

AGENCY FOR INTERNATIONAL DEVELOPMENT <b>PROJECT DATA SHEET</b>		1. TRANSACTION CODE <input type="checkbox"/> A = Add <input type="checkbox"/> C = Change <input type="checkbox"/> D = Delete Amendment Number _____	DOCUMENT CODE 3
2. COUNTRY/ENTITY Cameroon		3. PROJECT NUMBER 631-0031	
4. BUREAU/OFFICE AFR		5. PROJECT TITLE (maximum 40 characters) Agricultural Education	
6. PROJECT ASSISTANCE COMPLETION DATE (PACD) MM DD YY 1   2   3   0   8   8		7. ESTIMATED DATE OF OBLIGATION (Under "B." below, enter 1, 2, 3, or 4) A. Initial FY 8   2   B. Quarter 4 C. Final FY 8   7	

8. COSTS (\$000 OR EQUIVALENT \$1 = )

A. FUNDING SOURCE	FIRST FY 81			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	1257	7043	8300	15382	27139	4302
(Grant)	( 1029 )	( 271 )	( 1300 )	( 12646 )	( 4024 )	( 1667 )
(Loan)	( 228 )	( 6772 )	( 7000 )	( 3236 )	( 23115 )	( 2635 )
Other U.S.	1.					
	2.					
Host Country		8659	8659		74378	7487
Other Donor(s)	4930	8430	13360	8930	8890	1782
<b>TOTALS</b>	6187	24132	30319	24812	110907	13571

9. SCHEDULE OF AID FUNDING (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) FN	180	690	690			16670	26351	16670	26351
(2)									
(3)									
(4)									
<b>TOTALS</b>						16670	26351	16670	26351

10. SECONDARY TECHNICAL CODES (maximum 5 codes of 3 positions each)

968	620	660	690		
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11. SECONDARY PURPOSE

180
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12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code	R/AG	XII				
B. Amount						

13. PROJECT PURPOSE (maximum 480 characters)

To assist the GURC to create an agricultural university capable of training managers, researchers, planners and teachers who can effectively staff the agricultural support insitutions of Cameroon.

14. SCHEDULED EVALUATIONS

Interim	MM YY	MM YY	Final	MM YY
	1   2   8   4			1   2   8   6

15. SOURCE/ORIGIN OF GOODS AND SERVICES

000  941  Local  Other (Specify) 935

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a \_\_\_\_\_ page PP Amendment.)

17. APPROVED BY	Signature	Ronald D. Levin <i>Ronald D. Levin</i>	18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DISTRIBUTIONS, DATE OF DISTRIBUTION
	Title	Director USAID/Cameroon	
	Date Signed	MM DD YY 0   6   2   0   8   1	MM DD YY 0   7   2   9   8   1

AGRICULTURAL EDUCATION PROJECT  
631-0031

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ABBREVIATIONS USED

A/E	Architectural and Engineering
BAC	Baccalauréat (equivalent of High School diploma - French)
BEPC	Brévet d'Etudes du Premier Cycle (equivalent of Middle School certificate - French)
CDC	Cameroon Development Corporation
CEPE	Certificat d'Etudes Primaires et Elémentaires (equivalent of Elementary School certificate - French)
CENEEMA	Centre National d'Etudes Expérimentales de Machinisme Agricole (National Center for Studies and Experimentation in Agricultural Machinery)
CAM	Collaborative Assistance Method (or Mode)
CNA	Collège National d'Agriculture (National College for Agriculture)
CRA	Collège Régional d'Agriculture (Regional College for Agriculture)
CUDS	
DGRST	Délégation Générale à la Recherche Scientifique et Technique (General Delegation for Scientific and Technical Research)
ENSA	Ecole Nationale Supérieure Agronomique (National School of Agronomy)
ETA	Ecole des Techniques Agricoles (School of Agricultural Techniques)
FSLC	First School Leaving Certificate (equivalent of Elementary School certificate - English)
G.C.E. A/L	General Certificate of Education, Advanced Level (equivalent of High School diploma - English)
G.C.E. O/L	General Certificate of Education, Ordinary Level (equivalent of Junior High School certificate - English)
GURC	Government of the United Republic of Cameroon
IA	Ingénieur Agronome (Agriculturalist) - Degree from five-year ENSA program
IBRD	International Bank for Reconstruction and Development
IRA	Institut de Recherches Agronomiques (Institute for Agricultural Research)
IRTISS	
IRZ	Institut de Recherches Zootechniques (Institute for Zoological Research)
ITA	Institut des Techniques Agricoles (Institute of Agricultural Techniques)
IT	Ingénieur des Travaux Agricoles (Engineer of practical agriculture - degree obtained from three-year ITA program)
MINEP	Ministry of Economic Affairs and Planning
MINED	Ministry of National Education (also MOE)
MOA	Ministry of Agriculture
MOL	Ministry of Livestock and Animal Husbandry
SEMRY	Société d'Expansion et de Modernisation de la riziculture de Yagoua (Society for the Expansion and Modernization of Rice growing at Yagoua)

SODERIM Société de Développement de la riziculture dans la Plaine de  
Mbo (Society for the Development of Rice at the Mbo Plain)  
STAGE Off-campus work/training sessions  
TA Technicien d'Agriculture (Agricultural Technician, terminal  
secondary school degree)  
UCD University Center at Dschang (also UCDS and UCAD)

DESIGN TEAM MEMBERS

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## Chapter 1

### I. SUMMARY AND RECOMMENDATIONS

#### A. Grantee/Borrower and Executing Agencies

The Grantee/Borrower will be the Government of the United Republic of Cameroon (GURC) represented by the Ministry of Economic Affairs and Planning. The University Center at Dschang (UCD), under the direction of the Ministry of National Education (MINED), will be the executing agency.

#### B. Recommendations

1. That a grant in the amount of \$16,670,000 over the six year period commencing in August, 1981, be authorized to the Government of Cameroon for implementation of the technical assistance aspect and related commodity procurement, in-country training, participant training, and maintenance grant components of the Agricultural Education Project as described in Chapter Two of this project paper. A loan, on standard development loan terms in the amount of \$26,351,000, should be authorized to the GURC to help finance the construction and commodity procurement aspects of the same project. The GURC contribution to the project will amount to the CFA equivalent of over \$74,878,000 (approximately 53.2% of the total cost). The International Bank for Reconstruction and Development (IBRD) will contribute \$7,000,000 to the project and the Government of Belgium will contribute the equivalent of \$8,100,000 in Belgian francs (approximately 5.1 and 6.0% of the total, respectively). The Government of France will contribute \$2,720,000 (approximately 2.0% of the total).

2. That the requirement for procurement of AID-financed goods and services from Geographic Code 941 (U.S. and approved developing countries) be waived to permit procurement from Geographic Code 935 (U.S. and Free World) source to allow the GURC to purchase, with AID funds, some \$300,000 worth of equipment and books. These waivers are in Annex H.12, Procurement Plan. A \$200,000 contingency waiver against loss and damage to Code 000 source commodities is also requested. No other waivers are required.

#### C. The Project

The project will strengthen the GURC's capability to assist farmers to increase their agricultural production and income through the development of a new University Center for Agriculture based upon the U.S. land-grant model.

Central to this model is the idea that the agricultural university exists to provide practical knowledge and services to the farmer so that he may produce more and better crops. To do this, an agricultural university must have a modern curriculum which combines theory and practice, a faculty which blends scholarship with practical experience, and facilities which allow theory to be applied. Finally, the land-grant school must have strong ties to the agricultural community including extension agents, researchers and, of course, the farmers themselves.

This is not the common model in most developing countries where, too often, graduates of agricultural universities are considered to be elite theoreticians or high-level managers whose advanced skills must not be squandered in field work.

As a product of a land-grant college, on the other hand, the student is trained to enter high and mid-level jobs which require management and technical skills - but always with a strong service orientation. Thus, a graduate of the University Center at Dschang will have had three to five years of classroom work, laboratory sessions, and supervised field work off-campus.

Upon graduation, he will be assigned to a field post where he will supervise extension agents, work in a government research station, or teach at an agricultural college. In any of these positions, he will never be too far removed from his ultimate client - the farmer who needs to have new practices clearly explained and demonstrated so that he feels confident to adopt them himself.

With the land-grant model in mind, the UCD will provide:

- (a) Trained manpower for government and parastatal agencies, including teachers for agricultural technical schools which serve the agricultural sector and will be sensitive to the needs of small farmers and committed to foster the relationships between research and extension.
- (b) An active research program focussed on the problems of small farmers and women.
- (c) Seminars and workshops for high and mid-level agricultural personnel dealing with research and outreach activities.
- (d) A curriculum development center for pre-university level agricultural teachers.
- (e) A new Department of Rural Technology centered around the adoption of appropriate technology by farmers.

The AID loan will finance approximately sixty percent of the facilities to be constructed including teaching blocks in Rural Education, Agricultural Economics, Agriculture and Basic Sciences, and Rural Technology. A new library will also be built with a capacity for 50,000 volumes. Remaining construction will be financed by the GURC, IBRD and the Belgian Government. The AID loan will also finance commodities. The AID grant will finance approximately 150 person-years of long-term U.S. training (55 Masters, 3 Ph.D's) and short-term training, approximately 55 person-years of technical assistance, an in-service training program for the UCD and other government personnel, and buildings and equipment maintenance support.

#### D. Summary Findings

The project committee has reviewed the technical, economic, social, financial, administrative, engineering, and environmental analyses carried out for the proposed project (see Chapter Three and corresponding annexes). In each case, the project was found feasible and beneficial. Further, the project will create significant long-term benefits to the food production sector of the GURC through the improvement of government services to small farmers.

#### E. Legal Criteria

The project meets all applicable statutory criteria (see Annex B). Planning and costing requirements of Section 611 (a) of the 1961 FAA are considered satisfied (see Chapter 3, Engineering Analysis and Annex B). Section 611 (e) is also considered satisfied (see Mission Director's Certification, Annex B). With respect to the Host Country contribution requirement, GURC inputs to the project are conservatively calculated at 50% of total cost (see Chapter Four, Financial Plan). The GURC request for assistance is appended in Annex C.

#### F. Project Issues

When AID/W authorized development of the project paper, it requested that the Mission respond to a number of issues raised during the PID review (STATE 7457). This section addresses those issues.

##### 1. Will the University Center at Dschang become another school for the elite?

As a result of repeated meetings with officials of the Ministries of Education, Agriculture, Livestock and DGRST, it is clear that the GURC is dissatisfied with the way agricultural students are trained and with the substance of their training. Officials stated that graduates need management skills, knowledge of field research techniques, more direct contact with farmers through assigned field work and hands-on practical experience.

The fact that the UCD is at Dschang, in the center of Cameroon's most productive food crop region, is clear evidence of GURC support of field-based agricultural education.

To deny that the UCD is highly selective in its admission policies would be obviously untrue - it is a university which prepares its graduates for top technical and managerial posts in the government. Although its entrance examination is designed to weed out all but the top few applicants, it is an open examination based upon intellectual, not economic or social superiority.

More than three-quarters of the students at the UCD come from rural areas, and 60% are children of small farmers, hardly an elitist population.

The sweeping nature of the UCD reforms in curriculum, field work, research, and linkages with other government agencies are all factors in opening up the university as a service-oriented land-grant type of institution. All these proposed changes reflect the agreement of the UCD officials who want a different kind of university, and not a school which is an intellectual haven for the few political and economic elite.

2. Will the mid-level program at the UCD be weakened if basic science and general education courses are offered at Dschang rather than at the University of Yaounde?

This issue was originally raised by the IBRD since it feared a dilution of course quality at the UCD. With the totally revamped, land-grant model now planned for the UCD, the issue no longer is relevant for two reasons:

- a) The UCD's location in the rural Western province is far better suited to application of theoretical courses to actual problems of farmers than is that of the city-based University of Yaounde. With equipped laboratories, a new library, and a re-trained faculty, the UCD will offer a balanced program in which course work will relate to the physical surroundings of the university.
  - b) Since the first three years of the ENSA and ITA programs will be the same, there can be no question but what the mid-level program will be strengthened. There will also be economies of scale at Dschang as well as new facilities unmatched by the University of Yaounde.
3. Can Cameroon afford the costs inherent in separate campuses at Dschang and the Center for Sciences and Animal and Food Industries planned for Ngaoundéré? Should their close relationship make their location at a common site an attractive alternative?

As a result of discussions with officials of the Ministries of Education and Equipment and the IBRD on June 9, 1981, the following appears to be the latest information available concerning the Ngaoundéré center.

The proposed Ngaoundéré facility is one of four regional higher education centers planned by the GURC. The others are in Buea, Douala, and Dschang. They are planned in order to decentralize the university system and to place each speciality in its most appropriate region. While the planning for Dschang and Douala is the most advanced, there are many indications that the GURC is going ahead with the other centers, i.e. preliminary designs, and the development of courses of study has begun.

For these reasons, as well as the political importance of university decentralization, there is no likelihood that any of the centers will be combined.

While firm details are not available, the center at Ngaoundéré is apparently planned to contain a three-year high-level technician program and eventually, a five-year program. About 40 staff positions are envisioned. The course of study will be centered around food technology, with concentrations in chemistry, biology and geology. There are no apparent plans for livestock or agricultural training at the Ngaoundéré center. In view of these facts and the progress made in developing the UCD on the land-grant model, the project design team does not see the development of these two institutions on a common site as a real possibility.

4. Should AID assistance be limited to curriculum development in order to change the ratios of construction and technical assistance from those presented in the PID?

There are really two issues here:

a) Why have project costs escalated far higher than those presented in the PID?

From the outset of the PP design effort, it was evident that the PID cost projections were seriously underestimated. They were, in fact, based upon IBRD costs estimates made in 1976. Furthermore, the inflationary spiral alone accounted for an increase of almost 100% since 1978, when the PID was written.

It should also be noted that the scope of construction in the PP is the same as that of the PID. The basic issue remains however: What is required to build a modern, land-grant type agricultural university from an institution which is presently understaffed, undertrained and under-equipped? The past year has been spent in addressing this question in close collaboration with the GURC.

b) Why should AID contribute significantly to construction of the UCD?

Inherent in the land-grant idea is the interconnection of curriculum, research and extension - a concept explained in this paper as basic to the success of the project. To reach this goal, the UCD students need the means to translate a paper curriculum into a practical education through work in laboratories, with field extension agents at model farms, and through individual research projects using a well-equipped library.

If the UCD is to adapt in Cameroon, the U.S. land-grant university concept - the stated objective of its Director and of the Ministry of Agriculture - there can be little division in concept or in implementation

of curriculum, training, technical assistance, and physical facilities because each is part of an education system, not pieces of a project each attractive to different donors. The proposed facilities are the minimum required for a land-grant type of university. They are not luxurious nor overly large, but there will be room for expanded enrollment.

If we support curriculum development alone, the UCD will probably remain as it is today - an institution which offers theoretical knowledge in a field which demands its practical application. It is for this reason that neither the University of Florida nor the Mission seriously considered limiting the project to the curriculum component.

5. Should a Title XII institution be chosen to implement this project using the collaborative assistance method?

The University of Florida has been selected for project implementation using the collaborative assistance method. It is anticipated that the University of Florida will call upon Florida A&M to assist in the implementation of the project as it did in its design.

6. How will this project deal with the role of women?

a) Increased opportunity for women in extension services and the UCD

Although there is no overt exclusion of women from extension programs or from the UCD as students or faculty, there is de facto discrimination because women have not had the same educational opportunity as men (less than 30% of Cameroon's primary school graduates are female). The perceptions of many Cameroonians about the role of women will not easily change nor will well-meaning donors force rapid change directly. There are some steps which should be considered by the GURC as the project proceeds however: (1) career counselling at secondary schools to encourage women to choose careers in agricultural management or extension; (2) the construction of a women's dormitory at Dschang.

b) Agricultural services

Extension services in Cameroon are not well-developed to begin with, and so neither men nor women greatly benefit from them. Insofar as the UCD's program is concerned, its extension program will allow students to work with the extension service in the Dschang area where there is a large concentration of women growing food crops. Students will be able to discuss agricultural problems from the women's viewpoint and become more familiar with their work patterns. The experience will by no means guarantee that all women farmers will suddenly receive increased attention from extension workers. It can result, however, in future agriculture officials, who are aware of the needs of women farmers and in training extension agents, in turn, to deal more effectively with them.

c) UCD Curriculum

The new curriculum at the UCD will incorporate the study of the needs and role of women in agriculture.

7. Can the UCD become a regional center for agricultural training?

The UCD will have a program and facilities of generally high quality geared to a practical agricultural education. As such, it can serve a wide clientele from other African countries who have similar needs. UCD has admitted foreign students, and the Director General of UCD foresees little problem with continuing this trend. However, since the needs of Cameroon itself are so great for this training, it must have first priority. Therefore the UCD will, in all probability, not become a regional center for agricultural training in the short-term. UCD plans to offer regional workshops and conferences as part of its program.

8. Do manpower studies exist to determine requirements for UCD graduates in the agriculture sector?

There are a number of studies which project manpower requirements for the agricultural sector in Cameroon. A brief review of each follows:

The Cornell University study projects a short-fall of 954 for managerial posts to be filled from graduates of the UCD through 1985. The Cornell projections reflect GURC budgetary capacity to absorb this number of graduates. Other estimates make the Cornell projections appear quite conservative and, in some cases, touch on areas not covered in the report. For example:

The J.N. recommends 1500 scientists and engineers as a corps of trained personnel needed in a developing country. Cameroon is far short of this number.

The IBRD Education Sector Paper estimated the current need for over 900 new university graduates and trained technicians in agriculture.

The USAID Country Development Strategy Statement (12/79) estimates that agricultural processing plants will create 18,000 new jobs. Processing plants have a need for people trained to fill middle-management and supervisory positions and will compete with the public sector for qualified people. This also means that a cadre of up to 1500 managers will be needed to administer these new programs.

The CDSS also refers to a survey of 290 business enterprises showing that higher level management positions are filled by 1410 expatriates versus 484 Cameroonians. Official government policy is to fill these positions with Cameroonians. There is no breakdown as to the number of these agro-based

businesses, but since agriculture generates 33 1/3% of the GDP and 65-70% export earnings, it is likely that managerial personnel who will graduate from the UCD will be employed in this sector.

The Cameroonian economy appears healthy and there is steady real growth. GURC policies seem favorable toward capital investment from outside the country and the government is stable, which encourages the risk of capital. These factors, plus some of the items cited above, lead to the conclusion that the assumption made by the Cornell Report (Page 46), "The needs of the private sector are negligible," is incorrect. If the curriculum is strengthened in the management area for upper levels of training, as suggested by many people interviewed, strong demand for personnel in these categories will develop in the private sector.

Interviews with the Director of CINEEMA and officials of the Ministry of Agriculture indicate a demand for Rural Technology Department graduates. The addition of this department to the university will complement the present program and it should increase demand for students completing work with this option.

The Director of Livestock expressed to the design team his concern over the large number of veterinarians employed in the Ministry. Cited was a serious need for some animal husbandrymen, geneticists, nutritionists and physiologists. Although he was speaking of a need that would require training beyond the Ingénieur Agronome, Cameroonians sent for such training would likely come from this trained manpower pool. Personnel with an animal science option, coupled with a management emphasis, would be much in demand in the Ministry. This would appear to contradict the Cornell report and increase slightly demand for practical engineers with this specialization.

All these studies indicate that there is a severe manpower shortage of agriculturalists in Cameroon. A minimum number needed now based upon current budgetary capacity of the GURC is 954. If one adds the projected needs of parastatals, the private sector, and the growth of the public sector, this number is more than 3000.

Although it may be unrealistic to expect the GURC to be able to employ all the agronomists needed in the public sector, it is very likely that it will employ significantly more agriculturalists than it does now, because, (1) there will be increased revenue available and increased budgetary allocation for hiring the graduates, and (2) there will be an institution with the capacity to produce increased numbers of well-trained students.

This project was not planned to increase the enrollment of the UCD because manpower estimates were based upon the GURC's budget allocations. However, as the supplier of this specialized manpower, the UCD, with USAID assistance, will have the capacity to produce up to 300 graduates per year without additional teaching facilities and staff, which is double the present capacity.

9. Will the UCD have sufficient linkages to other agricultural services?

There are four major ways which linkages are established between the UCD and other agencies.

- a) Research/Extension/Curriculum/Policy Formation: Three working committees now exist to assure conformity of the UCD program with those of DGRST and Ministries of Agriculture and Livestock. These committees are described in detail in Chapters Two and Three.
- b) UCD Curriculum Development: Personnel from the Ministries of Agriculture, Livestock and DGRST will collaborate with the UCD in the development of its revised curriculum. UCD students will also use IRA and IRZ facilities for their orientation to practical research.
- c) Research/Outreach Activities: Research undertaken at the UCD will be jointly determined by the UCD and government agricultural research agencies, i.e. IRA/IRZ. In many cases, research will be undertaken jointly by members of the UCD, the IRA and IRZ. In addition, facilities and equipment will be shared.
- d) A program will be developed in which the UCD will exchange staff with other GURC agencies, e.g. DGRST and the Ministry of Agriculture. This will help ensure a continued practical outlook for the UCD and the infusion of new ideas to the other agencies. Also, the UCD will use individual specialists from other agencies as part-time faculty and as guest lecturers.

