he prefers to reserve this contact for special situations. The UF project team members and individual UCDs faculty have informal contacts based on a collegial spirit of openness and accessibility.

The USAID project manager meets with the AEP advisory team on the average of at least once a month at Dschang. Also, the COP of the advisory team meets with the project manager in Yaounde whenever necessary. In addition to frequent meetings, daily contact between USAID and UF is maintained by radio, telephone, telex or telefax.

Although most of the contact between USAID and the project site is between the project officer and the COP, occasionally the project officer and the Director General communicate directly with each other.

Management Information System

Based on the established two year work plan, the Chief of Party reports progress on the advancement of work monthly and annually. The reports are communicated to UCDs and USAID for review and comment.

Every six months USAID, in collaboration with UCDs and the UF Project Team, prepares a Project Implementation Report (PIR), which reflects the achievement of outputs, purposes and goal. The PIR is a USAID management tool which provides a current status of project implementation and allows UCDs, the UF Project Team and USAID to make corrections, adjustments and decisions in activities which lead to project purposes and goal. USAID, UF, and UCDs also meet biannually to review the UF work plan.

An annual project meeting allows for UCDs, the UF Project Team and USAID to review progress and make adjustments to the project.

Financial Management

The GRC provides annual operating and investment budgets to UCDs for the fiscal year July 1 - June 30. There are two financial management structures at UCD, one for general administrative and operating units and the other for INADER.

Administrative and Operating Unit

The Director of the Division of Administration and Finance (DAF) has the authority and responsibility for the operating and investment budgets and the allocation of resources from these two accounts to the general administration and operating units. The DAF Director reports to the Secretary General of the UCDs. The DAF contains three services: administration, finance, and construction and maintenance. UCDs is required to follow the GRC state financial system in accounting transactions, expenditures and budget control systems for procurement of goods and services.

INADER

The Secretary General of INADER has the authority and responsibility for budget management and allocation of resources to the INADER administration and its academic departments. The INADER Secretary General reports to the Director of INADER. This office also follows the established GRC state financial system.

Because UCDs is a governmental institution, the Ministry of Finance must by law assign a financial controller to UCDs. It is the responsibility of the controller to do the following:

- assure the custody of GRC funds allocated to UCD.

- review pro-forma invoices before commitment of expenditures and approve expenditures against committed funds.
- verify invoices prior to payment, make payment and maintain receipts and records of expenditure.

The financial controller has five accountants who are assigned to the garage, farm, cafeteria, INADER and the general administration. They are responsible for goods and services procurement, inventory control and preparation of payment documents and certification of receipt of the goods or services.

The evaluation team fully concurs with the Kooh-Mure preliminary report, of February 1990, on UCDS' financial accounting, planning and management in noting *a critical need to augment the State financial system with an effective accounting and financial management system* to improve commitments, balance and expenditure accounting as well as to provide real time information on budget status and past performance review. The training of personnel and the computerization of financial management elements are essential to the implementation of an improved budget management system. UF financial advisory assistance in developing an improved financial management system is being provided.

Relevance of Program

Although the levels of production of most agricultural commodities in Cameroon have been generally satisfactory and in some cases have even exceeded demand, their sustainability is doubtful. Field rotation (shifting agriculture) is still the predominant system of food crop cultivation. Productivity of land and labor is relatively low. Also, population pressure on the land is mounting and as a result marginal land is increasingly being brought under cultivation. In several areas of the country, there is growing evidence of soil erosion.

There is a real need to develop economically feasible alternatives to shifting agriculture that will increase productivity, while at the same time ensure conservation of the land resource. Scientists, technicians and managers will be required to develop reliable information for policy formulation and decision making, to create and disseminate appropriate technology, to operate successful agricultural enterprises and to staff agricultural support institutions and agencies.

This need can be met, on a continuing basis, only through the training of Cameroonian human resources in and by Cameroonian institutions. UCDS is the lead institution to serve this national need. It is young and still lacking adequate facilities and equipment, and appropriate and efficient management systems. Like most young institutions, it is developing rapidly to serve its important mission. That mission is clearly stated and its fundamental importance for the socio-economic development of the country is beyond question. Few, if any, other national institutions can legitimately claim greater priority.