The design of this project also reflects the collaboration of the UCD with other agencies. For example, officials from the Ministry of Agriculture and DGRST were members of, and consultants to the design team.

10. Can AID resources be better utilized by strengthening direct services to farmers, i.e. extension service, credit?

There is no doubt that short-term benefits would occur through investments in those agencies which deal directly with farmers. The fact is, however, that most of these are not effective because of poorly conceived policies, inadequate management and technical capability. Most of their officials do not have a practical orientation to the problems of farmers nor a philosophy of service. It is likely that as soon as AID inputs are terminated, these agencies will revert to past practice.

Through this project, on the other hand, an institution will be developed which will continuously provide trained and motivated manpower capable of improving farmer services and filling present and future leadership positions.

A modern land-grant type university in Cameroon therefore has the potential to affect every agricultural institution permanently, in a manner which no individual investment in specialized areas can match. The fact that the GURC has requested AID help in the development of a land-grant model university is evidence that the government fully intends to utilize this capacity.

Chapter 2

II. PROJECT DESCRIPTION

A. Problem

The population of Cameroon is estimated to be just over eight million, of whom 75% live in rural areas. At present growth rates the population will double by the year 2010, at which time it is estimated that only 50% will live in rural areas. Between now and the year 2010 the urban population will increase fourfold, while the rural population will increase by only 33%. Today, each of the approximately one million farmers must feed his family plus two urban dwellers, or approximately eight people. By the year 2010, each of the then approximately 1,300,000 farmers must feed his family plus six urban dwellers, or approximately 12 people. For Cameroon to maintain its present position of near self-sufficiency in food, each farmer in the year 2010 must grow 50% more food than he does today. Thus, though Cameroon has been self-sufficient in food production until recently, population increases and rural-urban migration will cause its favorable food balance to disappear unless immediate steps are taken to provide farmers with the know-how and other inputs they need to increase their agricultural productivity.

The impediments to increasing agricultural production in Cameroon are basic:

- The physical infrastructures necessary to support a dynamic agricultural sector, such as roads and markets, are not well developed.
- Agricultural inputs such as improved seeds, fertilizers, insecticides, and credit are not widely available.
- The technical production packages (agricultural techniques) for the various agriculture zones are inadequate.
- Extension and other farmer service agencies are not capable or widespread enough to service the bulk of Cameroonian farmers.

The GURC has given agricultural development high priority in its Fourth Five-Year Plan and in its annual budgetary allotments. With assistance from AID and other donors, the GURC is implementing projects which address the first two problems: inadequate physical infrastructure and insufficient agricultural inputs. Efforts to overcome the second two problems must rely on a series of agricultural service agencies and parastatal organizations such as the Ministries of Agriculture and Livestock, Institute for Agriculture Research (IRA), and the Institute for Zoological

Research (IRZ). However, many of these cannot carry out their mandates because they lack sufficient numbers of trained agricultural experts and because those that are available are not well suited to their needs.

TABLE 2.1

Projection of the Manpower Needs of the A2 and A1 Cadres to 1985<sup>1/</sup>

<u>Organization</u>	<u>Needs to 1985 for the A2 Cadre<sup>2/</sup></u>	<u>Needs to 1985 for the A1 Cadre<sup>2/</sup></u>
MOA	140	341
MOL	30	60
Other Ministries	18	-
DGRST	-	-
IRA	168	-
IRZ	34	-
IRTISS	24	-
CUDS	44	-
New Parastatal Projects	88	176
Extension of Existing Parastatal Projects	63	126
Approximate Replacement	19	17
Subtotal	628	720
Plus loss to upper cadre in MOA through pro- motion or examination	-	14
Total	628	734

The MOA's own estimate of its manpower needs, as presented in the Fourth Five-Year Plan, indicated that an additional 750 B.S. level agriculturalists would be required by 1990. If both the Cornell and the MOA estimates are correct, the MOA alone will need 269 additional agriculture graduates between 1985 and 1990.

Another source of demand for agriculture graduates stems from the GURC policy to replace expatriates with Cameroonians as rapidly as possible. There are 50 expatriates in DGRST, 10 in the MOA, and 21 in the UCD.

1/ Agricultural Manpower Needs Assessment. Cornell University, 1979, (Annex H.15).

2/ A2 and A1 Cadres are the highest and second to the highest entry levels into the civil service, respectively.

The needs of the private sector are not well known, but it can be safely assumed that they will grow. The GURC development plan calls for the construction of agricultural processing plants of various types, that will create about 18,000 new jobs. Given reasonable ratios of worker to supervisory and management positions, it was estimated that 1,500 of the total positions would require post-secondary agricultural education.<sup>1/</sup>

The manpower problem is qualitative as well as quantitative. The training of present agriculture experts has been largely academic with a theoretical emphasis. Laboratory and problem-solving approaches have not been significant parts of the curriculum. The result is that agricultural experts, who are products of existing training programs, lack the practical knowledge, skills, and motivation to tackle the problems of food production and are unsuited to work in the front line agricultural service organizations of Cameroon. The present stock of agriculturalists is deficient in other areas. The Cornell study noted that:

"The parastatal organizations were unanimous in arguing that since they were increasingly becoming employers of ENSA graduates, courses in human relations, management techniques, and extension should become an important part of the UCD syllabus. They expect graduates to be able to communicate with farmers and plantation workers. Therefore the graduate, in addition to being a good university-trained agriculturalist, must be able to disseminate knowledge of improved techniques to the small farmers. The directors requested that the departments of agricultural economics and rural education design courses with these new responsibilities of graduates in mind."<sup>2/</sup>

The agricultural research programs of Cameroon are limited and, for the most part, focus on export cash crops, i.e. cotton, coffee, cocoa. Increased emphasis on research to provide practical solutions to the problems faced by food producers is needed. However, there is inadequate communication between farmers and extension agents, and these agents do not always inform researchers of the problems faced by farmers. Consequently, research often does not produce information useful to farmers and when it does, there is no quick mechanism for getting the results to extension agents and then into the hands of farmers. However, any GURC efforts to address the problems of research and extension will be constrained by the manpower deficits discussed above. This project speaks to that problem.

#### B. Current Status of the University Center at Dschang (U.C.D.)

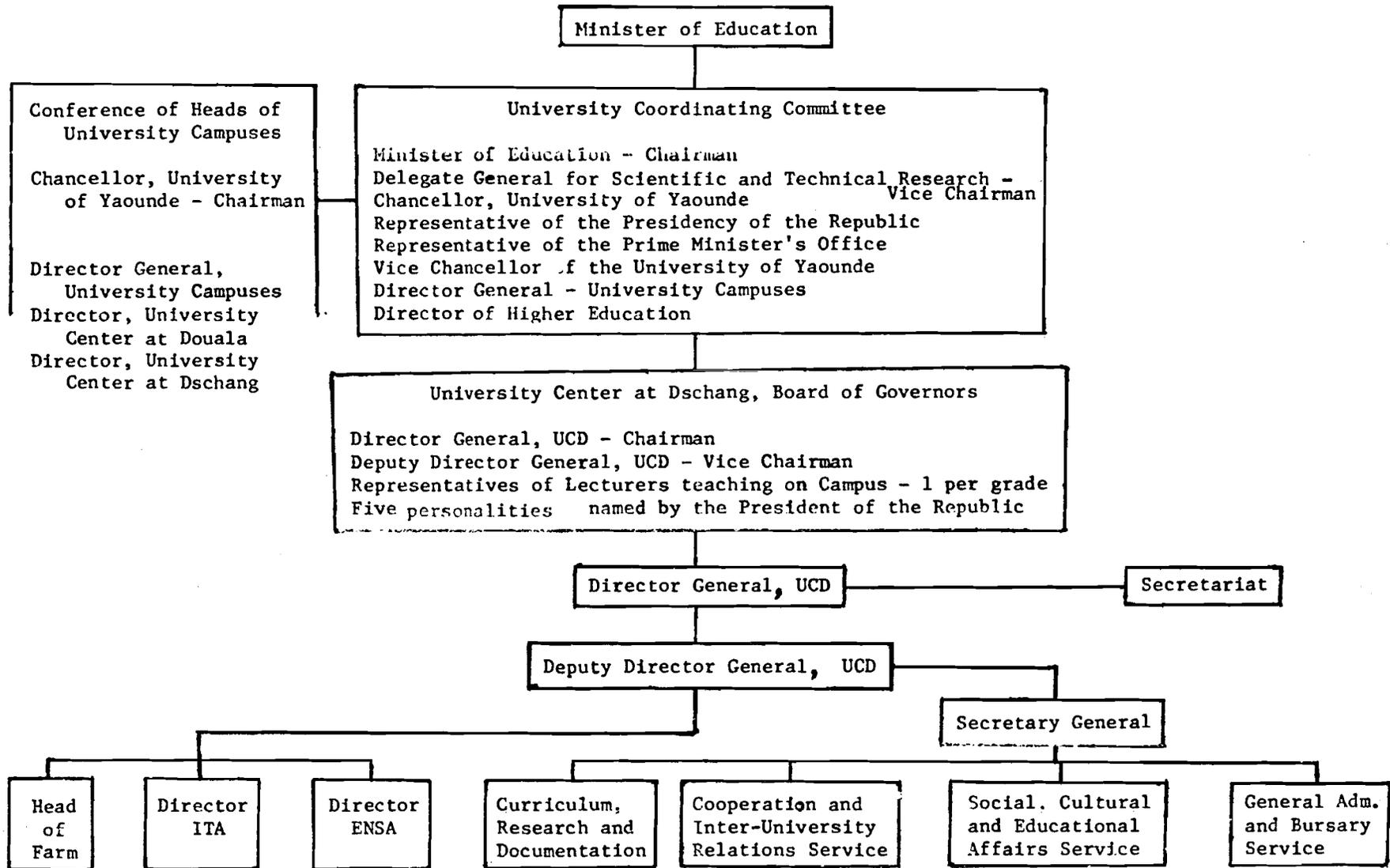
The University Center at Dschang (UCD), authorized by GURC Decree in 1977, consists of two university-level institutions: the Institut des Techniques Agricoles (ITA) (Institute of Agricultural Techniques) which consists of a three-year program to train Ingénieur des Travaux (IT), and the

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1/ See Cameroon CDSS, 1982.

2/ Cornell Agriculture Manpower Needs Assessment, op. cit.

CHART 2.1  
ORGANIZATION OF UCD



Ecole Nationale Supérieure Agronomique (ENSA) (National School for Agronomy) which consists of a five-year program to train Ingénieurs Agronomes (IA).

The program to train Ingénieur des Travaux (IT) is now operating at the UCD. This program was created in 1977 and placed under the UCD in the same year. All graduates are placed in the civil service in such positions as farm/plantation managers, divisional advisors and researchers. The IT degree is roughly similar to three years of undergraduate training in the U.S.

The Ingénieur Agronome (IA) program of the Ecole Nationale Supérieure Agronome (ENSA), which began in 1960, became part of the UCD in 1978. It has not yet physically moved to Dschang, but is located in Nkolbisson (about eight kilometers from Yaounde and 425 kilometers from Dschang). This five-year program is roughly equivalent to a B.S. degree plus one year of graduate study in the U.S. Ingénieurs Agronomes are placed in the highest entry-level of the civil service as managers, planners and researchers.

The University Center at Dschang (UCD), is situated on 190 hectares on the outskirts of Dschang in the Western Province. Four buildings were completed in 1977: a large teaching block, a warehouse/garage/equipment block, a dormitory for 160 students, and a block for faculty housing. Six additional buildings under construction (four teaching/laboratory blocks, one cafeteria and one dormitory), funded by the World Bank, are expected to be completed in October, 1981.

In addition to the 190 hectare main campus, the UCD has two large tracts of land nearby. At Bansoa, approximately 30 kilometers from Dschang, a 300 hectare production and demonstration farm has been created. Although approximately 50 hectares have been put under cultivation, there are no physical facilities except one shed. Also, a program for the development of the farm has yet to be developed. There is a 130 hectare tract in Djoutittsa, about 18 kilometers from the Dschang campus, that is intended for use as an animal research unit.

#### 1. Administration of the UCD

The chief administrative officer of the University Center at Dschang is the Director General. He is responsible to a Board of Governors and serves as the Board's presiding officer. The Secretary General assists the Director General with administrative duties, i.e. monitoring and planning programs, and supervising procurement. The Directorate General of the University comprises a secretariate of the Director General and four services, each under authority of a service head.

ENSA and ITA are administered by their own directorates who report to the Director General of the University Center. There has been a great deal of interchange of faculty, with some professors teaching at both institutions. This is less than ideal, as geographic separation of ENSA and ITA and travel difficulties contribute to existing problems in course scheduling and offerings. For example, because shared teachers are often present on one campus for only short periods of time, courses are sometimes taught out of sequence or are taught intensively over a short period rather than spread

out over a semester. This type of scheduling makes learning more difficult, as there is not enough time for students to absorb materials or reinforce what is learned through laboratory exercises, field practice or drill.

Many of the present courses in the Ingénieur des Travaux program of the ITA are duplicates of courses in the Ingénieur Agronome program of the ENSA. There is also a duplication of administrative services such as maintenance, accounting, registration and scheduling. This duplication is necessary as long as the two campuses remain separated. However, once the two schools are brought together on one campus in Dschang, this duplication of services can be eliminated.

The Director General of the UCD has begun laying the groundwork for the eventual consolidation of the two programs. In the planning for the UCD, extreme care is being taken to avoid unnecessary duplication of facilities and to integrate new construction, i.e. laboratories, libraries, and departments, at the UCD. The beginning of a new administrative structure has been formulated.

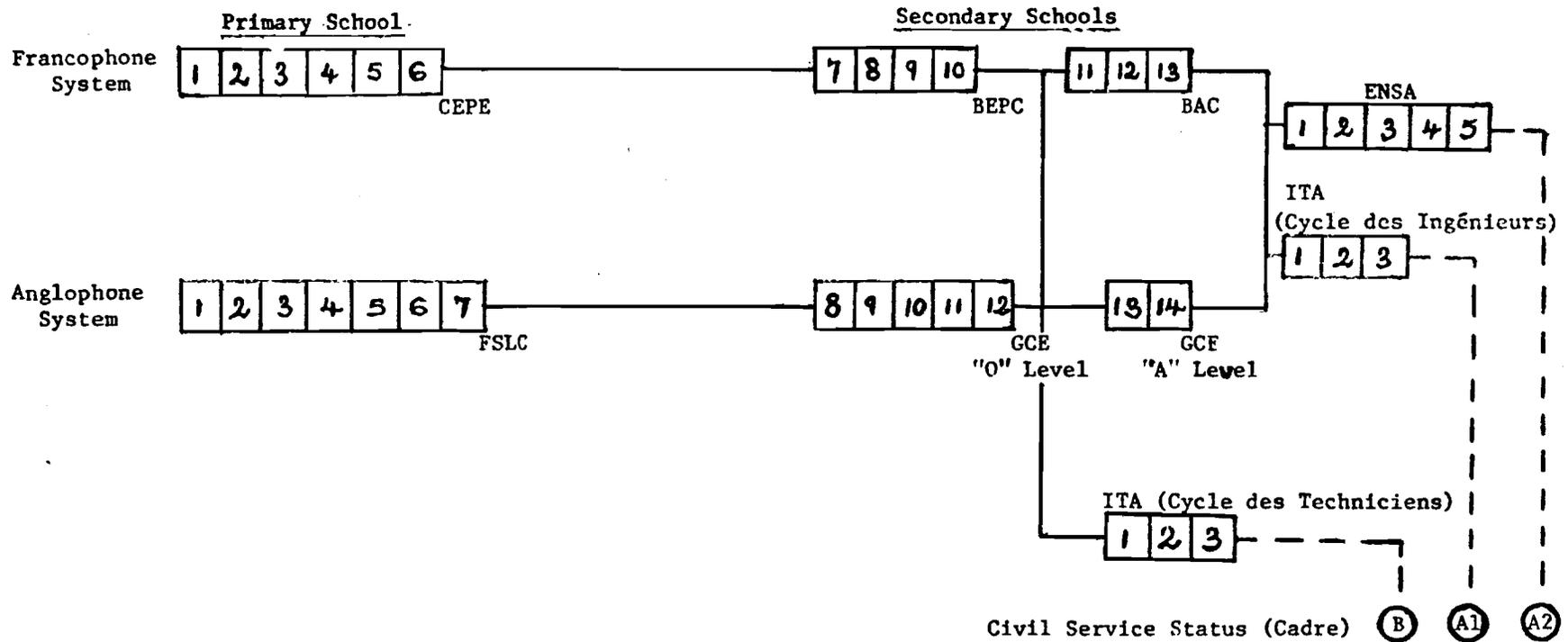
Currently, the University Center exhibits some cumbersome administrative characteristics. For example, decision making on routine matters tends to be centralized in the hands of the Director General and the Directors of ITA and ENSA. As a first step to counter this tendency, the Director General has delegated responsibility to the Secretary General and to the Chiefs of Service to deal with routine matters. This delegation will be further widened to allow the Directors General and other high-level administrators to have sufficient time to devote to policy and planning questions. Such delegations will also allow subordinate officers an opportunity to develop their administrative skills.

## 2. Instructional Program and Student Flows

Entrance into the IT and IA program is very competitive. In 1979, of the 2000 applicants qualified for entrance, only the top 50 were selected for the five-year Ingénieur Agronome program at ENSA and the next 100 for the three-year Ingénieur des Travaux program at ITA. This represents the top 7.5% of an already selective population of secondary school graduates. That there is little difference in the general intellectual capacity of these two groups has been confirmed by the experience of the UCD teachers. However, in the early years of the two programs, it becomes apparent that, because of differences in degree of motivation or in aptitudes other than general intelligence, some students are better suited to one program rather than the other. Once students are selected, there are no effective provisions for transfer between programs. Consequently, those with the most aptitude may not have a chance to earn the higher degree. Furthermore, the current system which places students irrevocably in either the Ingénieur Agronome or Ingénieur des Travaux program does not provide any competition between students once selected. The new curriculum will be common for both programs for the first three years. A decision will be made on the basis of performance whether to

CHART 2.2

Relationship Between the Primary and Secondary School Systems  
and Agricultural Education Institutions in Cameroon



Source: Ministry of Education, 1979

finish after three years and receive an IT diploma, or continue for two more and receive the IA certificate.

Currently, students are given scholarships followed by guaranteed jobs upon graduation. Less than 5% of entering students fail to graduate. This can lead to a complacent attitude on the part of some students who might not give their best efforts. On the other hand, the extremely difficult and rigid selection process may weed out those who are not the most highly motivated in the first place.

### 3. Faculty and Staff

Currently there is a total of 44 Cameroonian and 11 expatriate faculty and staff at UCD (ENSA plus ITA) who teach more than 250 separate subjects. These include all administrative personnel who do some teaching. Approximately 80 part-time teachers, recruited from the outside, also teach at the two campuses. For a faculty to teach the consolidated curriculum that is planned for UCD, supervise field studies, and spend a reasonable amount of time (25%) on research and outreach activities, about 115 administrative staff and faculty members are needed. This leaves a shortfall of 71 positions (See technical paper on Curriculum, Annex H.16 for details on how this approximate figure was arrived at). The inadequate number of teachers compounds the problems discussed earlier that are created by housing separate campuses. In addition, because of the limited number of faculty, many are teaching out of their fields. This lack of sufficient staff leads to the misuse of part-time instructors.

While the staff is academically qualified to teach at the university - over 90% of the full-time staff have Masters degrees - they often do not have the necessary pedagogical skills. Most lack work experience in agriculture. Consequently, they have no orientation to practical, problem-solving approaches to agricultural problems, teach by the lecture method, and rely upon rote memorization by students. Independent study and use of library facilities are not encouraged. Teachers, for the most part, do not know how to define their teaching objectives or how to evaluate student achievement. In fairness to those who do strive to make their teaching meaningful and practical, the present paucity of library resources, audio-visual aids, and laboratories makes effective teaching a very elusive goal indeed. The result is often a student who is a passive learner and does not acquire the skills and attitude needed to critically examine problems and to formulate practical pragmatic solutions. The ultimate result is that the graduates of IT and IA programs, who will direct the agricultural sector in Cameroon, lack the preparation needed to enable them to solve the critical problems of increasing agricultural productivity. This situation is not, of course, limited to UCD, but to any institution which is understaffed, undertrained and undersupplied.

### 4. Curriculum

The course titles listed in the UCD catalogue from the ITA and IA programs appear to be academically adequate. The actual course content and

teaching methods, however, reflect the major deficiencies discussed earlier. Also, many course outlines are out of date and often do not contain material relevant to the agricultural situation in Cameroon. The integration of student course work with practical and on-farm experience is essential. This enables students to develop the ability to use what they learn to solve actual field problems. Student farm work is presently in the form of manual labor rather than a learning experience related to classroom work. The 25 hectares of land for student plots at Nkolbisson are not used consistently or effectively, and the student plots at Dschang have not yet been developed, though land has been set aside for the purpose.

The IT and IA programs presently use off-campus work periods (stages) to ensure that students get practical agricultural experience. Each year students spend the major part of their working on farms, in villages, on plantations, or in provincial offices. This work experience, and the resultant report students must produce, becomes more demanding in each succeeding year, culminating in a six-month field study for the fifth-year IA student in his/her chosen specialty.

While the potential of this system is excellent, it is often not effective in practice. Planning, supervision, and collaboration between UCD and field supervisors or others with whom students must work are often inadequate. Staff time and resources are not sufficient to plan programs with field supervisors, nor to monitor and evaluate students' work. The consequence is that, too often, they do not get the practical, problem-solving experience they need to be effective agricultural planners, researchers and managers.

Rooms have been designated as libraries at both Dschang and Nkolbisson. The ENSA library has 2,000 books and periodicals. The ITA library has approximately 500 volumes. Neither has a trained librarian, a functioning circulation system, an acquisition program nor proper cataloguing. More important, neither staff nor students have the training to make use of the library to supplement classroom instruction and to encourage independent study.

To provide a balance between theory and practice, agricultural courses generally require about two hours of laboratory work for every hour of classroom lecture and discussion. This not only reinforces what is learned in class, but enables students to develop their analytical and problem-solving skills. Currently, laboratory work hardly exists because there is only one working laboratory at ENSA and one at ITA.

Some courses are up-to-date and attempt to relate to Cameroonian agricultural situations. The Department of Agricultural Economics was created with the assistance of Southern University, through an AID project that began in 1970. Three of the staff in this department were trained by this project. In many cases, however, courses are modeled upon courses the instructor may have taken outside of Cameroon. Consequently, students often get information that is out-of-date or irrelevant. They do not develop habits for independent reading and research.

The Ministry of Agriculture administers a group of technical agricultural secondary schools which trains agricultural technicians and technical field agents. Graduates fill extension posts at the village level and comprise the main body of agricultural personnel who have contact with farmers. There are 11 such schools with a total of 72 teachers. The Department of Rural Education at the UCD has been charged with the responsibility for developing in-service workshops in teacher training and curriculum development for faculty now teaching in these schools. However, the Rural Education Department has no permanent faculty and cannot, at present, carry out its mandate. The University Center also needs a strong Rural Education Department to deal directly with farmers and to prepare those IT and IA graduates who will themselves teach.

The need for university level trained manpower in the field of Aménagements et Equipements Ruraux (Rural Technology) is presently not being filled.<sup>1/</sup> Management and research positions must be filled in many areas which require training in the development and use of appropriate technology, water control, alternative energy sources, crop storage, marketing, and land use. Cameroon currently has no source for these trained people, except from overseas.

#### 5. Facilities

The present IT program at UCD is housed in facilities shared with a post-primary terminal agricultural training program. By September 1981, the IBRD should complete construction of adequate teaching facilities for the ITA students. However, this construction does not include a library or a sufficient dormitory or cafeteria space for students currently in the IT program. Furthermore, there are no facilities at Dschang to accommodate the students, presently in the IA program at Nkolbisson, who will move to Dschang.

The present facilities at Dschang and Nkolbisson are not adequately maintained. The maintenance budget for UCD averages well under the 5% of operating expenses considered minimal. In some years, there has been no budget for building and equipment maintenance, and there is no maintenance plan. Some facilities at Nkolbisson, which are less than 15 years old, have already fallen into such disrepair that they are almost unusable.

<sup>1/</sup> Trained personnel are needed in such institutions as: CENEEMA (National Center for Studies and Experimentation in Agricultural Machinery); agro-industrial projects such as: CDC (Cameroon Development Corporation) and West Corn; irrigation projects such as SEMRY and SODORIM; Offices of Community Development and Rural Engineering.

## 6. Research and Extension

Research should serve two important functions at the University Center:

1. Generate useful knowledge related to the problems of food production in Cameroon and particularly to those of the small farmer.
2. Contribute to the instructional programs by enabling faculty members to maintain and develop their research skills and knowledge to pass on to students.

Currently, there are few research projects at the UCD. In 1979, for example, only seven short research projects were completed by the UCD staff. Those projects that do exist were initiated and funded by other organizations, primarily parastatal organizations, in the export crop sector. Therefore, there is virtually no research geared to the food crop production problems of the small farmer.

There is a paucity of faculty research because of the absence of lab facilities, a research budget for equipment and materials, and faculty time due to heavy teaching loads.

The result is that the university does not make a significant contribution to solving problems in food production. Further, the nation's future agricultural researchers are not getting the skills they will need.

## 7. Linkages With User Institutions

The UCD provides manpower and services for three public sector institutions: the Ministry of Agriculture, the Ministry of Livestock, and the General Delegation for Scientific and Technical Research (DGRST). The university is charged with providing these with mid and high-level planners, researchers, managers, and a research and support program. To succeed, the university needs continual feedback from the institutions it services concerning the effectiveness of its curriculum and research program. Currently, formal communication links between the University Center and its user agencies are through three policy and coordinating committees. They are:

- (1) The National Committee for Agricultural and Veterinary Training which defines policy for all agricultural and veterinary training institutions.
- (2) The Council for Higher Education and Scientific and Technical Research which coordinates the University's scientific and technical research with other government agencies.

- (3) The University Coordinating Council or committee which examines the problems of all the university centers and their coordination.

These committees include representatives from all the user agencies and effectively ensure that the university's overall curriculum and research program is consistent with the goals and priorities of the government and its field agencies. This system does not, however, provide for the day-to-day communication necessary to be sure that the details of the curriculum and the research projects are appropriate. Presently, there is no involvement of the Ministries of Agriculture and Livestock or DGRST in developing and evaluating courses, and only limited involvement in the research program. The result is that while the overall university program is consistent with government policies and priorities, it is not necessarily effective in providing its students with the specific skills they will need to work in the agricultural sector.

### C. Detailed Project Description

#### 1. Program Goal:

To increase overall agriculture production by increasing farmer productivity. There are many constraints to increasing farmer productivity in Cameroon. Among them are: shortages of production inputs, lack of market incentives, poor transportation facilities, low-level technology, and lack of knowledge and skills on the part of the farmer. Some of these problems can be overcome only through the work of effective agricultural service organizations working with and for farmers. USAID's program strategy is to assist the GURC to improve the effectiveness and efficiency of a wide range of these agricultural support institutions.

#### 2. Project Purpose:

To assist the GURC to create an agricultural university capable of training managers, researchers, planners, and teachers who can effectively staff the agricultural support institutions of Cameroon. The purpose will be achieved when the University Center at Dschang (UCD) graduates sufficient numbers of Cameroonian professionals in fields necessary to meet the country's needs for trained manpower in agriculture. Their practical and theoretical training will meet the needs of the agricultural institutions of Cameroon. The UCD will also have the capability to participate, along with other agricultural research organizations, in the development and testing of agricultural inputs and practices necessary to increase agricultural productivity.

The technical packages to which the UCD contributes will be directed to a wide range of crops and farming conditions. They will be designed to address needs identified through the outreach program of the UCD.

The project strategy is to assist the UCD to build the various elements needed to constitute an effective and efficient agricultural university, and to develop and institute the administrative management systems

necessary to insure its continued operation. The UCD is in a very early stage of development. Over the next six years, the outputs of this project and the contributions of other donors will be forged into a functioning agriculture university. Technical assistance personnel, under the direction and guidance of the Director General of the UCD, will assist in the generation of outputs and the task of getting the UCD to a fully operational state.

### 3. Project Outputs:

#### Output No. 1: A Revised Academic and Administrative University Structure

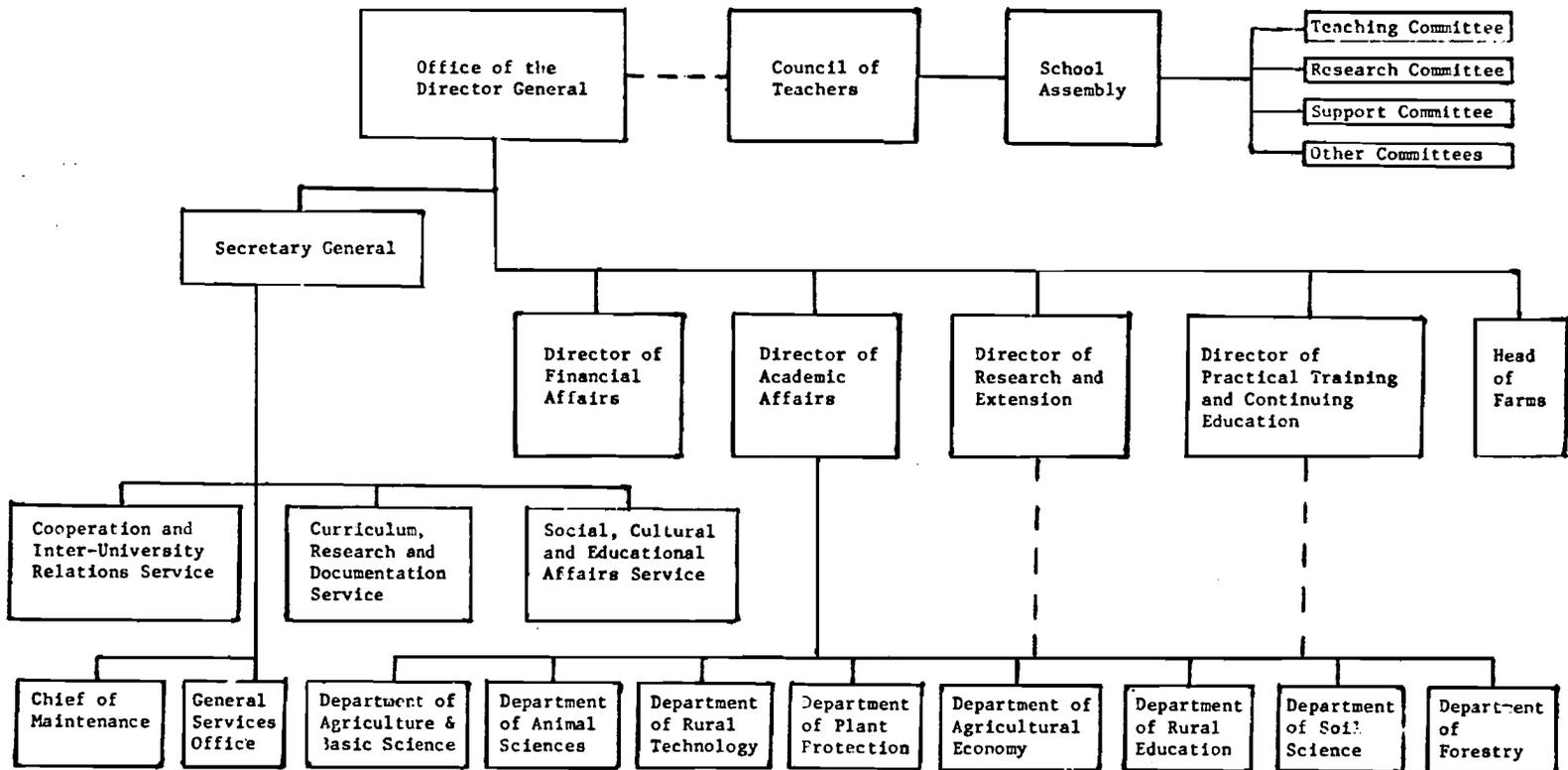
The UCD will be strengthened by developing new institutional structures. The three main elements of these will be:

- Reorganized administrative and management organization, procedures and staff. A general organizational structure has been approved for the UCD (see Chart No. 2.3). With the assistance of the U.S. technical assistance team, the UCD will make this structure fully functional by producing detailed job descriptions and manuals that describe its operational procedures. Long-term, short-term, and on-the-job training will be provided, as well as expert assistance in the installation of the new system. This will include such areas as general university administration, financial management, maintenance, purchasing, property management, personnel, housing and student services, and transportation.

The U.S. technical assistance team will assist the UCD staff to formulate a detailed organizational and staffing plan. Responsibilities of various units will be detailed, and working relations among units will be established. On-the-job training can begin while the systems are being installed. Throughout, the work of the UCD staff and TA team will be coordinated by the already established UCD governance committees. Work on this output can begin during the first year of the project.

- Revised academic scheduling procedures. Procedures for the scheduling of the academic program will be improved. These will ensure the optimal use of physical facilities and faculty time: i.e. scheduling of courses by academic year, faculty assignments, student schedules, and classroom and laboratory utilization. Assistance will be provided to strengthen the Registrar/scheduling function.

CHART 2.3  
REORGANIZED UCD



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A records system will be established that may be as simple as a manually keyed card file or as sophisticated as a mini-computer to be installed in the statistics laboratory. The specific system will be selected by the UCD with the assistance of the technical assistance team.

- Mechanisms for improved communication, cross-fertilization and cooperative action within the UCD. A system of joint committees and working groups will be established to ensure the optimal participation of the staff in decision-making and shared responsibility for governance and operation of the UCD.

The U.S. university administration specialist, along with other team members, will help faculty and administration to understand the advantages of cross-fertilization of ideas in a university. This will be done through regular interdepartmental workshops and seminars of permanent faculty-administration working groups which will meet regularly to deal with such university-wide matters as faculty appointments, tenure, course offerings, awards and scholarships, research and extension.

Output No. 2: Revised Curriculum for Ingénieur des Travaux (IT) and Ingénieur Agronome (IA) tracks

An expanded and improved curriculum will be developed for training ITs and IAs at UCD. However, improvements will be made so that the revised curriculum will:

- Contain a core of courses during the first three years that will be common to both the IT and IA programs.
- Use a variety of instructional techniques and materials to supplement the lecture method.
- Place more emphasis on use of libraries, audio-visual and statistical services, and workshops.
- Be expanded to include a new department of Rural Technology, additional courses in existing departments, and fully develop existing programs now offered only on a limited basis.
- Consolidate several small courses into fewer larger courses.
- Place more emphasis on practical, field-oriented content to include practical field exercises utilizing the school farms and individual practice plots.

- Integrate the off-campus internship program into the on-campus program. Quality of the supervisors of the students' field work will be improved.
- Incorporate problem-solving approaches into laboratory courses.
- More closely relate science, mathematics, and other basic general education subjects to the agricultural content of the curriculum.
- Include some training in administrative and management procedures and practices in the core curriculum and further training in this area in the last two years of the advanced program.

The UCD faculty, with the assistance of the U.S. technical assistance team, will produce:

- detailed curricula
- syllabi for each course
- audio-visual instructional materials
- laboratory manuals
- supplementary instructional materials, case studies, and textbooks where necessary.

The first step in curriculum upgrading will be to convene a series of working groups composed of UCD staff and representatives of organizations that will hire UCD graduates, i.e. Ministry of Agriculture and Institute for Agriculture Research. These will determine the areas of curriculum specialization needed to produce a graduate skilled in agricultural techniques and who is motivated to apply them in the field.

Work on specific courses will be done by small groups of two or three, with larger working groups serving a review function. Both long-term and more specialized short-term technical assistance will be provided by the U.S. team. Work on the curriculum will begin at the onset of the project, and the first year of the curriculum will be completed by the time the IT and IA programs are physically installed in Dschang (1984). A description of the academic departments is found in Annex H.16.

Output No. 3: Upgraded Faculty and Staff

UCD faculty and staff will be expanded and upgraded to staff the instructional program, conduct research, administer the UCD, and to provide support services. Training in the U.S. to the MA level will be provided for 55 faculty and staff and to the Ph.D. level for an additional three. This mix of training will provide one Ph.D. to head each department. Other donors will provide graduate training for at least 13 faculty members. By the end of the project, 75% of the part-time teachers will be replaced, faculty will devote at least 25% of its time to research and/or outreach and extension activities, and the number of classroom preparations per week will be reduced. Teaching methods appropriate to the practical nature of the curriculum will be used.

A six-year training plan for the UCD staff will be developed and formally agreed to by the UCD, USAID, and the U.S. technical assistance team. The plan will reflect the staffing needs of the new curriculum and the unified administration. The plan is to be completed by the 12th month of the project. However, because there will be immediate and obvious staffing needs, some training will begin at the outset of the project.

In-service training will be provided by senior UCD staff and the technical assistance team. By the end of the project, each staff member will have received an average of 6 months of in-service training in such areas as teaching and research methods and extension techniques. In all cases, U.S. and in-country training will be practical and oriented toward solving the problems of farmers.

Output No. 4: Interdisciplinary Research and Development Program

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

New position descriptions will reflect the fact that 25% of the time of each faculty member will be devoted to extension or research. Annual evaluations of faculty will take into consideration research and extension activities. The increase in staff described in Output No. 3 was determined to allow faculty time for these activities.

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

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

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

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

#### Output No. 5: Linkages Between The UCD and Its Client Agencies

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

Mechanisms will include an inter-agency committee for university oversight, seminars, workshops and conferences involving UCD faculty and agricultural support institution personnel, field site visits by UCD faculty and students, new off-campus centers for student and faculty use at the research stations at Ekona and Wakwa, and closer involvement of client institutions in planning and supervision of UCD student field experiences (see Chart 2.4).

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

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

#### Output No. 6: Demonstration Farms

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

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

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

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

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

#### Output No. 7: New Facilities

The USAID loan component of the project will finance the building and equipment costs of approximately \$25 million of the total building program of \$48 million (not including inflation factor). The loan component will finance:

- 1 General teaching block (3 lecture rooms, 6 seminar rooms, lecture hall/gymnasium, projection room, 2 service rooms, and necessary equipment and furnishings).
- Library (capacity for 600 students and 50,000 volumes. Includes stacks, reading rooms, work areas, office circulation area, and carrels area).

- Media Center (includes offset room and lab, assembly room, art room, film and plate room, self-tutorial room, repair and supply rooms).
- Dormitory (400 beds).
- Cafeteria and commons room (350 seats, kitchen, serving area, office, storage and cold storage areas).
- Infirmary (space for 15 beds, nurses office, store room, dressing rooms).
- Agricultural Economics teaching block (includes 5 laboratory/classrooms, 5 offices, storeroom, and necessary equipment).
- Rural Technology teaching block (includes 4 laboratories, 5 offices, a storeroom, and necessary equipment).
- Agronomy and Basic Science laboratories (includes 8 laboratories and six offices).
- Rural Education (includes 3 laboratories/classrooms and 5 offices).
- Dschang farm (general site work and sewerage disposal system).
- Djoutittsa farm (includes dipping tank, corral, 1 three-bedroom house, 1 cluster of five working houses).
- Bansa farm (includes 1 three-bedroom house, 10 five-house clusters for farm workers, water well, pump and tower, storage shed, utility expansion, office repair shop).
- Wakwa and Ekona off-campus centers (includes at each site: dormitory for 30 students, 2 private rooms for teachers, kitchen and dining area).
- Site work at UCD (roads, walks, etc.).

The World Bank contribution to the construction of the UCD calls for the following:

- 1 Teaching Block.
- 1 Cafeteria (300 students).
- 3 Dormitories (180 students).
- 3 Off-campus centers (dormitories and classroom facilities for 30-50 students at locations in Bambili, Ebolowa and Maroua).

The Belgian contribution to facility construction consists of the following:

- 1 Administrative block (3 large offices, 10 small offices, 10 large conference rooms).
- Utility expansion (water and electricity).
- Sports Facilities.
- Land.

Output No. 8: Maintenance and Motor Pool Units

A Superintendent of Maintenance position will be established and additional maintenance staff hired and trained. An inventory control system will be developed for both the maintenance and transportation units. The motor pool will share the facilities of the agricultural mechanics shops for vehicle maintenance and repair. The technical assistance team will provide short-term training and assistance in establishing the maintenance system. The project grant will provide 50% of the maintenance budget during the first year buildings are occupied, 25% during the second, 10% during the third, and none the fourth. The requirement for adequate GURC maintenance budgets will be a covenant to the project agreement.