The Regional Role of UCDs

UCDs has a number of characteristics which support the concept of it serving a regional role, in addition to its primary role of service to agriculture in Cameroon. These unique features include its commitment to teaching, research and outreach focused on the needs of farmers and agribusiness, its four-year curriculum which prepares students for participatory rather than bureaucratic roles, and its existing as well as planned post-graduate programs.

At present, UCDs programs include regional foreign nationals. It is reasonable for USAID, other donors, and other West African governments to support non-Cameroonians at UCDs, where these students can profit from the investments in faculty, facilities, and programs already in place. UCDs should be encouraged to achieve the regional roles envisaged in the 1985 Africa Bureau paper: "Plan for supporting Agricultural Research and Faculties of Agriculture in Africa." In the future, UCDs' curricula, linked with those of other professional schools in Cameroon, may provide advanced professional training not available elsewhere in West Africa.

Finally, programs or research excellence, international linkage and outreach such as in roots and tubers, cereals production, soil science, agricultural economics and the UCDs library constitute additional strengths that can make powerful contributions to agriculture throughout the West African region.

MESIRES Minister Abdoulaye Babale; Director of Higher Education, Jean M'Foulou; UCDs Director General Rene Owona, and others all agree that UCDs should serve a regional role. This is already happening in several limited ways, ranging from leadership for endorsement of applied agricultural research as fully accredited by the Association of Faculties of Agriculture in Africa (Abidjan, January 1990), to the admission of undergraduate students from Chad, to the new INADER curriculum in September, 1989.

The challenge to UCDs is to maintain its focus on the mission already adopted and to sustain the strategies that support Cameroon's national needs while at the same time accommodating the expectations of national and international leaders for the increasing regional role of UCDs. The ethnic and agro-climatological diversity of Cameroon provides a range of opportunities for studies, research and outreach relevant to the interests and needs of regional scholars. It is reasonable to extend these opportunities, which reflect the mission and strengths of UCDs, to others in West and Central Africa.

At this stage in the development of UCDs, however, its regional role should be secondary and complementary to its primary mission as a Cameroonian national institution.

Faculty Performance Management

UCDs leadership is committed to a performance evaluation and reward system that includes the following elements:

1. Institutional mission statements
2. Departmental mission statements
3. Individual faculty position descriptions, including split appointments
4. Individual faculty annual plans of work
5. Individual faculty annual achievement reports
6. Annual faculty performance review including:
 - Student evaluations
 - Peer evaluation of research
 - Peer evaluation of outreach
 - Department head overall evaluation

At present, faculty initiate requests for step increases in salary within their existing academic rank. Proposals for promotion in rank are initiated by department heads and discussed by faculty peers within the department. These can be endorsed by the respective department heads to go to the administration for its consideration. In the past, faculty have sought heavy teaching loads to obtain salary rewards based on the number of teaching hours. Faculty engaged in research now also receive a supplement to their salaries.

It is unclear to the evaluation team how the proposed faculty evaluation and reward system will be merged with or will replace the existing system. Administrators, however, recognize the need to convince faculty of the desirability of the new mission and UCDs. It is equally important that faculty have confidence in the objectivity and fairness of any new evaluation and reward process. The best means to accomplish this is to include the faculty in the development and implementation of the process and to keep them fully informed of the results.

Women in Agriculture in Cameroon

It is true that women are the principal producers of food crops in Cameroon, both for home consumption and for local markets. In addition, women "....are responsible for family nutrition and child care. Improving women's access to technology and income earning potential, and providing health and nutrition education are the necessary ingredients in the design of food security programs." (WB Cameroon Agricultural Sector Report, Vol. I, p. vii).

UCDs is fully aware of the importance of women in agriculture. However, only six percent of UCDs students are women, and women graduates are located primarily in Centre and Littoral Provinces, especially in Yaounde and Douala, where their contact with women farmers is relatively limited.

A simplistic approach of increasing the percentage of women in the student body and faculty seems unlikely to achieve much progress in improving women's access to technology, income earning potential, and health and nutritional education. The sociology, health and nutrition oriented courses now included in the UCDs curriculum are a tiny fraction of the total and do not focus on the needs cited above.