4. Project Inputs

a. USAID Grant

Technical Assistance: \$6,432,000

35.35 years of long-term technical assistance  
based in Cameroon: ... .. \$5,098,000

PERSON YEARS

- Team Leader	5.6
- University Administration Specialist	3.5
- Research and Extension Specialist	5.0
- Agricultural Curriculum Specialist	3.0
- Basic Science Curriculum Specialist	2.5
- Rural Education Curriculum Specialist	3.5
- Rural Technology Specialist	3.0
- Librarian	2.75
- Administrative Support	3.50
- Agriculture Econ. Specialist	3.0

21.5 years of local support personnel as  
follows: ... .. \$ 129,000

- Project Administrative Assistance (at Dschang)	5.75
- Chauffeurs (2)	10.0
- Project Secretary at Dschang	5.75

48 months of short-term technical assistance  
in Cameroon as follows: ... .. \$ 500,000

- Facilities Planning 2 PM
- Maintenance 6 PM
- Evaluation 10 PM
- Administration 3 PM
- Research/Extension 4 PM
- Curriculum Development 9 PM
- Agricultural Curriculum Development 6 PM
- Rural Technology 2 PM
- Audio-Visual 3 PM
- Rural Education 3 PM

(Position descriptions are found in Annex H.10).

Four years of long-term technical assistance  
based in the United States as follows: ... \$ 153,000

- Project Coordinator 3.0
- Bibliographic Searcher 1.0

Commodities for Technicians ... .. \$ 552,000

- 10 vehicles \$180,000
- Furniture, appliances, and office supplies \$258,000
- Books, periodicals, and equipment \$ 25,000
- POL for Technicians \$ 89,000

Training: \$3,971,000

1,630 person-months of training in Cameroon as  
follows: ... .. \$ 400,000

- 18 months for UCD staff 1,350 PM
- 3 months for agricultural college 130 PM
- Ministry officials 150 PM

Long-Term Training (150 person/years) \$3,233,000  
Short-Term U.S. Training (42 person/mths) \$ 289,000  
6 Maintenance \$ 49,000

Operational POL for Motor Pool: \$73,000

Maintenance Grant: \$350,000

Contingency and Inflation: \$5,844,000

Total AID Grant: . ... .. \$16,670,000

b. USAID Loan

Commodities ... .. \$2,755,000

- Vehicles/Spare Parts/Tools
- Printing Equipment
- Office, Classroom, Laboratory, and  
Dormitory Equipment/Furnishings
- Library Materials/Supplies/Equipment/  
Furnishings/Books/Periodicals
- Department of Rural Technology  
Equipment
- Department of Agriculture/Basic  
Sciences Equipment
- Department of Rural Education  
Equipment/Supplies
- Research and Experimental Farm  
Equipment/Livestock

Construction ... .. \$13,013,000

- ENSA Teaching Block
- ENSA Library
- ENSA Mass Media
- Agricultural Economics
- Rural Education
- Rural Technology
- farms (Dechang, Bansoa, Djoutittsa)
- ENSA Basic Sciences Laboratory
- Utility Expansion (Pump, Tower Lines)
- Roads (1.5 miles) and Parking
- Walks (2 miles)

Contingency and Inflation ... .. \$10,583,000

Total AID Loan ... .. \$26,351,000

c. GURC Contribution

The GURC contribution over the life of the project is estimated at \$74,878,000. The breakdown is as follows:

Training

- Airfares for Participants \$ 236,000

Support of U.S. Advisors

- Office Space/Supplies	\$ 203,000
<u>In-Country Freight</u>	\$ 253,000
<u>Personnel</u>	\$12,682,000
<u>Support to Other Donor Activities</u>	\$6,795,000
<u>Land</u>	\$ 600,000

This includes 215 hectares at the Dschang campus, over 200 hectares in farmlands at Bansoa, and 130 hectares at Djoutitusa.

Construction .. ... .. \$13,340,000

The GURC will finance the costs of building construction for the following:

- Utility Expansion (Electricity, Water pump)
- Campus Roads and Walkways
- Road Improvement
- Administrative Block
- Sports Facilities
- Telephone System
- Staff Housing
- Guest House
- Sewage System

Operational Costs ... .. \$19,834,000

Life-of-Project Recurring Costs ... .. \$19,834,000

Inflation ... .. \$20,935,000

d. Other Donor

The IBRD Contribution

The IBRD has given three loans to the GURC for education projects. The Third Education Project Loan, signed in July 1976 for \$17 million, allocates 7 million for the establishment of the ITA at Dschang and the three off-campus training centers.

IBRD will finance the construction, furniture, and equipment for administrative, academic, and dormitory buildings to be constructed on the campus at Dschang. This construction and equipment is for the IT program of the UCD.

The IBRD technical assistance provides 6 teacher/curriculum developers for ITA and 4 other specialists at the Ministry of Agriculture. These latter specialists are in the areas of agricultural education planning, teaching materials for agricultural education and extension, and rural sociology.

The cost breakdown is:

Technical	\$1,200,000
Construction	3,650,000
Material	2,000,000
Furniture	150,000

The Belgian Contribution

Belgium will provide assistance to the University at Dschang for the Departments of Plant Protection, Soil Science and Animal Science. The assistance to these departments will consist of:

- 1) Building construction for the three departments at the UCD (offices and laboratories - approximately \$2.6 million);
- 2) Scientific equipment (approximately \$.4 million);
- 3) A contribution to the cost of management of the departments for a five-year period (approximately \$.05 million);
- 4) Nine full-time members to guide in teaching workshops, research and other activities that Cameroon personnel are still unable to fulfill (45 person-years \$4.4 million);
- 5) Ten scholarships for study and internship in Belgium for training and upgrading of Cameroonian personnel from the departments (approximately \$.7 million), 42 months in-service training is also included.

Total contribution to the Department of Plant Protection ... .. \$2,700,000

Total contribution to the Department of Animal Science ... .. \$3,000,000

Total contribution to the Soil Science Department  
\$2,400,000

Total Belgian Assistance ... .. \$8,100,000

(This is a constant dollar amount).

The French Contribution

France provides assistance to the Department of Forestry through the services of seven technical specialists, a yearly equipment and operational allowance (approximately \$90,000), and short visits of up to 3 French professors per year to the Forestry Department. This assistance is of indefinite length but based upon yearly agreements. The UCD also has an agreement with the University of Nancy, France, in which short-term teacher exchanges are provided. The UCD receives a yearly grant for research and library materials of approximately \$60,000 per year. The French assistance package may be categorized as follows:

Technical Assistance	\$2,450,000
Supplies, equipment	180,000
Operating expenses	<u>90,000</u>
Total French Assistance	\$2,720,000

Summary of Contributions (millions of dollars)

IBRD	7.0
Belgium	8.1
France	2.7
USAID	43.0
GURC	74.9
Total	<u>135.7</u>

e. Relationships Among Donors

The development of this project has been marked by cooperation among donors. The construction and commodity procurement elements have been carefully designed to avoid duplication. Technical assistance is also complementary. The Belgian assistance to the three departments and the IBRD technical assistance to the IT program is supplementary to our own assistance. Close cooperation is also planned with the four specialists at the Ministry of Agriculture in the development of curricula, materials, and methodologies for agricultural teachers.

5. Other Related Activities

The UCD desire to maintain close ties with the agriculture sector and its wish to provide its students with on-the-job training will require that this project have a close working relationship with many activities in the agriculture sector, and a very direct relationship with AID-funded projects.

The National Cereals Research and Extension Project is AID-financed, and is to develop Cameroonian institutional capacity to provide high-quality research on corn, rice, millet, and sorghum and then establish linkages to facilitate transmission of research results to other agriculture agencies. Research on integrated cropping system approaches to food production problems of small farmers will be emphasized. Students from the UCD will be assigned to the National Cereals Research and Extension Project facilities for their field work. The students will be involved in ongoing research, on maize, rice, sorghum, millet, and cowpeas, at research stations and on participating farms. Students will also assist in identifying problems and determining the acceptability of recommendations made to resolve those problems. Additionally, the UCD will receive suggested research topics from the National Cereals Research and Extension Project personnel.

The AID-financed Agriculture Management and Planning Project is to develop an Agricultural Planning and Statistical Unit with the capability to plan, implement, monitor, and evaluate agricultural and rural development projects. Students from the UCD will be assigned to the Agricultural Planning Unit for their field work. They will gain practical experience in collecting data at the field level. They will also participate in data analysis for the purposes of program planning and project design and evaluation. Also, the Unit's staff will have an input to the schedule of research activities to be carried out by the UCD.

The purpose of the AID-financed North Cameroon Seed Multiplication Project - Phase II is to increase small farmer productivity by providing improved seed at affordable prices. Students from the UCD will participate in this project's seed testing laboratory, thereby becoming familiar with the methods of testing peanut, sorghum and corn seed. They will also participate in seed multiplication activities, thereby learning what factors are involved in producing and maintaining high quality seed. They will also participate in researching how well the farmers accept the new varieties and assist with on-farm demonstrations of how to use the new varieties.

#### 6. Relationship of the project to the C.D.S.S.

The highest priority in the CDSS for Cameroon is agriculture and rural development, with emphasis on increasing the efficiency of food crop production, increasing income, and extending basic services and facilities to rural populations. This priority is consistent with that of the CURC which has stated:

"The social and economic development of the country as a whole depends on the achievement made in the agricultural sector, which constitutes the core of economic activity."<sup>1/</sup>

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<sup>1/</sup> President Ahmadou Ahidjo's Speech, Bafoussam Congress, February 1980.

The CDSS describes the manpower situation in the agricultural sector as follows:

"The educational system has been skewed in favor of the humanities and law. As a result, the upper and middle-level manpower needed to staff Government services in agriculture, health, and education is inadequate. The Government would like to replace expatriate personnel staffing Cameroon public institutions. As much as 30-40 percent of managerial posts in many parastatals are held by expatriates. Expatriates hold a higher percentage of management jobs in the more important private firms. In the Ministry of Agriculture it is estimated that a minimum of 750 new high and mid-level Cameroonian managers will be needed in the next five years."<sup>1/</sup>

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<sup>1/</sup> FY 1982 Cameroon Country Development Strategy Statement, p. 20.

### Chapter 3

#### III. PROJECT ANALYSIS

##### A. Introduction

This project was developed in close collaboration with the GURC. For more than a year, weekly working sessions were held with USAID and Cameroonian officials from the Ministries of Education, Agriculture, the University Center at Dschang and the Delegation for Scientific and Technical Research (DGRST).

The technical feasibility studies were conducted by a team from the University of Florida which worked closely with Cameroonian counterparts.<sup>1/</sup> Included were specialists in curriculum development, research, extension, administration, university farms, library and information services, facilities planning, rural engineering and sociology. USAID contributed to project design with the assignment of personnel from the Offices of Human Resources, Agriculture and Rural Development, Project Development and Evaluation, Management, Program and the Controller. The services of REDSO were also used.

The methodologies used were site visits, studies of documents, and interviews with officials of the Ministries of Agriculture, Education, DGRST, parastatals, farmers and other donor agencies (IBRD, the governments of Belgium and France).

##### B. Technical Feasibility

The key question regarding this project's technical feasibility is whether or not the University Center at Dschang can evolve into a modern agricultural university producing graduates who can effectively staff the agricultural support institutions of Cameroon. To answer this question, the following feasibility issues were examined:

1. What evidence exists that the UCD will carry out its proposed development program?

###### a. Legal basis for reform

In the Decree of April 28, 1977, the University Center at Dschang was established as a decentralized center of specialized excellence in agriculture. The Decree states that "The purpose ... shall be to provide education, conduct research and carry out production-oriented programs for development."

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<sup>1/</sup> See Technical Annexes, H.1 - H.17.

b. Historical intent

In March, 1978, officials of the University of Yaounde and the Ministry of Education visited selected U.S. universities to determine the relevance of the U.S. land-grant concept to Cameroonian development. The consensus was that the utilitarian nature of U.S. agricultural education was a necessary ingredient for the success of the University Center at Dschang. This then led to the development of the PID in 1978.

c. Established project linkages among GURC agencies.

From the outset of the project, there has been consistent GURC participation in its design. The Vice-Minister of Agriculture and the Directors of IRA and IRZ (DGRST) have worked closely with the Ministry of Education and the University Center at Dschang. The result is a project design which has built-in links among these agencies, e.g. curriculum development, use of research facilities by UCD faculty and students.

d. Technical assistance as a stimulus to reform

The University of Florida was contracted to help design this project under the collaborative assistance method. This should make project implementation easier since the University of Florida understands how agricultural education works in Cameroon and where project pitfalls may lie.

Further, the International Food and Agriculture Department of the University of Florida is a good example of a U.S. land-grant institution where research and extension are traditionally linked. With a professional staff of more than 950 agricultural and educational specialists and experience in Latin America, Asia and Africa, the University of Florida has the resources and background required to assist in the development of the UCD.

Technical assistance will be supplemented by an extensive training program with approximately 50% of the UCD staff to receive U.S. training.

2. Is a reorganized and consolidated UCD feasible?

As a result of this project, the UCD will be reorganized with new departments created (Rural Technology), permanent faculty and staff established, and administrative and support services combined (maintenance and bursary). The ENSA and ITA program will merge, with the first three years of the course of studies a common core for all students.

The reason for this academic and administrative reorganization is to eliminate the artificial distinction between ITA and ENSA students during the first three years of study. All students require the same basic courses and practical orientation. Selection to continue beyond the ITA program into the ENSA program will be based on performance during the first three years.

The GURC has already taken the first step toward consolidation with the placement of the UCD in Dschang. Also, ENSA and ITA have already been put under the administration of the UCD which controls their budgets, personnel and curriculum. Steps have also been taken to consolidate the departmental structure, staff and administration of the UCD, i.e. staff members are used interchangeably for both ITA and ENSA. Total coordination must, however, await the construction of facilities at Dschang so that all facilities and students will be in the same location rather than 305 kilometers apart as they are now.

The University of Florida's technical assistance team will assist in the merging of ENSA and ITA by providing experts in university administration and curriculum development. Short-term training and technical assistance will also be available.

3. Can linkages be developed between the University Center at Dschang and agriculture-related ministries as well as with agriculture research and extension services?

Presently, there are such linkages at the policy level, i.e. the University Coordinating Committee which includes high-level representatives from all pertinent agencies. While an important first step, there is still only sporadic cooperation between the UCD and the field agents in research and extension.

The decree which established the UCD emphasizes its role in research. Three committees already exist which coordinate the University's teaching and research with the Ministries of Agriculture, Livestock, and with DGRST.

There will be number of specific project elements which will help the UCD to strengthen its ties to other Cameroonian institutions:

- 1) The experience and technical know-how of the University of Florida in curriculum which integrates teaching, research and extension activities.
- 2) Staff exchanges between the UCD and government agricultural research institutions, i.e. IRA and IRZ.
- 3) Seminars and short courses sponsored by the UCD for user ministries, i.e. farming systems, problems of women farmers, development of improved seed varieties.
- 4) Participation of user agencies in the development and evaluation of the UCD curriculum, i.e. Ministries of Agriculture, Livestock and DGRST.

- 5) Publication of a journal devoted to agricultural research sponsored by the UCD.
  - 6) Training facilities for UCD students to be constructed at the agricultural research station in Ekona (S.W. Province) and at the animal research station in Wakwa (Northern Province).
  - 7) The creation of a training coordinator position at UCD in order to assure close ties between the university and field agencies where UCD students will receive training.
4. Will the GURC have the required manpower for project implementation?

This is a twofold problem: (1) is there a large enough pool of qualified candidates for advanced training to fill the additional faculty and staff positions for the expanded UCD program and (2) is there sufficient manpower to enable the UCD to function during the life of the project when additional responsibilities will be placed upon it?

In answer to the first question, 58 Cameroonians will be sent for training in the U.S. during the first three years of the project. There are three sources for these candidates: (1) ENSA, which graduates 50 people per year, (2) the University of Yaounde's Faculties of Economics and Science, which graduate more than 300 per year and (3) professionals currently employed in agriculture, i.e. Ministries of Agriculture, Livestock and DGRST.

Earlier graduates of these institutions have been successful in their studies in the U.S., particularly those from ENSA which has the most competitive entrance standards in Cameroon. The departments of Economics and Science at the University of Yaounde have high entrance standards as well.

In order to ensure that candidates have the interest and aptitude for training in agriculture, they will be required to work at the UCD before they leave for training. At the same time, experienced people already working in extension and research will be selected for training and eventual absorption into the UCD faculty.

As to the second issue, most present UCD faculty already possess advanced degrees and will continue to work at the university. They will be upgraded through the program of in-service training which will be organized with the help of the University of Florida's technical assistance team. Except for short observational tours by present faculty and staff and Ph.D. training for three, all those to receive training abroad will be new UCD staff. Finally, U.S. members of the technical team will do limited teaching in order to give them first-hand experience in the institution as it undergoes its reform.

### C. Administrative Feasibility

#### 1. Introduction

This section assesses the administrative capability of those GURC agencies responsible for project implementation. In addition, the University of Florida and USAID/Yaounde will be examined to gauge their capabilities for project implementation.<sup>1/</sup>

#### 2. The University Center at Dschang (UCD)

##### a. Administrative Reorganization

The UCD has major responsibility for implementing this project. At present, the UCD administrative structure is not adequate to manage the expanded and reorganized UCD to be created under the project. For this reason, a specific set of outputs which relates to the administration of the new university has been developed (see Chapter 2).

The UCD will operate under its present administrative system until the middle of the third year of the project, when the first phase of construction is scheduled for completion. Then, the consolidated system combining both ENSA and ITA, completed during the first three years, will be put into effect.

During these first three years, however, there will be project demands made upon the UCD, i.e. hiring new staff and the nominating of up to 21 candidates each year for training. Candidates for this training will be recruited from the Ministries of Agriculture, Livestock, DGRST, ENSA and the University of Yaounde.

Perhaps the most delicate charge at the UCD will be the merging of ENSA and ITA into one administrative unit because it will result in an inevitable weakening of their autonomy. Also, there will have to be greater delegation of authority than exists now, as the size of the staff increases and commodities begin to arrive at the UCD.

Because of these anticipated problems, technical assistance will be provided in administration and organizational development (see Annex H.10, T.A. Plan). Short-term, in-service training in management and maintenance are planned for UCD administrators under the guidance of the university administration expert of the University of Florida.

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<sup>1/</sup> A detailed description of the project's administrative plan is found in Chapter 5 and a description of the UCD's administrative system is found in Annex H.4.

b. Provision of Housing and Offices at Dschang

Approximately ten full-time U.S. specialists and occasional short-term consultants will be at the UCD by the end of the third year of the project. Adequate housing should be available at that time because there is an active housing construction industry in the area and builders have already been contacted to advise them of the increased demand for housing. Also, the Centre Climatique, a government-run tourist center at Dschang, has accommodations for 100. Until the additional campus construction is completed, U.S. resident advisors will share the offices of their counterparts at the UCD.

3. The Presidency and the Ministry of Equipment

These agencies will play key roles during the construction phase of the project. The Office of Contracts of the Presidency handles all construction contracts over \$500,000 and the Ministry of Equipment is responsible for supervising all A and E and construction work funded by the GURC.

The Office of Contracts has experience in the handling of large construction contracts, i.e. Transcam Railroad, Edea Dam. It follows procedures similar to AID's and can alter award criteria when necessary to meet additional requirements of the Project Agreement, e.g. limiting competition to U.S. or Cameroonian firms. The provision of an on-site construction inspector by the Ministry of Equipment required under this project, is the usual practice for this ministry.

Unbridled optimism, in so far as these GURC agencies are concerned, should be tempered with reality. The IBRD, for example, has been frustrated in its attempt to close out its Third Education loan, signed in 1974, because of the bureaucratic inefficiency of the Office of Contracts. There are, however, notable differences between USAID and IBRD. USAID has a large in-country management contingent to monitor its projects with a system of full-time project managers and a full-time engineer. Also, a GURC-funded A/E firm will draw up bid documents.

Although this project cannot change a generally unresponsive management system, it must guard its own interests. To this end, a number of safeguards are built into its design:

- 1) Offshore procurement of U.S. origin commodities will be the responsibility of the GURC, working through a procurement services agent.
- 2) A University of Florida procurement expert will work closely with the UCD.

#### 4. The Ministry of National Education

While the Ministry of National Education will have a minor role in the day-to-day operation of this project, it will have two major long-term responsibilities: (1) to provide the funds required for additional personnel and equipment, and (2) to approve the administrative and curriculum changes proposed for the UCD.

GURC-funded project construction has been put in the national investment budget for 1981.

The Ministry of National Education supports the changes in the UCD called for in the project and the committee structure to be used for approval of administrative and curriculum changes described in Chapter 2.

#### 5. University of Florida's and USAID/Yaounde's project implementation capabilities

The administrative plan for the implementation of the project is described in Chapter 5. Both the University of Florida and USAID/Yaounde have experience in procurement, project logistics and monitoring. There is a full-time USAID project manager who will work with the University of Florida team leader during implementation. The addition of a management specialist with a Cameroonian assistant to the U.S. team at Dschang and a project coordinator at the University of Florida will help with logistical support.

#### D. Social Soundness Analysis

As a result of the proposed changes in the program at the University Center at Dschang, well-trained agricultural scientists and managers will have the skills to administer extension programs, supervise personnel, re-train field-level workers and direct useful research. 1/

If change is too abruptly introduced because the new managers are insensitive to their surroundings, i.e. cultures and practices different from their own, or too rigid in applying "correct" procedures, resistance will no doubt be offered and the whole point of the project - increased farmer productivity - will be jeopardized. 2/

Because farmers have fairly ingrained attitudes and practices, they will not easily give them up without concrete evidence that new techniques produce more food and income with no greater risk. This means that the training program at the UCD must assure that graduates have both the theoretical and practical knowledge of why and how new practices should be adopted.

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1/A discussion on potential beneficiaries and benefits is presented in the Economic Analysis (Section E of the PI).

2/Please refer also to Annex H.6(Social Soundness Analysis) for a detailed discussion on regional variations/constraints on innovations and small holder interests in innovations.

To further complicate the problem of acceptance, the variety and complexity of the Cameroonian topography and that of its population require that the university produce graduates who understand these differences and adjust their skills and training accordingly. Some of the salient national and regional characteristics follow:

a) Cameroon is an agrarian society, both economically and socially. Eighty-seven percent of rural and forty-two percent of urban families are farmers. The independent small holder relies on family labor, uses minimal capital inputs, and depends on rainfall for water. The average farm size is 1.6 hectares which are allocated as follows: 61 are of cash crops, 42.5 are of cash and food crops interplanted, and 33 are of food crops. The Cameroonian farmer does use fertilizers and pesticides on cash crops, usually supplied through the cooperative or parastatal marketing the crop.

b) There are a large number of ethnic groups in Cameroon. The cultural and ecological differences are great, but it is possible to group people into three major groups that correspond roughly to three ecological zones: (1) the Western Highlands Grasslands zone, (2) The Northern Savannah-Sahelian zone, and (3) the Central and Eastern Forest zone. Cultural factors affect land holdings and tenure, division of labor, and receptivity to agricultural innovations. Generally, men are responsible for heavy work such as clearing land, producing cash crops, and organizing and running their marketing cooperatives. Women grow food crops and market any production surplus not needed by the family. The Cameroonian family is a production and consumption unit heavily involved in marketing.

c) The Bamileke people live in the Western Highlands where the UCD is located. They are a centralized group with numerous chiefdoms headed by a Fon (chief). The Fon apportions land to lineage and family heads. Land is scarce, averaging 1.2 hectares per family. The Bamileke are resourceful, energetic cultivators. The land is fertile and the social system allows adaptation. They are a good target for innovation.

Most extension work in the area has focused on cash crops using male extension agents. Food crops are almost totally produced by women who do not receive technical information from the extension service. Women are interested in receiving information, as are young men who lack coffee holdings, which tend to be held by older men. The area and people appear to be excellent to initiate UCD research and extension innovations; however, successes here may not be directly transferrable to other areas.

d) In the North, approximately twenty-five percent of the people are Fulani, who are farmers and cattle keepers, organized into 21 lamidats, each headed by a chief (Lamido). Fulani men prefer to hire labor when able. Women have kitchen gardens, but prefer trading and food processing to cultivating.

Among non-Fulani people, both men and women cultivate millet, maize, rice and groundnuts. Cotton is the primary cash crop.

All agricultural endeavors in the North are constrained by the short rainy season which places heavy demand on agricultural labor for a short season.

Extension workers and researchers in the North must take into account the traditional separation of sexes and the overwhelming need to speak the local language. Many families, particularly the non-Fulani, live close to the subsistence level and risk-taking must be minimized. People in the area are very concerned about food for their families.

e) In the Southern Forest zones people live in small lineage units without centralized chieftancies. Land is allocated to heads of lineages, and women are dependent on husbands or fathers for land on which to grow food crops. Women grow food crops and men cash crops such as cocoa and palm trees for oil. Again, in this area, women and young men are a good target audience for innovations.

It is against this background that a number of key questions pertinent to the issue of acceptance of diffusion of innovations in Cameroon are posed and analyzed .

1. How can the UCD ensure that its new extension techniques will meet minimum resistance from farmers and extension agents?
  - a. Adoption of revised curriculum at the UCD

The usual practice of many universities is to develop courses of study by consensus of departmental faculty. This often results in course work which is highly theoretical, somewhat autocratic, and sometimes unrelated to the needs of the community to be served. For some disciplines, i.e. philosophy or the pure sciences, there is nothing wrong with this approach. For an agricultural service university, there is a great deal wrong with it. When its graduates are assigned to field posts, for example, they often know less about what farmers require in the way of advice and assistance than do the lowest level extension workers they are supposed to supervise.

In order to avoid this problem, the new UCD curriculum will be developed only after field workers, e.g. extension agents, have been surveyed for their suggestions. IRA and IRZ agents will also participate, as will farmers themselves. The creation of a new Rural Technology department will deal with the adaptation of appropriate technology by farmers and the Rural Education department will be expanded.

b. Increased contact by UCD students with farmers and extension agents

Students will spend a significant period in field studies, i.e. the model extension program. This will give them a first-hand view of the problems and practices of farmers.

c. Practical research projects

The laboratory work to be required will stress experimentation in practical, rather than in theoretical, areas and should reflect the field experiences of the UCD students. Examples are garden plots and work on the experimental farms with animals and crops. Students will also be assigned to IRA and IRZ field stations as they are now, but more emphasis will be placed upon practical research as opposed to theoretical report writing.

2. Will UCD faculty and students accept the increased emphasis on research, extension, and a more practical curriculum?

The Cornell Report<sup>1/</sup> points to a continuing trend at ENSA toward a greater emphasis on practical experience. The report states: "It is clear that the trend has been toward a substantial decrease in the volume of course hours. The 5-year regime is the reverse of the 4-year regime since there has been a gradual decrease in the volume of course hours from the first year to the fifth. As a general pattern each change of regime has resulted in a substantial reduction of course hours for students. The two main objectives of this were to give students an opportunity to complement their course by personal study in the library and above all, to give a more practical character to the training of students."

"Another area of major change in the program content is the increased importance of social sciences in the curriculum; from less than 8% in the four-year program to more than 20% of the total courses' hours in the two and five-year program. As a result of this, the perspective (or the outlook) of ENSA graduates is no longer "purely" technical as in the past."

"An important feature of the ongoing program at ENSA is the great emphasis on the practical experience for students. Indeed, in addition to specific practical exercises related to various courses, the five-year program differs from the previous one by the number and the nature of stages (field experiences) included in the program."

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<sup>1/</sup> A study of the Development of the University Center for Agriculture at Dschang. September, 1979.

TABLE 3.1

Number and Percent of ENSA Students by Father's Occupation

<u>Father's Occupation</u>	<u>Number of Students</u>	<u>Percent</u>
Farmer	84	65
Police or Military	6	5
Merchant	5	4
Nurse or Doctor	5	4
Civil Servant	5	4
Tailor	4	3
Truck Driver	3	2
Chief of Village	3	2
Accountant	2	2
Carpenter	2	2
Mechanic	2	2
Teacher	2	2
Other	<u>7</u>	<u>5</u>
Total	<u>130</u>	<u>100%</u> <sup>■</sup>

TABLE 3.2

Number and Percent of Current ENSA Students  
from Rural and Urban Areas by Province of Origin

<u>Province</u>	<u>Number of Students From Rural Areas</u>	<u>Number of Students From Urban Areas</u>	<u>Total Students Number/Percent</u>		<u>Population in Provinces (percent of national total)</u>
North West	3	1	4	2	- <sup>1/</sup>
South West	1	1	2	1	22 <sup>1/</sup>
Littoral	19	3	22	11	14
West	66	11	77	40	26
Center-South	61	5	66	34	19
East	3	0	3	2	5
North	13	4	17	9	14
Foreign	-	-	<u>1</u>	<u>1</u>	-
Total	<u>166</u>	<u>25</u>	<u>192</u>	<u>100%</u>	<u>100%</u>

Source: Le Cameroun, Jean Imbert, Presses  
Universitaires de France, 1973.

<sup>1/</sup> This percentage includes population from both the North West and South West Provinces.

■ May not add due to rounding.

The vast majority of ENSA students, 87 percent, come from rural areas (as shown in Table 3.2 above), which would appear to be fairly representative of the general population distribution. It must be noted, however, that students who have passed the BAC, and are therefore eligible to enter ENSA, spent most of their secondary school time in larger towns or cities.

3. What effect will the project have on the role of women?

a. Background

In Cameroon, the typical production unit is the family unit, with the women playing a distinctive dominant role, particularly in food production. The population involved in agricultural work is composed of 57% female, of whom 73% are wives of the male "chefs d' exploitation", 8% are their daughters, 12% are other female adults, and 7% are women who are themselves "chefs d' exploitation" (UNDP/FAO 1977, 63). Despite the dominant role of women in crop production, however, most agricultural extension activity has been directed toward the men. All extension post workers in Cameroon are males and while in principle, they are supposed to work with all farmers, they in fact, work almost exclusively with men alone.

At the community level, the "female counterparts" of the extension workers are the community development (CD) assistants and the animatrices. Community development assistants complete secondary school or teacher training, and then receive a one-year course at Kumba in home economics, self-help and community methods. Animatrices have primary school background. Generally, the CD assistants and animatrices focus on training women domestic skills such as cooking, house-cleaning, embroidery and knitting, and hygiene and child care. Their agricultural input is limited to "encouraging" women to implement what the male extension agents report. Quite obviously, insofar as providing women with access to improved production technologies is concerned, the type of extension services provided by CDs and animatrices is grossly inadequate.

If significant increases are to be achieved in Cameroon's food production, greater and more committed efforts need to be made to redirect the focus of research and extension activities toward women.

Bryson <sup>1/</sup> points out that a good potential for women's positive response for agricultural innovations exist. The experience at Yemessoa and Mbankomo supports this position. While initially women were found to be reluctant to attend meetings or speak in public when men were present, this constraint was overcome with the utilization of extension teams consisting of a woman and a man. This is a lesson learned that the UCD will incorporate in its outreach programs.

b. UCD's Commitment to Women as Students and Research/Extension Clients

The following measures will be incorporated in project implementation activities in recognition of the critical need to focus UCD's commitment to the enhancement of women's role in the agriculture sector.

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<sup>1/</sup>Judy C. Bryson, Women and Economic Development in Cameroon 1979, p. 81

(1) Career counselling at secondary schools will be regularly conducted by the UCD faculty and students to acquaint female pre-university students with potential careers in agriculture. Circulation of brochures on female career opportunities in agriculture (e.g., agricultural management, extension, education, etc.) will complement this effort. At present, most girls tend to choose options in the fields of education, economics, and medicine because they know very little about agricultural careers and tend to equate an agricultural education solely with jobs subjected to rough, bush conditions and with the operation of heavy machinery.

(2) Dormitory facilities are currently available to a limited number of women students. The construction plans for expanded dormitory facilities will provide for the accommodation of additional female (as well as male) students requiring such facilities in the future.

(3) With the land-grant model in mind, the UCD's curriculum and faculty program will be revised to increase emphasis on service orientation to small holders, currently predominated by women farmers. In this regard, the following measures will be undertaken:

- A study on the needs and role of women in agriculture will be incorporated in the curriculum as a basic rural education course. This will sensitize students, who in the future will influence the direction of the agriculture sector, to the needs and critical importance of women as providers of food in Cameroon.
- The UCD's extension program will require students to work with the extension service in the Dschang area (where there is a large concentration of women farmers) and in its five satellite research/extension sites. Again, this will enable students to gain first-hand information on the needs of small farmers in general, and on role of women in agriculture in particular. Hopefully, this experience will influence the UCD students as they carry out their future jobs as mid- and upper-level Ministry of Agriculture supervisors, extension service trainers, parastatal and agrobusiness employees, etc.
- One of UCD's outputs will be an active and improved research program focused on the problems of small food producers who are mostly women. Through this project, the UCD will have the capability and opportunity to participate, along with other agricultural research organizations, in the development and field testing of improved agricultural practices and inputs. To ensure attainment of this output, all UCD faculty members will be required to spend 25% of their time on agricultural research/outreach activities.
- In order to strengthen its ties and enhance its influence on Cameroonian agriculture-oriented institutions, UCD will conduct seminars and short courses to orient user-ministries/organizations on farming systems, problems of women farmers, and the availability of improved agricultural technologies.
- Ministry of Agriculture extension agents and CD assistants will be required to undertake short-term courses, to be prepared by UCD's Department of Rural Education. These courses will be designed to improve the relevance of the extension service activities to the needs of the farming sector.

- The UCD's Division of Rural Pedagogy will re-activate its mandate to prepare the curriculum and teaching materials for the Ministry of Agriculture's eleven agricultural technical colleges, from which extension agents graduate. Information on small holder agriculture will be incorporated in the curriculum.
- Research clients, including women farmers (who comprise the majority of the agriculture labor sector, the focus of the university's research activities), will be invited to participate in the UCD's committees; and working groups that will be formed to set the school's R & D agenda and validate its research findings.

(4) The small number of women students at UCD is basically a reflection and a result of the current small percentage of female primary school students. Admittedly, the solution to this constraint is beyond the scope of this project, which is limited to upgrading upper-level agricultural education. However, a good potential for increasing the number and improving the eligibility of female applicants for university education lies in the eventual implementation of the Support for Primary Education Project (631-0033). One of the major objectives of this project, which is envisioned for USAID funding, is to increase nationwide primary school enrollment for girls to at least 45% and upgrade the quality of primary education in Cameroon.

(5) Increasing the female composition of UCD's faculty will rest heavily on the success of its career counselling program in the short-run, and on efforts to increase the number and improve the quality of potential female university applicants in the long-run (see No. 4 above).

**E. ECONOMIC ANALYSIS**

**1. Profile**

With 75% of the population living in rural areas, the economy of Cameroon is heavily dependent on agriculture. And in spite of recent hydrocarbon deposit discoveries, the extent of these discoveries are not likely to represent more than self-sufficiency in petroleum. Thus, the agricultural sector has been identified as the key to future economic growth.

Today, Cameroon is one of only a handful of African countries close to food self-sufficiency. To sustain this positive attribute in the years to come - hand-in-hand with anticipated population increases - as well as ensure the agricultural sector's desirable contribution to growth, it is essential that institutional developments (e.g., research to develop improved production possibilities) be accomplished. Moreover, human resource development is a pre-condition to institutional development. This project's primary accomplishments will be simultaneous contributions to both agricultural institutional and human resource developments. Specifically, UCD will be charged with new, innovative developments in agricultural research and extension education, as well as for training high level manpower to staff both technical and management positions in agriculture. Importantly, agriculture is more than farming. It is science, it is business, and in Cameroon, it is the key to the growth and well-being of millions. It may also be capable of feeding others as well as Cameroonians. Finally, its challenges, in Cameroon, are now worthy of greater development of the University for Agriculture at Dschang.

**2. Benefits**

Before going on to an analysis of the project's economic considerations, it will at least be useful to indicate the nature of the prospective benefits. A classification of benefits (by type of recipient) from this project reveals these primary beneficiary categories:

a. Benefits to individuals:

- (1) Individual farmers - this group will receive the ultimate benefits of the research and extension-related activities of UCD itself and of the longer-term changes the new UCD program may have on the general extension and research programs of the Ministry of Agriculture (MOA), Ministry of Livestock (MOL), and related parastatal agencies.
- (2) Students - students will have higher probabilities of gaining access to agricultural post-secondary training, improved learning experiences, and greater job satisfaction.
- (3) Faculty - present and proposed faculty will receive improved opportunities for employment, training, better work conditions, and increased job satisfaction.
- (4) Personnel in other government ministries (e.g., Ministry of Health, Ministry of Livestock, etc.) will benefit from the in-service training and seminar program of the UCD.

b. Local Benefits:

The community of Dschang will benefit from the increased economic activity which construction and operation of the UCD facility will generate. Direct economic effects will be small initially, because of the large-scale import of workers, equipment, and materials. As the proximate infrastructure develops, however, local benefits will become an increasing multiple of every dollar spend on the project.

c. Regional Benefits:

Because the Western and Northwestern areas of Cameroon are almost exclusively agricultural in terms of economic activity, the location of the proposed institution at Dschang to become a regional center for economic development as well as for the further extension of national, social and cultural institutions throughout the area. The planned research and community support activities of the UCD are such that they are directly supportive of the agricultural needs of the region.

d. National Benefits:

Cameroon obviously gains in terms of the total benefits received by its individual citizens and regions. In addition, the UCD project may be seen to have truly "national" benefits in that increased agricultural productivity may have both domestic and external advantages for the GURC. If the UCD activity does lead to the country becoming self-supporting in foodstuffs, then this frees government resources for other development investment uses. If the region becomes the source for exportable products, then the GURC benefits in terms of trade balances and international reserves. Increased

food production will benefit all Cameroonian consumers through its moderating effect on retail prices.

3. Other Considerations:

With reference to the program goal of increasing overall agricultural production by increasing farmer productivity and income, an analysis of the country's development strategy indicates that attempts are being made to address constraints and the Cameroon Agricultural Education Project will complement these efforts. The constraints are:

- a. Shortages of production inputs (page 22, i.e. seeds, fertilizers, insecticides and credit);
- b. Lack of market incentives (page 22);
- c. Poor transportation facilities (i.e., roads and railroads) (page 22);
- d. Inadequate marketing system; and
- e. Weak extension service capacity.

Shortages of production inputs (seeds, fertilizers, insecticides and credit) are being addressed through A.I.D. projects, other donor projects and GURC activities as indicated below:

- i. USAID - The following USAID projects are assisting the GURC in providing production inputs (seeds, fertilizer, insecticides and credit): North Cameroon Seed Multiplication II; National Cereals Research and Extension Project (631-0013); North Cameroon Livestock and Agricultural Development Project; National Planning for Community Development; Young Farmers Training Project (provides animal traction); and Credit Union Development Project.
- ii. Other Donors - The World Bank has a number of large projects which will provide seeds, fertilizers, and insecticides to farmers. The most significant of these are: Northern Province Rural Development (37 million); Cocoa Project (\$24 million); Western Highlands (\$13 million); ZAPI(\$10.2 million); and SEMRY (\$38 million).
- iii. GURC - One of the Government of Cameroon's most significant activities in this area is its plans to develop, an agro-chemical plant in conjunction with the oil refinery which will produce fertilizers and pesticides. The GURC is also developing its credit agency for small farmers (FONADER).

Lack of market incentives - The GURC has shown commitment to providing these incentives, particularly in allowing food crop prices to reach their free market level. This has resulted in providing incentives for food crop production.

Poor transportation facilities - Major efforts have been made to develop the transportation system which will facilitate the marketing cash crops. These include large road and railroad development projects such as the Yaounde-Douala Road, the TransCam III Project, the Yaounde Bafoussam Road (in the western province), as well as farm to market roads, World Bank Western Highlands Project, ZAPI in the east, and the Northern Province Project).

Inadequate Marketing Systems - The GURC is addressing this problem through the development of cooperatives by the Department of Cooperatives and Mutualities in the Ministry of Agriculture, and the operation of two schools for the training of cooperative managers. A.I.D. projects in community development are also assisting in the cooperative activities.

Weak extension activity - The World Bank has been particularly active in increasing the quantity and quality of extension services. It is estimated that through their development projects (e.g., ZAPI, SEMRY, Western Highlands, Northern Province) the number of active extension agents will increase from approximately 4,000 to 5,000. These increases will be through the parastatal organization which will play an increasingly active role in food crop extension.

In view of the fact that attempts are being made to develop an integrated system for increasing agricultural production, investment in the agricultural education project is deemed essential to complement these other activities, all of which are directed to increasing agricultural activity and farmer incomes.

#### 4. Methodology

The analytical approach utilized in settling on this project was twofold: (1) first, to utilize a cost-effectiveness technique; and (2) to evaluate alternative opportunities for training high level manpower as a pre-condition to the institutional development needs of Cameroon. Cost-effectiveness is a form of analysis that is frequently employed. It accepts a certain goal -- stated in operational and not financial terms -- as given. What is then done is to determine the least-cost manner of achieving the goal. Possible alternatives for achieving the project's objectives were studied and their costs determined. The project proposed herein had the lowest cost, considering its social and economic impact.

Other alternatives for training high level manpower were also evaluated. These included (a) upgrading the quality of instruction at both ITA and ENSA to the levels required while maintaining separate campuses, (b) sending students to the United States or elsewhere to obtain the desired level and quality of education. Both of these alternatives were found to be more costly than the present project, as each was found to be missing the key ingredients of enhancing institutional research and extension development offered by the UCD option.

Simply stated, evaluating other alternatives of training high level manpower is an inadequate goal statement: what is needed, for true trade-off comparison purposes, are possible alternative opportunities which include training, research and extension as offerings. Clearly, this is not available as a part of diploma and certificate training, for example. Thus, for true comparison purposes, a panoply of other projects (such as a separate research project and a separate extension development project) would have to be costed and added before an analysis of truly comparable alternatives was possible.