There is need for UCDs faculty to reconsider the special roles, problems and needs of women in agriculture and the home. Faculty and students must be sensitized to these needs and address them as appropriate through the curriculum, research and outreach programs.

There is a similar need to address the roles and needs of youth in agriculture.

Forward Planning and Priority Setting

There appear to be various individual concepts of short term operational objectives and long term visions of UCDs development. The mission statements of UCDs and its three functions, (Appendix G), provide definitions of basic roles and strategies. They need now to be supplemented by *medium term* (five years) areas of programmatic focus and priorities (perhaps three to five areas).

To be meaningful and followed in program development and execution, the priority setting process needs to involve faculty. It would seem that the three established Commissions on Teaching, Research and Outreach might be the mechanisms for such participation.

The need for such priority and focus establishment is most obvious in Research and Extension. These two functions might well have quite similar subject matter foci. Examples of such areas of priority effort and medium term focus might be:

- Horticultural crop systems
- Plant protection
- Agribusiness and private sector development
- Agricultural policy analyses
- Natural resource management

In teaching, a specific planning need is for the development of progressive "practicum" activities for the four year programs of the various options.

Certainly much thought is being given to such planning. It appears that it should be more formally commissioned, broadly based and expedited. Time is of the essence as these young programs are developing. Limited fiscal and human resources suggest that "scattered shot" programs without focus are an inefficient and unaffordable academic luxury.

Cost Reduction Measures

The development of the new administrative structure and the consolidation of two operating systems at UCDs has provided an opportunity to seek increased efficiency and cost reductions. This process, always appropriate in astute management, is especially called for by the economic stresses of Cameroon.

In addition to general "belt tightening", several very significant cost saving measures have been implemented:

- (a) purging the utilities billings of non-UCDs entities - 15 million CFA/year
- (b) modest redesign of UCDs septic system to eliminate pumping and hauling - 6 million CFA/year
- (c) restoration and utilization of UCDs guest house in place of hotel usage - 6 million CFA/year
- (d) reduction of vehicle fleet from 130 to 52 - 20 million CFA/year
- (e) computerization of payroll processing reducing personnel by 18 and eliminating penalties for late submissions - 72 million CFA/year
- (f) cafeteria operations improvement - 37 million CFA/year, and
- (g) conversion of 19 excess drivers to day security duty to reduce thefts and damages - not quantified.

The largest cost saving action to date relates to the development and implementation of a single administrative organization (INADER) replacing the duplications of ENSA and ITA.

These savings accrued, in major part, to the GRC. Some personnel savings were converted to other program needs. Still other lesser components represent actual cost savings for the meager UCDs budget. The process of seeking savings without curtailing programs continues, with planned attention to the line losses in the electrical system.

Revenue Generation

The GRC is urging all public sector entities to pursue revenue generation whenever possible. The motivation for revenue generation is the need to increase or sustain budgetary resources. *This will require GRC approval of institutional retention and recycling of generated revenues.* UCDs is pursuing such fiscal policy and procedural authorization with optimism. Signals from the GRC in this regard are encouraging (Appendix S).

There are a number of UCDs operations which have revenue generation potential; e.g. the university farms, the Professional Development Center, the media center, food service, student housing, book store, research grants and contracts, outreach materials and services, analytical laboratories, faculty housing, recreational facilities and sharing of proprietary intellectual property returns, e.g., publications, technical processes and exploitable discoveries. These, and others, should all be considered with care and caution.

There are a number of hazards and sensitivities which must be considered as these potentials are pursued.

- There is risk of excessive and escalating expectations for revenue generation to substitute for GRC budget allocations.
- The overhead costs to the University must be considered and provided for by charge policies.
- Continuing restraint must be exercised to prevent revenue generation from over-shadowing the primary institutional function of the generating unit. Entrepreneurial activities should always be complementary to the teaching, research and outreach functions of UCDs.
- Unfair (subsidized) competition with private sector interests and development efforts should be avoided.
- A clear and fair policy should be established, in advance, for "intellectual property" revenue sharing between UCDs, the unit of origin, and the faculty member (perhaps 30, 30 and 40% respectively).
- Internally generated revenue should normally be recycled into the operations of the generating unit.
- In only a few units might the revenue potential be adequate for self-sufficiency of operating costs, e.g. farms, cafeteria, Media Center.
- Faculty and staff should be aware that either external or internal revenue generation is possible only because of the institutional stature, structure, facilities and human resource pool of UCDs. Thus, the institution has an equity in the revenue.

- Effective accountability and administrative mechanisms are essential for revenue development and management.

Sustainability

Most references to sustainability emphasize fiscal support. Of course, this is a very real requirement that must be addressed, but the evaluation team suggests that sustainability includes:

- Fiscal resources
- Professional development
- Adaptability to changing conditions
- Institutional identity and image

The evaluation team also shares concern about the connotation of the term "Sustainability", as reflecting status quo or perpetuation of present state. This is quite an inappropriate concept for a young emerging institution, which might be compared to a dynamic, high-achieving adolescent.

Fiscal Resources

The economic crisis of Cameroon occurred in about midpoint of the AEP and continues with, perhaps, some optimistic indications of a start toward recovery. Economic development, starting from whatever stage or condition, will be based upon the resources of the country and the related policies and structures. In the case of Cameroon, the primary resources are people (80% rural), land, and climate. These combine to mean that agriculture, including input and output agribusiness, and attendant rural development, is the primary national development base. Agriculture based development is strongly dependent upon competent human resources for the generation, dissemination, and utilization of relevant technology, and the entrepreneurial elements of the sector.

UCDs, as the only agricultural university in Cameroon, with an integrated teaching, research and outreach mission, as the only bilingual agricultural university in Sub-Saharan Africa, and as a designated multi-national institution, has a key role to play in the development of Cameroon and the region.

UCDs is not part of the economic problem, but an essential part of the solution. It should, therefore, be accorded a special priority in the allocation of resources by the GRC. The team has received indications from high levels of GRC and UCDs that this is recognized and intended.

Professional Viability

Continued technical and professional development of present and future faculty members is also a key component of sustainability. Various combinations of teaching, research and/or outreach involvement by individual faculty members assist in this process through synergistic effects. Library resources, on-campus seminars, peer associations and special development offerings are important. But opportunities for national and international contacts, collaboration, and special training are also needed for professional development and sustained productivity. UCDs must provide the incentives, mechanisms and resources for this element of sustainability.

There are strong indications that UCDs leadership recognizes this area of continuing need and will be making special effort to provide for it.

Adaptability to Changing Needs

Sustainability also requires adaptation to changing needs and circumstances of constituencies, e.g., students, agencies, enterprises, rural residents and officials. Examples of UCDs adjustments to newly defined needs are: (1) the new four-year program of INADER, (2) the increased practical orientation of the curriculum and (3) the shift from public sector targeting of graduates to include orientation for the private sector.

The adaptation process is being applied to the developing research and outreach programs. The adaptability component of sustainability is a continuing process.

Identity and Image

The establishment of identity and cultivation of a favorable image are important to sustained support and effectiveness of any institution. In the case of a newly established institution, this requires special effort to make its existence and offerings generally known to constituents through communication, contacts and performance.

Lessons Learned

1. Assuming professional competence and dedication on the parts of all involved, genuine mutual respect and personal friendship between counterparts are key elements contributing to the success of the technical assistance project. These elements are well demonstrated by the current advisory team and their UCDs counterparts.
2. The U.S. land grant institutional concept of integrated teaching, research and outreach is more appropriately *adapted* than *adopted* as applied to other national

cultures, institutional environments and operating conditions. Since "Land Grant" as applied in the U.S. has uniquely American historical implications, references in non-U.S. contexts may be more effective if an adjective such as "integrated" or "comprehensive" is used where the three elements are brought together.

3. Research performed by UCDs faculty is an important source of input to an effective outreach program, but it is not the only valid source of technical information. Well trained agricultural scientists have acquired a broad array of such information which can be provided without waiting for the results of new, original research.

Similarly, useful research information has been produced in Cameroon and other West African countries with agro-ecological similarities. Intelligent professionals can extract relevant information from these sources as the basis for producer-oriented outreach communications.

4. The eight-year time frame of the project was too short for full realization of all eight defined outputs with measurable programmatic results, especially in the context of the faculty training component, which was a prerequisite to other program outputs.