The following summarizes the results of both the cost effectiveness investigation as well as the alternative of other techniques for performing high level training -- even if the latter doesn't fully fulfill the provision of institutional research and extension development.

Upgrading the quality of instruction while retaining separate campuses would result in substantial cost savings for the project. With 250 fewer students from ENSA, there would obviously be a corresponding reduction in the required number of classrooms, dormitory space, laboratories, vehicles, faculty, supporting staff and so forth. The maintenance of a separate ENSA facility would not represent an over all cost saving for the GURC, however. Expenditures that duplicate services and facilities at both institutions - one of the wastes that the present project proposes to eliminate - would continue under such an arrangement. In addition, some buildings at Nkolbisson would soon have to be renovated and new ones constructed to ensure the same quality of instruction as envisaged at the D'schang campus. Overall, it is estimated that over a 30-year period, these costs would far outweigh the savings to be made by not combining the two campuses as envisaged.

The other alternative to the project is to send the students out of the country to receive the required level of training. Based upon total project costs, which includes the complementary activities of the other donors and a substantial contingency for inflation, the average annual cost per student per year at the UCD over the next 30 years would be about \$15,500.\* The annual cost of training in the U.S., on the other hand, is presently about \$22,500. Moreover, since these costs are increasing at a current rate of about 15% per annum, the average annual outlay per student could be appreciably higher by the end of the project.

Even if educational costs in the U.S. and Western Europe do not increase appreciably during the next few years, at substantially lower cost per student'year, the present project is obviously preferable to sending Cameroonian agricultural students abroad for their education. At D'schang, the students will be studying in a familiar atmosphere. In addition, they will be actively involved in the process of adapting the very significant "western" technological advances in agricultural sciences to their own environment. Their educational experience will thus be both highly practical and of immediate relevance to their own professional careers and the manpower requirements of the agricultural sector.

\*This figure is based upon the following assumptions: 550 students per year for 30 years with a 5% average annual attrition rate; project costs totaling \$138 million with an additional \$3.5 million per year for 30 years, or \$105 million, in recurrent costs. Thus  $15,675 \text{ students} / \$243 \text{ million} = \pm \$15,500$  per student per year.

In addition to the alternative of sending students to the U.S. or Western Europe for training, the possibility of sending students to other African countries was also explored. At about \$15,500 per student per year the cost would be similar to those at Dschang. In addition, with surroundings similar to those in their own country, the above comments with respect to the preferability of studying in Cameroon could be substantially modified. The quality of education that students would receive, however, would generally be lower, and in some instances would be markedly lower, than that envisaged in the present project. Then too, it is also questionable that a large number of Cameroonian students could be absorbed in the relatively few African agricultural universities. Moreover, since the end product is not the same, such an alternative cannot be said to be a truly cost-effective alternative to the present project. To do so, it would have to produce the same result at less costs.

Another reason for creating and strengthening local and regional capacity is the larger and ever-increasing number of persons who can be trained in domestic institutions. There are obvious resource constraints in terms of financial assistance for the numbers who can be trained abroad. If funds are provided domestically for overseas training, the balance of payments problem becomes an additional economic constraint. Also there may be limitations on the number of students from developing countries who are allowed by the developed country institutions to enroll in courses.

#### F. Engineering Analysis

The project sites have been visited on numerous occasions by the USAID/Yaounde General Engineering Officer and by the architect/engineer on the contract design team. The USAID/Yaounde General Engineering Officer has reviewed all the construction documentation prepared for this project as well as discussed the ongoing construction with the architect and contractor. The recommendations which resulted from the above mentioned site visits, reviews and discussions have been incorporated in the appropriate technical and financial sections of this Project Paper. See Annex H.1<sup>2</sup> for the detailed engineering analysis.

## Chapter 4

### IV. FINANCIAL ANALYSIS AND PLAN

#### A. Financial Analysis

The financial soundness of the project depends on the GURC's ability to repay the loan and meet incremental project-generated expenses after grant and loan assistance has ended. This depends on the following factors:

##### 1. GURC Overall Financial Stability and Revenue

Cameroon's recent economic history displays a record of steady economic growth and consistently prudent financial policies and management, including regular payment of debts. The external debt service ratio currently stands at about 10% and has been projected by the World Bank to increase to 15.7% by 1986. The outlay for debt service is thus expected to remain low as a proportion of overall GURC budget and to be well within the country's revenue-raising capacity. Cameroon's economy is not dominated by any one export, at present, and current policy is to diversify further export production. Oil exploration and production continue to grow, however, and oil is expected to be the leading export very shortly. Moreover, the country's industrial energy needs are met through hydroelectric power sources. While Cameroon is a net food importer, food is exported in significant quantities and the GURC supports increased food production by agribusinesses and family farms. As a result, the growth of public revenues is expected to continue unabated. By African standards Cameroon is relatively immune to financial crises emanating from external events. Adequate financial support may thus be predicted for projects to which the GURC is committed.

##### 2. Allocation of Revenues

The GURC allocates its expenditures through two budgets: the capital (investment) and the current (operating expenses). Unfortunately, when project investment is externally funded (as by AID), there is always a possibility that recurring project operating costs will not be incorporated into the operating budget. It is, therefore, essential that new recurring costs be clearly identified and that their budgetary implications be understood and accepted in advance. The recurring costs to be generated by this project have been thoroughly reviewed and accepted by GURC officials.

##### 3. Capacity to Plan/Implement Usages of Budget Allocations

There are several reasons to believe that financial support problems will not arise with this project. First, as part of its policy of prudent financial management, the GURC proceeds with extreme caution before signing a project agreement. This assures that the Ministry of Economic Affairs and Planning and the Ministry of Finance are on-board and committed to supporting the proposed project. Once an agreement is signed, however, USAID/Cameroon knows of no case in which the GURC has defaulted on its commitments. Indeed, it has often exceeded the support stipulated. Additionally,

this project has built into it training and technical assistance in the administrative field, which should serve to minimize still further the potential problem of understating budget requirements which might arise during the UCD's annual budget preparation.

#### 4. Budget Experience

Cameroon has a strong performance record for complying with its investment objectives. For the years 1966-1970, overall compliance with the capital budget was 82% of planned investment. This rose to 98.7% for the years 1971-1975. The GURC thus has a record of financing, either from domestic or external sources, investment to which it accords sufficient importance. In the operating expense budget, the Ministry of Education has, for the last three fiscal years, been allocated the largest portion of the overall budget of any government office. The 1979/1980 allocation increased 19.8% over the 1978/1979 allocation; and the 1980/1981 budget is 13.8% higher than the 1979/1980. These increases clearly reflect the continued high priority assigned to education.

#### 5. Conclusion

In view of the high priority assigned to education and the continuing growth of the economy, this project is financially feasible for Cameroon. The GURC's financial history clearly supports the conclusion that funds can and will be made available for this project.

#### B. Financial Plan

##### 1. USAID Grant Funds: \$16,670,000

##### a. Technical Assistance: \$6,432,000

USAID will fund 35.35 work-years (WY) of long-term advisory services at a cost of approximately \$5,098,000 for salaries, allowances, travel, language training and support. Furnishings and appliances for the ten technicians are estimated at \$240,000, and vehicles at \$180,000. \$89,000 is allocated for vehicle operating costs over the life of the project. USAID will also fund 4 WY of Stateside support staff at \$153,000; and 48 person-months of short-term advisory services at \$500,000. Some locally-hired support staff (assistant and chauffeurs) will be funded at an anticipated cost of \$129,000. A provision of \$25,000 is included for the purchase of books and periodicals needed by the team, and \$18,000 is allocated for locally-purchased office supplies.

##### b. Training: \$3,971,000

Funding in the amount of \$3,233,000 is to be provided for 59 participants: 55 Master's degrees and 3 Ph.D's. \$289,000 is slated for observation tours and short courses in the United States and \$49,000 for training maintenance personnel. USAID will also fund approximately 1,630 person-months of in-service training at an estimated cost of \$400,000.

c. Operating/Maintenance Costs for Motor Pool Vehicles: \$73,000

USAID will provide \$73,000 for the normal operating and maintenance costs of the motor pool vehicles to be purchased with loan funds.

d. Maintenance Incentive: \$350,000

USAID will fund a portion of maintenance and operating costs on the new buildings. The amount funded will decrease annually as the GURC is able to pick up the costs.

e. Contingency: \$1,083,000

Provision for contingencies is 10% of above costs.

f. Inflation: \$4,761,000

Inflation is computed at 15% and compounded annually.

2. USAID Loan Funds: \$26,351,000

a. Project Commodities: \$2,755,000

USAID will fund vehicles, equipment, and furnishings for various University departments. See Annex H.13 for detailed descriptions.

b. Construction: \$13,013,000

Construction costs are estimated at \$13,013,000. See Annex H.5 for detailed description of construction activities.

c. Contingency: \$1,577,000

Provision for contingencies is 10% of above costs.

d. Inflation: \$9,006,000

Inflation is computed at 15% and compounded annually.

3. GURC Funds: \$74,878,000

a. Personnel: \$12,682,000

Personnel costs include salaries/benefits of participants, incumbents of current positions, and project-created positions.

b. Land: \$600,000

The GURC will make available some 645 hectares of land at Dschang, Bansa, and Djouttitsa.

c. Training: \$236,000

The GURC will fund the international travel of long-term training participants.

d. Operational Costs: \$19,834,000

The GURC will fund operational costs including scholarships, utilities, supplies, etc. See Table 4.2 for detailed breakdown.

e. Support of U.S. Advisors: \$203,000

The GURC will provide office space and some office supplies for the U.S. technicians.

f. In-Country Freight on Commodities: \$253,000

The cost of transporting imported commodities from the Port of Douala to project site will be borne by the GURC.

g. Construction: \$13,340,000

The GURC will fund \$13,340,000 of construction costs.

h. Other Donor Activities: \$6,795,000

The GURC will provide \$6,795,000 in support of other donor projects. See Section 2.C.d. and the Construction Annex for details.

i. Inflation: \$20,935,000

Inflation is computed at 15% and compounded annually.

4. Other Donor Activities: \$17,820,000

The IBRD, Belgium, and France have offered assistance to other University departments, as detailed in Section 2.C.d.

### 5. Analysis of the GURC's Financial Absorptive Capacity

An analysis of the GURC's financial management performance, at least during the last five years, clearly indicates that the Government manages its budget very conservatively. All expenditures, both operating and capital, have always been covered by revenues. With the expected substantial increases in petroleum earnings, this trend is envisioned to continue during the eight-year period (FY 1981/82 - FY 1987/88) being analyzed. It is likewise expected that such increases in revenues will result in a continued high proportion of domestic financing of total investments and a modest debt service ratio throughout the 1980's. The current debt service ratio is 10.8% and is expected by the World Bank to rise to 14% before dropping to 12.5% in 1986.

Cameroon has had a strong performance record in meeting its investment objectives. During the 2nd Development Plan period, the percentage realization was 82%. This improved further to 98% during the Third Development Plan period.

In order to get indications of the GURC's capability to absorb the additional costs to be generated by this project (recurrent and non-recurrent), the following annual estimates for the period FY 1981/82 - FY 1987/88 were made: (1) GURC budgetary revenues (Table 4.4b); (2) GURC budgetary expenditures (Table 4.4c); and (3) the Ministry of Education's budget (Table 4.4d). Three sets of estimates on enrollment increases over a 30-year period were likewise made (Table 4.4e). However, for this analysis, assumption A was used, which results in the highest recurrent scholarship cost obligations to UCD. It was assumed that the GURC's budgetary revenues will increase annually by 25%, based on World Bank estimates of the effect of oil production on the country's revenues. The GURC's budgetary expenditures for FY 1981/82 - FY 1987/88 were projected to increase by 18% annually (based on historical trends), and then adjusted upward to reflect incremental recurrent costs associated with development expenditures envisioned for the Fifth Development Plan period. This adjustment was based on findings incorporated in the study undertaken from May 1979 - December 1979, analyzing the financial absorptive capacity of the GURC (appendix to FY 1982 Cameroon CDSS). The Ministry of Education's budget was estimated to increase annually by 16%, based on historical trends.

On the basis of the projections mentioned above, the following observations can be made:

1. The project-generated costs (incremental to UCD's current operating and capital expenditures ) of \$2.03 million in FY 1982 and \$6.35 million in FY 1987, which include both recurrent and non-recurrent costs, will constitute 2.1% of the Ministry of Education's budget in FY 1982 and 3.1% in FY 1987. Compared to the government's total revenues, the additional costs at the beginning of the project implementation and at the end of project life will each constitute 0.2% of revenues in FY 1982, and 0.2% in FY 1987. The same costs will account for 0.25% of total expenditures in FY 1982 and 0.3% in FY 1987.

2. Recurrent costs in FY 1988, which is the first year after LOP, are estimated to reach \$5.2 million. These new costs will constitute 2.2% of the estimated Ministry of Education budget in FY 1988, 0.12% of the GURC's budgetary revenues, and 0.2% of the total budgetary expenditures. This project's recurrent costs are expected to account for about 2.8% of the estimated additional recurrent cost obligations of GURC in FY 1988. It will be noted, however, that since the GURC recurrent cost estimates were made in 1979, such estimates may be conservative and may require further evaluation and adjustment.

3. A doubling in the number of UCD graduates (upper level ITA and ENSA) from 150, to 300, will result in an additional salary cost to the GURC of approximately \$3.4 million (using the highest salary limits for ENSA and upper-level ITA graduates). This amount accounts for about 0.25% of the salary and wages component of the GURC's projected budget for FY 1988. Using Assumption A (Table 4.4e) of projected increases in student enrollment, a doubling in graduates cannot be expected to occur before 1995. By the year 2000, and assuming a 5% attrition rate, the cumulative number of additional graduates (from 1986) will total 3,800. This number of graduates will require a salary outlay of about \$44.8 million in the year 2000, which represents 3% of the salaries and wages component of the FY 1988 GURC budget. Comparisons are made with the FY 1988 projected budgetary expenditures for the sake of conservatism, and because budgetary estimates beyond that period cannot be realistically made at this point.

Based on the above observations, it can be safely expected that the additional recurrent and non-recurrent costs to be generated by this project can be absorbed by the government. In addition, as pointed out on page 55 of the PP, there are reasons to believe that financial support problems will not arise with this project: (1) the GURC proceeds with extreme caution before signing project agreements, as in consistent with its policy of prudent financial management; and (2) USAID/Cameroon knows of no case in which the government has defaulted in its financial commitments.

TABLE 4.1  
USAID EXPENDITURES BY FISCAL YEAR - GRANT-FUNDED  
(\$000)

	<u>FY 82</u>	<u>FY 83</u>	<u>FY 84</u>	<u>FY 85</u>	<u>FY 86</u>	<u>FY 87</u>	<u>TOTAL</u>
<u>Technical Assistance</u>							
Long-Term Advisors - Cameroon	300	545	1260	1241	1130	622	5098
Long-Term Advisors - USA	45	45	63	-	-	-	153
Short-Term Advisors	64	86	78	119	108	45	500
Local Support Staff	9	22	23	24	25	26	129
Furniture/Appliances	240	-	-	-	-	-	240
Vehicles (10)	90	90	-	-	-	-	180
Vehicle Maintenance/Operations	2	8	18	25	24	12	89
Books and Periodicals	8	5	12	-	-	-	25
Office Supplies	10	2	2	1	2	1	18
Total	<u>768</u>	<u>803</u>	<u>1456</u>	<u>1410</u>	<u>1289</u>	<u>706</u>	<u>6432</u>
<u>Training</u>							
Graduate Degree Training - USA	467	888	833	600	400	45	3233
Observation Tours/Short-Term - USA	54	72	54	54	36	19	289
Maintenance Training	-	-	49	-	-	-	49
In-Service Training	-	-	52	89	114	145	400
Total	<u>521</u>	<u>960</u>	<u>988</u>	<u>743</u>	<u>550</u>	<u>209</u>	<u>3971</u>
<u>Operating/Maintenance Costs for Motor Pool Vehicles</u>							
	-	3	10	15	20	25	73
<u>Maintenance Incentive</u>							
	-	-	-	200	100	50	350
Subtotal	1289	1766	2454	2368	1959	990	10826
Contingency (10%)	129	177	245	237	196	99	1083
Inflation (15% compounded)	-	265	791	1234	1467	1004	4761
TOTAL EXPENDITURES - GRANT-FUNDED	<u>1418</u>	<u>2208</u>	<u>3490</u>	<u>3839</u>	<u>3622</u>	<u>2093</u>	<u>16670</u>

**TABLE 4.2**  
**USAID EXPENDITURES BY FISCAL YEAR - LOAN-FUNDED**  
(\$000)

	<u>FY 82</u>	<u>FY 83</u>	<u>FY 84</u>	<u>FY 85</u>	<u>FY 86</u>	<u>FY 87</u>	<u>TOTAL</u>
<u>Project Commodities</u>							
Motor Pool Vehicles/Parts/Tools	130	-	-	-	-	-	130
Dept. of Rural Technology	-	216	10	-	-	-	226
Dept. of Agric. Economics	-	20	5	5	5	-	35
Dept. of Agric./Basic Sciences	-	215	214	43	42	-	514
Dept. of Rural Education	-	30	-	-	-	-	30
University Furnishings/Equipment	-	250	250	-	-	-	500
Library Furnishings/Equipment	-	618	113	113	100	-	944
Printing Equipment	-	130	-	-	-	-	130
Research/Experimental Farm Equipment	-	-	-	246	-	-	246
<b>Total</b>	<b>130</b>	<b>1479</b>	<b>592</b>	<b>407</b>	<b>147</b>	<b>-</b>	<b>2755</b>
<u>Construction</u>							
Construction Costs	-	-	3127	3575	3742	2569	13013
Subtotal	130	1479	3719	3982	3889	2569	15768
Contingency (10%)	13	148	372	398	389	257	1577
Inflation (15% compounded)	-	222	1199	2074	2913	2598	9006
<b>TOTAL EXPENDITURES - LOAN-FUNDED</b>	<b>143</b>	<b>1849</b>	<b>5290</b>	<b>6454</b>	<b>7191</b>	<b>5424</b>	<b>26351</b>

TABLE 4.3  
GURC EXPENDITURES BY FISCAL YEAR  
(\$000)

	<u>FY 82</u>	<u>FY 83</u>	<u>FY 84</u>	<u>FY 85</u>	<u>FY 86</u>	<u>FY 87</u>	<u>TOTAL</u>
<u>Personnel</u>							
General Administration	526	526	546	520	520	520	3158
Dept. of Agric./Basic Science	257	377	527	557	604	621	2943
Dept. of Rural Education	138	186	191	203	215	215	1148
Dept. of Rural Technology	36	60	84	117	123	123	543
Dept. of Agric. Economics	116	152	152	167	182	182	951
Dept. of Plan Protection	63	63	63	123	123	123	558
Dept. of Soil Science	104	104	104	164	164	164	804
Dept. of Forestry	40	40	40	40	40	40	240
Dept. of Animal Sciences	107	107	107	182	182	182	867
Directorate of Research/Farms	129	160	160	189	189	189	1016
University Library	38	50	69	99	99	99	454
Total	1554	1825	2043	2361	2441	2458	12682
<u>Land</u>							
	600	-	-	-	-	-	600
<u>Training</u>							
Air Fares for Participants	42	38	78	44	28	6	236
<u>Operational Costs</u>							
Scholarships	1500	1500	1500	1500	1500	1500	9000
Utilities	116	116	116	116	116	116	696
Supplies	385	385	185	185	185	185	1510
Farm Operations	113	113	113	113	113	113	678
Maintenance	115	195	195	395	495	645	2040
Research & Publications	73	73	73	98	98	98	513
Food Services	743	743	743	670	670	670	4239
Miscellaneous	193	193	193	193	193	193	1158
Total	3238	3318	3118	3270	3370	3520	19834

TABLE 4.3 (CONT'D)

<u>Support of U.S. Advisors</u>							
Office Space	5	13	21	29	26	14	108
Office Supplies	4	11	19	26	24	11	95
Total	9	24	40	55	50	25	203
<u>In-Country Freight on Commodities</u>							
	-	9	138	98	8	-	253
<u>Construction</u>							
	1779	4757	3384	1020	1312	1088	13340
<u>Other Donor Activities</u>							
	5444	536	405	270	140	-	6795
Subtotal	12666	10507	9206	7118	7349	7097	53943
Inflation	-	1576	2969	3708	5504	7178	20935
<b>TOTAL PROJECT EXPENDITURES</b>	<b>12666</b>	<b>12083</b>	<b>12175</b>	<b>10826</b>	<b>12853</b>	<b>14275</b>	<b>74878</b>