Too little time was allowed in the project design for individual advanced degree training programs. The expectations of months/years necessary to complete M.S. and Ph.D. degrees were unrealistic, whether for Cameroonian or U.S. students.

5. Where an output, such as construction, is a condition precedent to the achievement of other project outputs, it must keep pace if the other project objectives are to be met.
6. Major changes in national economic conditions, from apparent prosperity to an economic crisis, within the first four years of the project had dramatic impact on the entire national development process, including the focus of UCDs which changed from training graduates for public service to a private sector orientation.
7. Advanced degree training in agriculture in U.S. universities does not necessarily prepare graduates as effective classroom lecturers, independent researchers or competent outreach agents in the Cameroonian context. These achievements require mentoring, experience, in-service training, and direction to ensure that faculty outputs are effective and relevant to national needs.

Recommendations

These recommendations follow from the preceding analyses of accomplishments, current status and other issues addressed. Many represent items already identified by UCDs and/or the UF team and some are being addressed. They are included here as indications of concurrence, support, and relative importance to UCDs development. The recommendations are presented in three groupings relating to administrative, programmatic and operational development.

Administrative

1. It is imperative that UCDs expedite the process of **position-description development** for all faculty, staff and administrators. Position descriptions for faculty should be promptly followed by establishing a system of **individual annual plans of work**. Given a position description and annual plans of work, each faculty member should have an **annual evaluation of performance**, both qualitative and quantitative, by the department head and division administrators with feedback to the individual and a copy placed in the personnel files.
2. UCDs faculty must continue the development and refinement of the new **four year curriculum and its options**. It is essential that **course descriptions** and brief topical outlines be developed and the descriptions catalogued.
3. Construction and renovations should be held to the established schedules in order to accommodate the courses of the new curriculum and for development of the research program. Concurrently, a major special program of **"catch-up" maintenance** of lower campus facilities should be implemented.
4. Major attention must be given to **financial management** organization and procedures for efficiency, control and accountability, e.g., the Kooh et Mure study.
5. More effective **intra-campus communication** mechanisms are needed to keep faculty and staff informed about policies, procedures, events, activities, issues, etc. To be "members of the team", faculty members must have a stake-hold in the processes. Regular **quarterly faculty assembly**, **weekly administrative council** (including department heads), and **weekly departmental staff meetings** are recommended.
6. The concept of **synergistic mutual strengthening of teaching, research and outreach** should be emphasized. It seems that some faculty members visualize them as important but separate areas, integrated only by placement within UCDs mission. It is recommended that individual faculty members not necessarily be expected to formally engage in all three areas, teaching, research and outreach, but rather **various combinations of two areas** as best fitting their special abilities and overall program needs.
7. Continuous attention should be given to **broad education of students** along with their technical training. Graduates will need intellectual and professional **breadth and versatility**, along with technical competence. Students need to be made aware of the **total mission of UCDs** for their understanding and for their role in public representation of the institution.

Programmatic

8. The continued development and implementation of **research and outreach programs must be given priority attention**. UCDs should promptly define a limited number of **research priority areas**, within which projects would be funded. Such areas of emphasis might include agricultural policy analysis, natural resource management, plant protection, horticulture and private sector development. Scattered research and outreach efforts would not represent efficient use of limited human and fiscal resources.
9. Multi-disciplinary research should be encouraged, but **young scientists need time to establish themselves** and develop experience and self-confidence to contribute to team effort. **More communication and guidance for returned participants** are needed to help them develop as stake-holders in the programs of UCDs. Department Heads and the limited number of senior faculty have key roles in this, as do upper level administrators.
10. Continued effort should be directed to development of **practicum modules for year one through four**, progressing from rudimentary to more advanced skills. These should be documented each year for student clarity of purpose, context, and schedule. For upper level students, these modules could be coordinated with faculty research.
11. It is recommended that the **stage component** of the present curriculum **be re-evaluated** in terms of its cost effectiveness and importance, given the increased practicum and the memoire requirements.
12. Continuing attention must be given to **teaching effectiveness and skills development** through seminars, workshops, teaching aids, and student evaluation feedback. Because all courses are required, the instructors' performance and course value are not reflected in course enrollment. Therefore, a **regularized process** providing for **student evaluation of courses and instructors** is strongly encouraged. Appropriate usage of this feedback becomes an inducement for improved teaching and an element of annual performance evaluation of faculty members.
13. **Agricultural mechanization is recommended** as an option. This option along with service courses for students in other options should be offered by the **Agricultural Engineering Department**. Such graduates could serve well in applied research, outreach and the private sector. **Agricultural engineering** as a major curriculum **should not** be given attention in the near future. This would be complex and very costly, and other needs are more obvious. The few agricultural engineers needed could be more cost-effectively developed in other ways.
14. The development of a **broadened forestry option** should be given early but deliberate attention, incorporating agro-forestry, aquaculture, wildlife and, perhaps, an element of tourism interface.