**TABLE 4.4**  
**New GURC Costs - Project-Generated**  
 (\$000)

	FY 82	FY 83	FY 84	FY 85	FY 86	FY 87	Total
<u>Personnel</u>							
General Administration	—	—	20	20	20	20	80
Dept. of Agric./Basic Sciences	80	180	390	420	461	474	2,005
Dept. of Rural Education	48	98	103	115	117	117	598
Dept. of Rural Technology	36	60	84	117	123	123	543
Dept. of Agric. Economics	36	62	62	77	92	92	421
Dept. of Extension/Research	—	30	30	59	59	59	237
University Library	—	—	—	49	76	68	193
<b>Total</b>	<b>200</b>	<b>430</b>	<b>689</b>	<b>857</b>	<b>948</b>	<b>953</b>	<b>4,077<sup>1</sup></b>
<u>Training</u>							
Air Fares for Participants	42	38	78	44	28	6	236 <sup>2</sup>
<u>Operational Costs</u>							
scholarships (additional)	—	—	—	—	136	300	436
Utilities	—	—	117	334	334	334	1,119
Maintenance	—	—	—	200	300	450	950
<b>Total</b>	<b>—</b>	<b>—</b>	<b>117</b>	<b>534</b>	<b>770</b>	<b>1,084</b>	<b>2,505</b>

1. Recurring Costs.
2. Non-recurring costs - during life-of-project only.

Support of U.S. Advisors

Office Space	5	13	21	29	26	14	108
Office Supplies	4	11	19	26	24	11	95
<b>Total</b>	<u>9</u>	<u>24</u>	<u>40</u>	<u>55</u>	<u>50</u>	<u>25</u>	<u>203</u>

In-Country Freight on Commodities

	—	9	138	98	8	—	253 <sup>2/</sup>
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Construction

	1,779	4,757	3,384	1,020	1,312	1,088	13,340 <sup>2/</sup>
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Sub-total

	<u>2,030</u>	<u>5,258</u>	<u>4,446</u>	<u>2,608</u>	<u>3,116</u>	<u>3,156</u>	<u>20,614</u>
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Inflation

	—	789	1,434	1,358	2,334	3,192	9,107
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**Total New Costs**

	<u><u>2,030</u></u>	<u><u>6,047</u></u>	<u><u>5,880</u></u>	<u><u>3,966</u></u>	<u><u>5,450</u></u>	<u><u>6,348</u></u>	<u><u>29,721</u></u>
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**TABLE 4.4 a**  
**GURC - Project-Generated Recurrent Costs**  
(000)

	FY 82	FY 83	FY 84	FY 85	FY 86	FY 87	Total Project	Projected FY 88
<b>Personnel:</b>								
General Administration	—	—	20	20	20	20	80	20
Dept of Ag./Basic Sciences	80	180	390	420	461	474	2,005	487
Dept of Rural Education	48	98	103	115	117	117	598	117
Dept of Rural Technology	36	60	80	117	123	123	543	123
Dept of Ag. Economics	36	62	62	77	92	92	421	92
Dept of Ext./Research	—	30	30	59	59	59	237	59
University Library	—	—	—	49	76	68	193	68
<b>Sub total</b>	<u>200</u>	<u>430</u>	<u>689</u>	<u>857</u>	<u>948</u>	<u>953</u>	<u>4,077</u>	<u>966</u>
<b>Operational Costs:</b>								
Scholarships (additional)	—	—	—	—	136	300	436	464
Utilities	—	—	117	334	334	334	1,119	334
Maintenance	—	—	—	200	300	450	950	500
<b>Sub total</b>	<u>—</u>	<u>—</u>	<u>117</u>	<u>534</u>	<u>770</u>	<u>1,084</u>	<u>2,505</u>	<u>1,298</u>
<b>RECURRENT COSTS DUE TO PROJECT:</b>	<b>200</b>	<b>430</b>	<b>806</b>	<b>1,391</b>	<b>1,718</b>	<b>2,037</b>	<b>6,582</b>	<b>2,264</b>
<b>INFLATION (15% compounded annually)</b>	<b>—</b>	<b>65</b>	<b>260</b>	<b>725</b>	<b>1,287</b>	<b>2,060</b>	<b>4,397</b>	<b>2,973</b>
<b>Total</b>	<u><b>200</b></u>	<u><b>495</b></u>	<u><b>1,066</b></u>	<u><b>2,116</b></u>	<u><b>3,005</b></u>	<u><b>4,097</b></u>	<u><b>10,979</b></u>	<u><b>5,237</b></u>

TABLE 4.4b - Budgetary Revenue Projections  
( in \$ billion, current prices )

<u>Year</u>	<u>Projections</u>
1981/82	1.11
1982/83	1.38
1983/84	1.73
1984/85	2.16
1985/86	2.70
1986/87	3.38
1987/88	4.22

Assumptions:

1. Projections are inclusive of estimated petroleum earnings.
2. Annual increase is estimated to be 25%, based on Yaounde 8867 cable.
3. 280 CFAF = \$1

TABLE 4.4c - Budgetary Expenditure Projections  
( in \$ billion, current prices )

<u>Year</u>	<u>Unadjusted</u>	<u>Estimated Additional Recurrent Costs</u>	<u>Adjusted to include Recurrent Costs</u>
1981/82	0.90	0.013	0.91
1982/83	1.06	0.027	1.09
1983/84	1.25	0.043	1.30
1984/85	1.48	0.061	1.54
1985/86	1.75	0.092	1.84
1986/87	2.06	0.131	2.19
1987/88	2.43	0.183	2.61

Assumptions:

1. Annual increase in capital and current expenditures is estimated to be 18%, based on analysis of historical trends (1967 - 1981).
2. Recurrent cost expenditures for 1981/82 - 1984/85 based on estimates made in FY 1982 CDSS Appendix on Analysis of Cameroon's Financial Absorptive Capacity. Estimates for 1985/86 - 1987/88 are based on assumption that recurrent cost assignment of total budgetary expenditures increases by 1% annually.
3. 280 CFAF = \$1.

TABLE 4.4d - Projected Budgetary Expenditures for the Ministry of Education  
( in \$ million, current prices )

<u>Year</u>	<u>Budgetary Expenditure</u>
1981/82	97.6
1982/83	113.2
1983/84	131.3
1984/85	152.4
1985/86	176.7
1986/87	205.0
1987/88	237.8

Assumptions:

1. Annual increase in Education budget expenditure is 16%, based on average historical trends (1972 - 1981).

Table 4.4e - Projected Increases in UCD Enrollment  
(No. of Students per year )

<u>Year</u>	<u>Assumption A</u>	<u>Assumption B</u>	<u>Assumption C</u>
1986	600	550	550
1987	660	590	570
1988	720	630	595
1989	780	674	635
1990	850	720	695
1991	920	770	775
1992	990	825	865
1993	1,075	883	960
1994	1,165	945	1,055
1995	1,165	1,011	1,150
1996	1,150	1,082	1,150
1997	1,135	1,158	1,150
1998	1,100	1,158	1,125
1999	1,075	1,130	1,125
2000	1,050	1,110	1,100
2001-2015	1,075/Yr.	1,100/Yr.	1,100/Yr.

**TABLE 4.5**  
**SUMMARY COST ESTIMATE AND FINANCIAL PLAN**  
(\$000)

	U S A I D				GURC		OTHER DONORS		TOTAL	
	GRANT FUNDED FX	LOAN FUNDED LC	FX	LC	FX	LC	FX	LC	FX	LC
Technical Assistance	4691	1741	-	-	-	-	-	-	4691	1741
Training	3522	449	-	-	-	236	-	-	3522	685
Land	-	-	-	-	-	600	-	-	-	600
Operating/Maintenance Costs for Motor Pool Vehicles	-	73	-	-	-	-	-	-	-	73
Maintenance Incentive	-	350	-	-	-	-	-	-	-	350
Project Commodities	-	-	1936	819	-	-	-	-	1936	819
Construction	-	-	-	13013	-	13340	-	-	-	26353
Personnel	-	-	-	-	-	12682	-	-	-	12682
Operational Costs	-	-	-	-	-	19834	-	-	-	19834
Support of U.S. Advisors	-	-	-	-	-	203	-	-	-	203
In-Country Freight	-	-	-	-	-	253	-	-	-	253
Other Donor Activities	-	-	-	-	-	6795	-	17820	-	24615
Contingency	821	262	194	1383	-	-	-	-	1015	1645
Inflation	3612	1149	1106	7900	-	20935	-	-	4718	29984
<b>TOTAL PROJECT COSTS</b>	<b>12646</b>	<b>4024</b>	<b>3236</b>	<b>23115</b>	<b>-</b>	<b>74878</b>	<b>-</b>	<b>17820</b>	<b>15882</b>	<b>119837</b>

TABLE 4.6  
OTHER DONOR EXPENDITURES BY FISCAL YEAR  
(\$000)

	<u>FY 82</u>	<u>FY 83</u>	<u>FY 84</u>	<u>FY 85</u>	<u>FY 86</u>	<u>FY 87</u>	<u>TOTAL</u>
<u>IBRD</u>							
Technical Assistance	1200	-	-	-	-	-	1200
Construction	3650	-	-	-	-	-	3650
Commodities	2150	-	-	-	-	-	2150
Total	<u>7000</u>	-	-	-	-	-	<u>7000</u>
<u>Belgium</u>							
Technical Assistance	800	1000	1000	1000	600	-	4400
Training	300	300	100	-	-	-	700
Construction	2550	-	-	-	-	-	2550
Commodities	-	200	200	-	-	-	400
Operating Expenses	10	15	15	10	-	-	50
Total	<u>3660</u>	<u>1515</u>	<u>1315</u>	<u>1010</u>	<u>600</u>	-	<u>8100</u>
<u>France</u>							
Technical Assistance	2450	-	-	-	-	-	2450
Supplies	180	-	-	-	-	-	180
Operating Expenses	90	-	-	-	-	-	90
Total	<u>2720</u>	-	-	-	-	-	<u>2720</u>
<b>TOTAL OTHER DONOR EXPENDITURES</b>	<u>13380</u>	<u>1515</u>	<u>1315</u>	<u>1010</u>	<u>600</u>	-	<u>17820</u>

TABLE 4.7  
COSTING OF PROJECT OUTPUTS/INPUTS  
(\$000)

	O U T P U T S								Total	Percentage of Total Project
	Revised Academic & Admin Structure	Revised Curriculum for IT/IA Tracks	Upgraded Faculty & Staff	Inter-Disciplinary R&D Program	Linkages with Client Agencies	Demonstration Farms	New Facilities	Maintenance & Motor Pool Units		
<b>INPUTS</b>										
<b>USAID Grant-Funded</b>										
Technical Assistance	740	2315	740	804	483	353	514	483	6432	4.7
Training	230	106	3342	106	106	26	-	55	3971	2.9
Operating/Maintenance - Motor Pool	-	-	-	-	-	-	-	73	73	.1
Maintenance Incentive	-	-	-	-	-	-	-	350	350	.3
Contingency	97	242	408	91	59	38	51	97	1083	.8
Inflation	427	1065	1795	400	259	167	726	422	4761	3.5
Total	1494	3728	6285	1401	907	584	791	1480	15670	12.3
<b>USAID Loan-Funded</b>										
Project Commodities	54	1594	54	192	54	677	-	130	2755	2.0
Construction	-	-	-	-	-	-	13013	-	13013	9.6
Contingency	6	159	6	19	6	68	1300	13	1577	1.2
Inflation	31	910	31	110	31	387	7432	74	9006	6.6
Total	91	2663	91	321	91	1132	21745	217	26351	19.4
<b>GURC</b>										
Personnel	2054	4930	1474	1822	954	668	464	316	12682	9.4
Land	-	-	-	-	-	-	600	-	600	.4
Training	-	-	236	-	-	-	-	-	236	.2
Operational Costs	943	3441	1342	3287	3346	3919	784	2772	19834	14.6
Support of US Advisors	23	73	23	25	16	11	16	16	203	.2
In-Country Freight - Commodities	5	146	5	18	5	62	-	12	253	.2
Construction	-	-	-	-	-	-	13340	-	13340	9.8
Other Donor Activities	153	1388	1750	435	248	438	2383	-	6795	5.0
Inflation	1233	3872	1875	2168	1773	1979	6826	1209	20935	15.4
Total	4411	13650	6705	7755	6342	7077	24413	4325	74878	55.2
<b>Other Donors</b>										
IBRD	200	2000	500	500	-	150	3650	-	7000	5.1
Belgium	200	1400	2000	400	500	1000	2600	-	8100	6.0
France	-	240	2090	240	150	-	-	-	2720	2.0
Total	400	3640	4590	1140	650	1150	6250	-	17820	13.1
<b>TOTAL PROJECT INPUTS</b>	<b>6396</b>	<b>23881</b>	<b>17671</b>	<b>10617</b>	<b>7990</b>	<b>9943</b>	<b>53199</b>	<b>6022</b>	<b>135719</b>	<b>100.0</b>

Chapter 5

V. IMPLEMENTATION ARRANGEMENTS

A. Introduction

The analysis presented in Chapter Three indicates that the administrative arrangements described herein are practical and realistic. They involve the University Center at Dschang (UCD), the Ministries of Agriculture, Education and Equipment, the Institute for Agronomic Research (IRA), the Institute for Zoological Research (IRZ), the Presidency, USAID, and the University of Florida. The implementation arrangements include coordinated plans for technical assistance, training, and commodity procurement.

B. Collaborative Assistance

The collaborative assistance method (HB 14, App. H) is being used to implement this project. It allows maximum participation of the U.S. contractor and host country in the design of the program and permits project implementation to respond to changing requirements throughout the life of the project.

In accordance with the collaborative assistance method this implementation section and pertinent annexes (Procurement, Technical Assistance, Training, Indicative Equipment List, and Administration) should not be considered as rigid. What is contained is a life-of-project operational plan based upon the best information presently available. An institution as complex and dynamic as a university is expected to change, as will the influences that shape it. It is for these reasons that the collaborative assistance method was believed to be appropriate for this project. What is contained is a life-of-project operational plan which may be considered firm for the first two years. At the annual evaluation/review a revised detailed work plan for the coming year will be approved by the three participating groups: the GURC, the University of Florida and USAID.

C. Administrative Arrangements

1. Government of Cameroon

The following agencies will have administrative responsibility for the project:

a. The University Center at Dschang (UCD)

The UCD will be the major implementing agency for the project and the U.S. technical assistance team will work for this agency. It will be responsible for university operations including conduct of its academic program, in-service training for its staff, and the overall operation of the university. It also will be responsible for hiring new staff, selecting candidates for training from this group and keeping them for five years after training. The UCD will be responsible for preparing documentation for procurement of U.S. and off-shore project commodities. At the project's outset

the UCD procurement office will be assisted by the administrative specialist of the contractor.

The UCD will arrange for local-cost commodity purchases provided under the project loan, clear articles from customs and transport them to the campus. The UCD will monitor and evaluate all aspects of the project.

b. Ministry of Education

The Ministry of Education, through the Directorate of Higher Education, will be responsible for monitoring the project and will participate in its evaluations.

c. Ministry of Equipment

The Ministry of Equipment and USAID will have ultimate responsibility for monitoring of all architectural and engineering (A/E) and construction activities. The Ministry of Equipment will provide permanent inspector(s) at the construction sites.

d. Ministry of Agriculture, IRA and IRZ

All three agencies will participate in UCD's curriculum development and will provide visiting instructors to the university. They will also be sources of candidates for teaching positions at UCD and for academic training. IRA and IRZ will also provide the land for, and allow for the use of, two additional student training facilities at IRA/Ekona and IRZ/Wakwa and cooperate with the UCD in developing its research program. Representatives from IRA and IRZ will serve on the UCD curriculum development and research committees.

2. USAID

USAID and the UCD will be jointly responsible for monitoring and evaluating the project's technical assistance team. USAID and REDSO/WA will draw up the PIO/T for technical assistance. USAID will purchase required project vehicles for the U.S. technical assistance team and will monitor off-shore loan-funded procurement.

UCD, with contractor and USAID assistance, will be responsible for letting and awarding contracts for A/E and construction activities. USAID will have responsibility, working with the Ministry of Equipment, for monitoring these activities.

3. The University of Florida

The University of Florida will be responsible for providing the technical assistance described in Chapter Two. This includes the purchase of a specified amount of commodities for the technical assistance team: household furniture, appliances, office supplies and books.

The University of Florida will also be responsible for developing, monitoring, and evaluating participant training programs. This includes placement of participants at the University of Florida as well as at other universities.

D. Technical Assistance Plan

The total technical assistance package contains 39.25 person-years: 35.25 long-term and 4 short-term. Brief descriptions of the scopes of work for technical advisors may be found in Chapter Two, Section 2.C.4. Detailed descriptions of technical services and their timing are found in the Technical Assistance Plan, Annex H.10. The Chart 5.1 indicates the timing of long-term technical assistance.

CHART 5.1  
LONG-TERM TECHNICAL ASSISTANCE

( Y E A R )	---1	---2	---3	---4	---5	---6	*
Team Leader	xxx	xxxx	xxxx	xxxx	xxxx	xxxx	
Research and Extension Specialist		xxxx	xxxx	xxxx	xxxx	xx	
University Admin. Specialist		xxxx	xxxx	xxxx			
Agric. Curriculum Specialist			xxxx	xxx			
Basic Science Specialist			xxx	xxxx	x		
Rural Education Specialist			xxxx	xxxx	xxxx		
Rural Technology Specialist		xx	xxxx	xxxx	xxxx		
Agric. Economics Specialist			xxxx	xxxx	xx		
Librarian			xxx	xxxx	xx		
Team Administrative Specialist	xx	xxxx	xxxx	x			

\* Each "x" represents a quarter, i.e. three months.

CHART 5.2  
SHORT-TERM TECHNICAL ASSISTANCE

( Y E A R )	---1	---2	---3	---4	---5	---6
Facilities Planning	x	x				
Maintenance			xx	xx	x	x
Evaluation				x	x	x
Research and Extension			x		x	
Curriculum Development			x	x		
Agric. Curriculum Development			x	x		
Rural Technology		x				
Audio-Visual			x	x		
Rural Education		x				x
Administration						xxx

Timing and job descriptions for short-term technical assistance may be found in the Technical Assistance Plan, (Annex H.10).

E. Training Plan

A detailed discussion of this topic is presented in Annex H.11. Short-term training and observational tours in the U.S. will be conducted for mid and upper-level UCD administrative officials in various aspects of university administration (e.g. scheduling, personnel management, procurement). Teaching staff will also be sent to the U.S. to take advantage of specialized programs of courses that may be offered in particular fields (by USDA, for example). They will be of three to twelve weeks duration and may include seminars, site visits, and/or formal course work. They will be designed to increase administrators' effectiveness and will be programmed to meet the time available for training.

Graduate training programs will be designed to train faculty for the various departments at UCD. Fifty-five Master's degree and three Ph.D degree programs are planned. A summary chart 5.3 indicates timing and specialities. A revised detailed training plan will be completed by the end of the twelfth month. The plan will include detailed plans for monitoring participants' progress.

CHART 5.3  
LONG-TERM TRAINING

Fifty-five Master's and three Ph.D.'s will be trained according to the following schedule:

( Y E A R )	---1	---2	---3	---4	---5	---6	
	xx	xxxx	xxx				
	(21 Master's:)						
	- 10 Agriculture						
	- 3 Agriculture Economics						
	- 4 Rural Education						
	- 3 Rural Engineering						
	- 1 Library Science						
	1 Ph.D. - Rural Education						
		xx	xxxx	xxx			
		(19 Master's:)					
		- 10 Agriculture					
		- 3 Agriculture Economics					
		- 2 Rural Education					
		- 2 Rural Engineering					
		- 2 Library Science					
			xxx	xxxx	xxx		
			(12 Master's:)				
			- 10 Agriculture				
			- 2 Rural Engineering				
			2 Ph.D.'s - Agriculture				
				x	xxxx	xxxx	
				(2 Master's in Rural Engineering)			
					xxxx	xxxx	
					(1 Master's in Computer Science)		

Short-term training will be given to university and on-university personnel through the department or Rural Education. A detailed description of these programs may be found in the Training Plan, Annex H.12.

F. Procurement Plan

A detailed discussion of the commodity procurement plan is presented in Annexes H.12 and H.13 (Procurement Plan and Equipment List). The following is a summary of these annexes:

### 1. Procurement Responsibility

As stated in Section 5.C.1.a., the UCD, with T.A. contractor assistance, will be responsible for initiating documentation for procurement of U.S. and off-shore project commodities.

Unless otherwise designated, the GURC-selected procurement services agent (PASA) will purchase all U.S. commodities. Initiating requests for procurement of all local cost commodities will be the responsibility of the procurement officer at UCD, with exceptions noted below. He will be assisted by the contractor team management specialist and technicians. UCD local procurement will be made in local currency in a manner predetermined with USAID.

#### Exceptions to UCD Procurement

Technicians' household effects, appliances, office supplies, and equipment will be purchased by the technical team.

Technicians' vehicles will be procured by USAID acting as PSA on behalf of the university.