15. It is recommended that the development of **Master of Science degree programs** not be given high priority at this time. While recognizing the interest, including some established post-graduate activity in plant protection, the evaluation team urges that priority be given to research, outreach and the new undergraduate curriculum. The possibility of **doctoral programs should be laid aside** at this point and considered as a very long range goal. **Continued U.S. and/or third country advanced degree training** should be arranged for replacement faculty and to fill unmet specialization needs.
16. The utilization of in-country specialists as **guest lecturers** is encouraged. If carefully selected, such persons **from other agencies and from the private sector** can also serve as role models for students.
17. **Institutional linkages** for interactions and collaboration must be developed and maintained, in-country, regionally, and globally.

Operational

18. High priority should be given to **maintenance capabilities**. The organization and staffing must be fleshed out with planned facilities, personnel skills, documented procedures and increased budget. In-country **skills training** should be arranged for a variety of **craftsmen** including carpenters, electricians, electronic technicians and plumbers.
19. In-service **training programs for managerial and clerical staff** should be established and implemented on a continuing basis.
20. It is urged that continued priority be accorded to the **course scheduling process, the registration system and the student records system**.
21. **Procedural and policy guideline documents** should be developed and used for a wide array of functions such as procurement, personnel administration, transportation, publication and access to the services of the several established support centers.
22. The current opportunity for obtaining official approval to **receive and retain revenues** should be exploited (Appendix S). **Policy guidelines** for executing and monitoring **revenue generating activities** should be developed with particular attention to their relevance to the missions of UCDs and the generating units. Charges should take into account **all institutional costs** so that appropriated support does not subsidize the function and create unfair competition for the private sector.

Considerations For Phase II

General Comments

The evaluation team strongly and unanimously believes that there should be a Phase II of the AEP. Much has been accomplished in Phase I toward the transformation of UCDs into a comprehensive institution for teaching, research and outreach support of agricultural development in Cameroon. UCDs has strength, enthusiasm and a unique potential for serving the primary base of the country's economy. But, UCDs is still young and critically needs further assistance during the next few years to facilitate its continued functional development and its maturation.

Institution building is a long process. It involves the establishment of mission, organization, and operational concepts, the development of human and physical resources, and the definition, activation and maturation of appropriate programs and relationships, thus establishing a distinct character and image. Planners of the AEP initially suggested a twenty year time span for this process. In the eight years of Phase I, UCDs has made impressive progress, but it is not yet ready to move forward without external assistance.

Its teaching component, although farthest along, still needs much continuing attention to conformation, content and quality.

Research activities have been initiated by several returned advanced degree participants. Facilities, yet in construction, and equipment limitations have been constraints on the research which can be done. This, combined with the lack of established program priorities, causes the research activities to be without planned foci. There is not yet, what might be considered a coordinated research program. There is need for establishing priority areas, proposal critiquing, budget development and performance evaluation. Time is of the essence for effective programming of the young well trained scientists.

The outreach efforts to date, although praiseworthy, have been rather limited and represent only a tentative beginning. These efforts cannot be regarded as constituting a program with clear purpose and relationships. The needs here are for functional concepts organization, methodology, planning and self-confidence based on experience.

The next few years will be critical ones in the development of UCDs. To end U.S. assistance would very likely be to forfeit much of the accomplishment to date. Without continued assistance, UCDs' newly trained faculty, its emerging programs in teaching, research and outreach, as well as the still evolving administrative and management structure, could well be set adrift. UCDs would almost certainly fall short of its unique potential for serving Cameroon and the region.

Issues and Concerns to be Addressed under Phase II

Phase II of the AEP should be aimed at consolidating the progress achieved by UCDs to date, increasing the efficiency of its management systems and addressing the long term financial viability of UCDs. Specifically, attention should be given to:

- Establishing an effective financial management system
- Development of Research and Outreach priorities and programs
- Continued improvement of curriculum and instruction
- Continued professional development of the faculty
- Development of non-academic support staff
- Development of academic, student and alumni affairs
- Addressing the issues of women (and youth) in agriculture
- Clarifying and accommodating the regional role of UCDs
- Renovation of facilities on the lower campus
- Providing equipment and furnishings for newly constructed and renovated facilities
- Improvement of utilities - electricity and water
- Catching up with the back-log of deferred maintenance
- Increasing maintenance capabilities - quality and quantity
- Continued development of the campus farm

Conversely the Evaluation Team Recommends that:

- Student enrollment be stabilized at approximately its present level
- The university farms at Bansoa and Djouttitsa not be given investment priority
- Development of agricultural engineering as a major curriculum not be pursued
- The M.S. degree program not be given early attention
- The goal of a doctoral program be deferred for the foreseeable future

Design Concepts

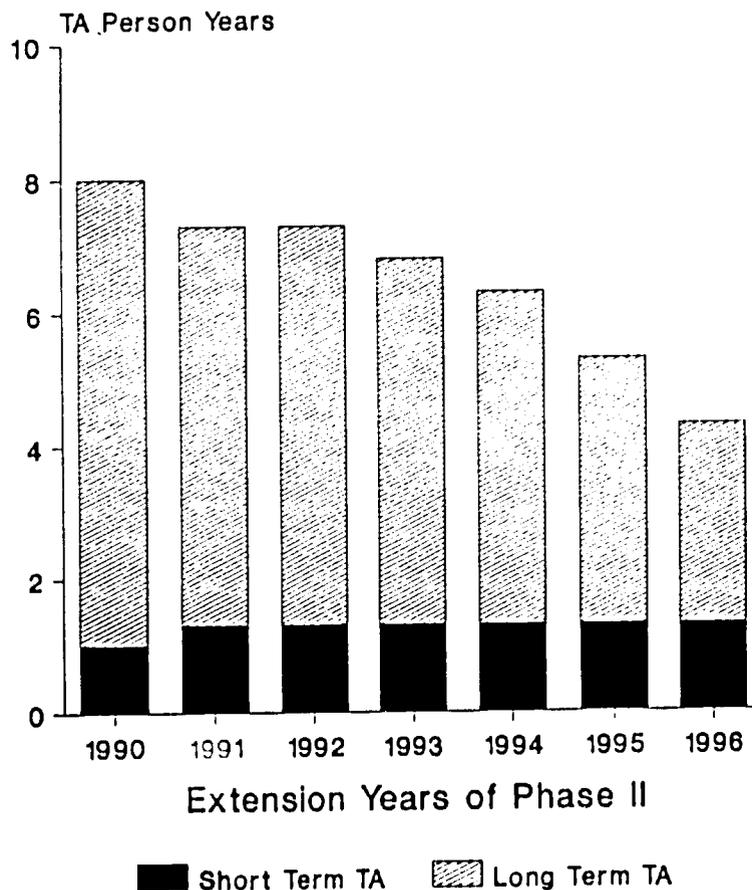
Although it is not its function to design Phase II, the evaluation team recommends that:

- Phase II of the AEP be planned for a period of six years
- Long-term technical assistance be scheduled in a phasing-down mode, as illustrated in the attached graph
- Increased levels of short-term, repetitive consultancies be provided, using carefully selected specialists, including, as appropriate, former project advisors and participant academic advisors
- Provision be made for post-project linkages, both institutional and individual
- Technical assistance (long and/or short term) be provided in the following areas:

Curriculum development
 Research management and station operation
 Outreach program Development and Management
 Agricultural Economics - production economics and policy analysis
 Agricultural Mechanization
 Vegetable and fruit production
 Computer usage and maintenance
 Aquaculture
 Wildlife
 Library

The evaluation team also recommends that the "collaborative assistance mode" be continued. Based on the overall performance of UF/FAMU, and the quality of their team as observed, the evaluation team also recommends strongly that the present contractor design and implement Phase II.

The evaluation team perceives UCDs as a powerful agent of change. To achieve this role, it is imperative that Phase II be appropriately designed and implemented.



Reference Documents Used

AID	-	Project Paper: Agricultural Education	1981
AID	-	Project Loan and Grant Agreement for Agricultural Education	1982
AID	-	Collaborative Assistance Contract for Agricultural Education	1982
AID	-	Collaborative Assistance Contract between USAID/Cameroon and the University of Florida	1990
AID	-	Project Evaluation Summary: Agricultural Education	1984
AID	-	Threshold Evaluation of the Agricultural Education Project	1986
AID	-	Audit of the Agricultural Education Project in Cameroon	1987
AID	-	Country Development Strategy Statement: Cameroon	1989
AID	-	Plan for Supporting Agricultural Research and Faculties of Agriculture in Africa	1985
UCDs	-	The University Center of Dschang: Institutional Operation Mission Statement	1988
UCDs	-	Programs Review of the Institute of Agricultural Research	1989
UCDs	-	The University Center of Dschang, Cameroon, Past, Present and Future	1988
IRA	-	Performance Contract between the Government of Cameroon and the Institute of Agricultural Research	1989
IBRD	-	Cameroon Agricultural Sector Report	1989
FAO/IBRD	-	Cameroon National Extension and Training Project: Interim Preparation Report	1987
UCDs/UF	-	Annual Report 1989. The Cameroon Agricultural Education Project	1989
AID/DAI	-	Recurrent Cost Study of the University Center of Dschang	1988
AID/DAI	-	Demand for Graduates and Other Services and Products of the University Center of Dschang	1989
AID/IFDC	-	Cameroon Fertilizer Sector Study	1986
KOOH&MURE	-	Analysis of Accounting and Financial Planning and Management Systems of UCDs	1990
MINAGRI	-	Final Report: National Seminar on Extension and Interventions in the Rural Area	1985
MINAGRI,	-	An Executive Guide to the 1984 Agricultural Census: Part I. Farm and Farmer Characteristics, Farming Methods and Practices	1988
Gauthier Alvarado and Associates	-	Master Plan Report, The University Center of Dschang	1986

Reference Documents used, cont.

Balis, John S.	-	Discussion of Strategy and Programs for the Development of the Agribusiness Sector	1989
Judy William H.	-	The Impact of Agricultural Research on End-Users and Pass-Through Users: Cameroon NCRE, ROTREP and Bean/Cowpea CRSP Projects	1988
York, E.T.	-	Observations Concerning the National Seminar on Agricultural Extension in Cameroon and Recommendations for USAID Action	1985
Tchala-Abina, F.	-	The Profile of the Student Body of UCDS	1989
Nyemba-Ambela, J.	-	The Tracer Study of Graduates of the University Center of Dschang	1989
Tchala-Abina F., et al.	-		
Tchala-Abina F.	-	Etude du Cas de L'Institut National de Developpement Rural	1990

Appendices

- A. Evaluation Team Delivery Order (November 4)
of Indefinite Quantity Contract 624-0510-1-00-90039-00**
- B. Long Term Participant Trainees and Guidelines**
- C. Short Term Participant Trainees and Guidelines**
- D. Contract Amendment Number 12**
- E. Campus Map and New Construction**
- F. Map of Cameroon, Provinces and UCDs Sites**
- G. UCDs Mission Statement**
- H. New Four Year INADER Curriculum**
- I. Curriculum Design Diagram**
- J. Time Phasing of Old and New Curricula**
- K. UCDs Academic Calendar, 1990-91**
- L. Instruction Materials Catalog - 1990**
- M. UCDs Brochure**
- N. UCDs Newsletters**
- O. Maintenance and Motor Pool Budget, 1983-89**
- P. List of Information Leaflets**
- Q. Examples of Special Information Bulletins**
- R. Examples of Outreach Programs**
- S. Ministers' Deregulation Directive Communication - 1990**