### 2. Non-U.S. Procurement<sup>1/</sup>

Printing equipment, (e.g. offset press and miscellaneous equipment, source/origin 935).

Textbooks, (source/origin, Code 935).

Household furniture for technical assistance team, (e.g. office, dormitory and classroom furniture, source/origin, Cameroon).

Selected books, supplies, and equipment, (source/origin, Code 935).

#### G. Waivers

The following Code 935 source/origin waivers have been requested. A detailed description of the items to be purchased and the justifications for purchasing them from Code 935 countries appear in the Commodity Procurement Annex.

- a. \$200,000 contingency waiver for purchase of local commodities to replace those lost, damaged, or incorrectly shipped;
- b. \$100,000 for purchase of textbooks;

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<sup>1/</sup> See Equipment List for equipment to be purchased in-country.

- c. \$130,000 for proprietary procurement of Heidelberg, Afga-Geavert and Durst printing equipment including accessories and spare parts;
- d. \$45,000 for photocopy equipment;
- e. \$20,000 for light-duty duplicating machines;
- f. \$5,755,000 for construction commodities; and
- g. \$14,000,000 for a conditional waiver of nationality for construction services.

#### H. Implementation Sequence

In conformity to the collaborative assistance method, the implementation sequence for Years One and Two are presented in detail while the remaining years are presented more generally. Sequence details will be elaborated and developed by the GURC, Contractor and USAID annually. However, tentative sequences for the duration of the project for construction, technical assistance, training, and commodity procurement may be found in the appropriate annexes.

#### Year 1

Project Agreement signed, Contract negotiated with the University of Florida (month 2/3). Team Leader and Team Management Specialist arrive in Cameroon (month 4/3), Team Leader returns to the U.S. to complete language training (months 6-10). Administrative Specialist begins work (month 4). Housing, furnishing and vehicles purchased/ordered for Team Leader and Administrative Specialist (month 4/5). Logistical preparations made for technicians arriving in Year 2, e.g. housing, furniture, vehicle (months 4-8-12). University Administrative Specialist and Research Extension Specialists identified (months 3-6), and complete language training (months 6-12). Director of Extension and Research identified and hired by UCD (months 6-12).

Initial candidates for training identified (months 1-2), selected (months 3-4), and hired by University (months 5-6). Training begins in U.S. (months 9-12). Second group of candidates for training identified (months 6-9) and selected (months 9-12).

Architectural/Engineering work begins (months 1-3). Utility infrastructural development begins (months 6-9). Construction of Administrative block begins (months 1-2). Soil exploration takes place (months 3-9).

Detailed evaluation plan developed (months 3-6). In-service and participant training plan for the following year revised (months 6-12).

### Year 2

University Administration and Research/Extension Specialists arrive (month 13). Logistical preparations made for T.A. team members arriving Year 3 (months 13-24). Local T.A. staff hired (months 13-15). Remaining team members identified (months 13-15), hired (months 16-18), and complete language training (months 19-27).

Second group of participant trainees hired (months 13-15) and begin training (months 18-24). Short-term observational tours completed by Director of Research/Extension (months 18-19), and two administrators (months 16,21).

A/E work continues (months 13-24). Road construction begins (month 13) and utility work continues (months 12-24); site development begins for lot 1 - drainage treatment plant and outdoor laboratory (months 21-24).

Initial in-service training sessions held in development of curriculum (months 15, 18, 21, 24) and research program (16, 19, 23). In-service training plans for following year developed/ revised (months 21-24). Evaluation of first year concluded (month 13). Evaluation of second year conducted and revisions made (month 23). Potential personnel for staff exchanges are identified (month 13-16) and selections are made and approved (months 17-24).

### Year 3

Most of technical assistance team members now in place. Third group of trainees depart. First group of trainees return. Curriculum and administrative revisions continue. Exchange program with DGRST and Ministries begins. Project evaluation.

### Year 4

Major curriculum and administrative revisions completed. Second group of trainees return. Student plots being used. New curriculum being used.

### Year 5

Curriculum and library workshops. New curriculum and library being used. Third group of trainees return. Project evaluation. Departments of Agricultural Economics, Agriculture and Basic Sciences in full operation. First in-service workshops for teachers at agricultural colleges. Regional workshops.

### Year 6

Rural Education and Rural Technology Departments in full operation. Journal published. First Ingénieur des Travaux graduates trained entirely under new curriculum. Teachers devoting 25% of professional time to research and outreach activities.

Chapter 6

VI. PROJECT MONITORING AND EVALUATION

The Collaborative Assistance Method (C.A.M.) (Handbook 14, Appendix H) has been used to design this project and will be used in its implementation. This method provides for closer relationships among host country leadership, USAID, and the United States contractor in planning and implementing technical assistance projects. While this approach places greater responsibility upon the contractor and permits flexibility in project day-to-day implementation, it does not diminish the monitoring responsibility of USAID. Its basic objective is to maximize and make optimal use of the particular skills and resources of the host country, contractor, and USAID in achieving project goals.

Central to the success of the C.A.M. is the requirement for greater emphasis on continuous assessment of overall project management and evaluation of project goals, purposes, output, achievement, and implementation strategies. The overall scheme is based on three levels of evaluation to be employed in a cycle during the life of the project.

- (1) A quarterly review and assessment of project progress will be made jointly by the technical assistance team, the UCD and USAID. The review will be based on the project quarterly report. The purpose of these reviews will be to identify strengths and weaknesses in operational approaches, and to examine the need for changes in strategies in those areas observed to be deficient. Quarterly reviews will be incorporated in other periodic reviews when appropriate.
- (2) An annual review and assessment will be made of project accomplishments with reference to project purpose and goals. Again, the parties involved in this review will include the project team, UCD and USAID. In line with the collaborative assistance method, project implementation strategies, work plans and budgets for the coming year will be carefully reviewed and modifications will be made where the need for such becomes evident. The need for new inputs in the form of personnel, materials, and resources will also be reviewed at this time. The resulting budget and work plan will be agreed upon by the parties involved and become the basic implementation guide for the coming year.
- (3) At the conclusion of the third and fifth years of the Project, an in-depth evaluation will be carried out. This evaluation will be undertaken by external evaluators from the United States. Funding has been provided for this purpose.

Under the C.A.M., project implementors place particular emphasis on using the above mentioned evaluation activities to define adjustments required in the project's implementation schedule. The continuous assessment and evaluation activities will be coordinated by the Director General of the UCD and Chief-of-Party of the technical assistance team. Each of the project activities will be evaluated with respect to stated specific purposes, outputs, and inputs as they relate to the objectives of that activity and as modified during the annual review. Additionally, the independent evaluation of the total program will place particular emphasis on the progress made toward goal and purpose achievement and the effectiveness of overall program management.

Chapter 7

VII. CONDITIONS, COVENANTS AND NEGOTIATING STATUS

Planning of this project has proceeded to the point that the main issues concerning the project have been addressed and substantively resolved to the satisfaction of the GURC and USAID/Cameroon. The project has been discussed in detail with UCD, Ministry of Education, Ministry of Agriculture, IRA and IRZ officials during the formulation of its functional components as described in this PP.

In addition to the Standard Conditions Precedent (legal opinion, specimen signatures, designation of authorized representatives) the following clauses will be required in the project agreement.

1. Conditions Precedent to Construction Services:

Prior to disbursement of the Assistance for each construction activity, or to the issuance of documentation pursuant to which disbursement will be made with respect thereto, the Cooperating Country will, except as the Parties may otherwise agree to in writing, furnish to A.I.D., with respect to such construction activity, in form and substance satisfactory to A.I.D.:

- (a) Plans and specifications, bid documents and time schedules for such construction activity; and
- (b) An executed contract acceptable to A.I.D. with a firm acceptable to A.I.D. for architectural and engineering services and for construction supervision of such construction activity; and
- (c) An executed contract for construction services for such activity with a firm acceptable to A.I.D.

2. Conditions Precedent for Commodity and Equipment Procurement:

Prior to disbursement of the Assistance for procurement of commodities and equipment from the United States (except procurement of commodities and equipment by the technical assistance contractor), or to the issuance by A.I.D. of documentation pursuant to which disbursement will be made with respect thereto, the Cooperating Country will, except as the Parties may otherwise agree in writing, furnish to A.I.D., with respect to each such commodity and equipment purchase, in form and substance satisfactory to A.I.D.:

- (a) Detailed specifications for such commodities and equipment;
- (b) An executed contract or other suitable arrangements, with a firm acceptable to A.I.D. for the services of a procurement services agent to purchase such commodities and equipment on behalf of the Cooperating Country; and

- (c) An executed contract for the purchase of such commodities and equipment.

**3. To Disbursements for Maintenance:**

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

**B. Covenants**

1. The GURC agrees that sufficient funds will be budgeted and made available throughout the project to support project construction and operations.

2. The GURC agrees to assign, as required throughout the project, all GURC administrative and technical staff required to adequately carry out the project.

3. The GURC agrees that it is desirable and will make every effort to assure that persons completing project-financed training programs in the United States serve a minimum period of not less than five years in service at the UCD.

4. The Parties agree to establish an evaluation program as part of this project. Except as AID and the GURC may otherwise agree in writing, the evaluation program will include, during implementation of the project and at one or more points thereafter:

- (a) evaluation of progress toward attainment of the objectives of the project;
- (b) identification and evaluation of problem areas or constraints which may inhibit such attainment;
- (c) assessment of how such information may be used to help overcome such problems; and
- (d) evaluation, to the degree feasible, of the overall development impact of the project.

ANNEX A  
LOGICAL FRAMEWORK

Life of Project:  
From FY 82 to FY 87  
Total U.S. Funding \$43.02 million  
Date Prepared: June 17, 1981

Project Title Number: AGRICULTURAL EDUCATION PROJECT 631-0031

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MAYES OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Goal:</p> <p>To increase overall agriculture production by increasing farmer productivity.</p>	<p>Agriculture production increases to the point where Cameroon achieves food self-sufficiency.</p>	<p>Import - export statistics and Cameroon national agricultural production reports.</p>	<p>Cameroon agricultural policies do not inhibit increased farmer productivity.</p>
<p>Purpose:</p> <p>To assist GURC to create an agricultural university capable of training managers, researchers, planners, and teachers who can effectively staff the agricultural support institutions of Cameroon.</p>	<p>A functioning university producing graduates with a more relevant and practical education geared to the needs of Cameroon's agricultural sector.</p>	<p>Interviews with supervisors of UCD graduates.</p>	<p>The personnel trained in the U.S. will remain at UCD for at least five years.</p>
<p>Outputs:</p> <p>1. A revised academic and administrative university structure</p>	<p>1) A. Reorganized administration and management organization, procedures and staff. B. Revised academic scheduling procedures.</p>	<p>1) A. Existence of a detailed organizational and staffing plan. B. An established records system.</p>	

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ANNEX A  
LOGICAL FRAMEWORK

Life of Project: \_\_\_\_\_  
 From FY \_\_\_\_\_ to FY \_\_\_\_\_  
 Total U.S. Funding \_\_\_\_\_  
 Date Prepared: \_\_\_\_\_

Project Title Number: \_\_\_\_\_

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	METHODS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>2. Revised curriculum for Ingénieur des Travaux (IT) and Ingénieur Agronome (IA) tracks.</p>	<p>C. Mechanisms for improved communications, cross-fertilization, and cooperative action within the UCD.</p> <p>2) A. Curriculum containing a core of courses common to both Ingénieur des Travaux (IT) and Ingénieur Agronome (IA) during the first three years.</p> <p>B. Instructional Techniques and materials that supplement the lecture method.</p> <p>C. Increased libraries, audio-visual and statistical services and workshops.</p> <p>D. Curriculum including a new department of Rural Technology, additional courses in existing departments, and fully developed existing programs now offered on a limited basis.</p> <p>E. Consolidation of several small courses into fewer, larger courses.</p>	<p>C. Existence of permanent faculty-administration working groups.</p> <p>2) A. Existence of core curricula.</p> <p>B. Techniques and materials to supplement the lecture method.</p> <p>C. Adequate library, audio-visual and statistical services, and workshops.</p> <p>D. New department of Rural Technology, additional courses, and fully developed programs previously offered on limited basis.</p> <p>E. Courses modified.</p>	

ANNEX A  
LOGICAL FRAMEWORK

Life of Project:  
From FY \_\_\_\_\_ to FY \_\_\_\_\_  
Total U.S. Funding \_\_\_\_\_  
Date Prepared: \_\_\_\_\_

Project Title Number: \_\_\_\_\_

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	NAMES OF VERIFICATION	IMPORTANT ASSUMPTIONS
	<p>F. Practical, field-oriented contents to include practical field exercises utilizing the school farms and individual plots.</p> <p>G. Off-campus internship program integrated into the on-campus program. Improvement in quality of supervisors of students' field work.</p> <p>H. Incorporated problem-solving approaches in laboratory courses.</p> <p>I. More closely related science, mathematics, and other basic general education subjects to the agricultural content of the curriculum.</p> <p>J. Training in administrative and management procedures and practices in the core curriculum, and further training in the area in the last two years of the advanced program.</p>	<p>F. Practical field exercises and utilization of school farms and individual practice plots.</p> <p>G. Integration of off-campus internship and increased quality of supervisors of students' field work.</p> <p>H. Problem-solving approach in laboratory courses.</p> <p>I. Germane science, mathematics and other basic general education subjects to the agricultural content of the curriculum.</p> <p>J. Adequate administrative and management procedures and practices and existence of such courses in the curriculum.</p>	

ANNEX A  
LOGICAL FRAMEWORK

Life of Project: \_\_\_\_\_  
From FY \_\_\_\_\_ to FY \_\_\_\_\_  
Total U.S. Funding \_\_\_\_\_  
Date Prepared: \_\_\_\_\_

Project Title Number: \_\_\_\_\_

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	NAMES OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>4. Interdisciplinary research and development program.</p>	<p>4) A. Support of the instructional program.</p> <p>B. Contributions to faculty development.</p> <p>C. Useful knowledge generated for development of the Cameroonian agricultural sector.</p> <p>D. Director of Research and Extension responsible for forming a systematic R &amp; D program operating through the academic departmental structure.</p> <p>E. Individual and departmental research.</p>	<p>4) A. Research publication which reports on the R &amp; D program and its findings.</p> <p>B. Participation of research clients in University Committees and working groups which set the R &amp; D agenda and review findings.</p> <p>C. Extension activities of UCD staff..</p> <p>D. Director of Research and Extension and existence of adequate R &amp; D program.</p> <p>E. Existence of individual and departmental research.</p>	
<p>5. Linkages between the UCD and its client agencies.</p>	<p>5) A. An inter-agency committee for university oversight, seminars, workshops and conferences involving UCD faculty and agricultural support institution personnel. Field-site visits by UCD faculty and</p>	<p>5) A. Existence of an inter-agency committee, seminars, workshops, and conferences involving UCD faculty and agricultural support institution personnel. Field-</p>	

ANNEX A  
LOGICAL FRAMEWORK

Life of Project: \_\_\_\_\_  
 From FY \_\_\_\_\_ to FY \_\_\_\_\_  
 Total U.S. Funding \_\_\_\_\_  
 Date Prepared: \_\_\_\_\_

Project Title Number: \_\_\_\_\_

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	NAMES OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>3. Upgraded faculty and staff.</p>	<p>3) A. Training for 55 faculty and staff at the MA level, and to PH.D. level for an additional three.</p> <p>B. 75% of part-time teachers replaced.</p> <p>C. Devotion of 25% of time to research and/or outreach and extension activities, and number of classroom preparations per week are reduced.</p> <p>D. A six-year training plan for UCD staff developed and formally agreed to by UCD, USAID, and the U.S. technical assistance team. Plan completion scheduled for 12th month of project.</p> <p>E. In-service training for staff members.</p>	<p>3) A. 55 faculty and staff trained for MA's, and 3 persons trained for PH.D.'s.</p> <p>B. 75% of part-time teachers replaced.</p> <p>C. 25% of time devoted to research and/or outreach and extension activities, and classroom preparations per week reduced.</p> <p>D. Existence of six-year training plan.</p>	

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ANNEX A  
LOGICAL FRAMEWORK

Life of Project: \_\_\_\_\_  
 From FY \_\_\_\_\_ to FY \_\_\_\_\_  
 Total U.S. Funding \_\_\_\_\_  
 Date Prepared: \_\_\_\_\_

Project Title Number: \_\_\_\_\_

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	METHODS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>6. Demonstration farms.</p>	<p>students, new off-campus centers for students and faculty use at the research stations at Ekona and Wakwa and closer involvement of client institutions.</p> <p>6) A. An experimental farm of 100 hectares at the new campus will support research, provide student garden plots, and contain production units for dairy, swine, poultry, rabbits, and goats.</p> <p>B. A second farm at Bansoa to serve as a demonstration farm and for large-scale agricultural production, and approximately 50 permanent workers.</p> <p>C. A third farm, to be constructed at Djoutittsa, will serve as an experimental livestock unit. This faculty specialized research in animal production and for students summer field work experience.</p>	<p>site visits by UCD faculty and students. Off-campus centers.</p> <p>6) The farms described exist and serve stated purposes.</p>	

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ANNEX A  
LOGICAL FRAMEWORK

Life of Project: \_\_\_\_\_  
 From FY \_\_\_\_\_ to FY \_\_\_\_\_  
 Total U.S. Funding \_\_\_\_\_  
 Date Prepared: \_\_\_\_\_

Project Title Number: \_\_\_\_\_

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	EVIDES OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>7. New facilities.</p>	<p>USAID Loan Component:</p> <p>7) A. 1 teaching block, library, media center, dormitory, cafeteria, and commons room, infirmary, agricultural economics teaching block, rural technology teaching block, basic sciences laboratories, Djoutittsa farm, Dschang farm, Bansa farm, Wakwa and Ekona off-campus centers, and site work at UCD.</p> <p>World Bank Component:</p> <p>1 soil science block, 1 animal science unit, 1 plant protection block.</p> <p>GURC Component:</p> <p>1 administrative block, utility expansion, sports facilities, and land.</p>	<p>7) Existence of objectively verifiable indicators.</p>	
<p>8. Maintenance and motor pool units.</p>	<p>8) A. Establishment of maintenance superintendent position and maintenance staff hired and trained.</p>	<p>8) Maintenance superintendent and maintenance staff hired and trained.</p>	

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APPENDIX A  
LOGICAL FRAMEWORK

Life of Project:  
From FY \_\_\_\_\_ to FY \_\_\_\_\_  
Total U.S. Funding \_\_\_\_\_  
Date Prepared: \_\_\_\_\_

Project Title Number: \_\_\_\_\_

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	WAYS OF VERIFICATION	IMPORTANT ASSUMPTIONS																																				
	<p>B. Inventory control system developed for both maintenance and transportation units.</p> <p>C. Motor pool sharing the facilities of the agricultural mechanics shops for vehicle maintenance and repair.</p>	<p>B. Existence of inventory control system.</p> <p>C. Sharing of vehicles maintenance and repair facilities.</p>																																					
<p>9. Trained students having a qualitative difference in practical knowledge, skills and motivation</p>	<table border="1"> <thead> <tr> <th data-bbox="719 647 876 670">Year</th> <th data-bbox="876 647 1127 670">No. of Students Enrolled</th> </tr> </thead> <tbody> <tr><td>1986</td><td>550</td></tr> <tr><td>1987</td><td>570</td></tr> <tr><td>1988</td><td>595</td></tr> <tr><td>1989</td><td>635</td></tr> <tr><td>1990</td><td>695</td></tr> <tr><td>1991</td><td>775</td></tr> <tr><td>1992</td><td>865</td></tr> <tr><td>1993</td><td>960</td></tr> <tr><td>1994</td><td>1,055</td></tr> <tr><td>1995</td><td>1,150</td></tr> <tr><td>1996</td><td>1,150</td></tr> <tr><td>1997</td><td>1,150</td></tr> <tr><td>1998</td><td>1,125</td></tr> <tr><td>1999</td><td>1,125</td></tr> <tr><td>2000</td><td>1,100</td></tr> <tr><td>2001-2015</td><td>1,100/yr.</td></tr> <tr><td>30 year total</td><td>30,000</td></tr> </tbody> </table>	Year	No. of Students Enrolled	1986	550	1987	570	1988	595	1989	635	1990	695	1991	775	1992	865	1993	960	1994	1,055	1995	1,150	1996	1,150	1997	1,150	1998	1,125	1999	1,125	2000	1,100	2001-2015	1,100/yr.	30 year total	30,000	<p>UCD Records</p>	<p>1) A qualitative difference in practical knowledge, skills, and motivation of UCD graduates will increase demand both in government and the private sector.</p> <p>2) Increased sophistication in the agricultural sector in the long run will create increased demand for highly trained agriculturalists.</p> <p>3) If Cameroon does not have sufficient demands to fill the UCD to capacity, the UCD will become a regional university and foreign students will fill the gap.</p>
Year	No. of Students Enrolled																																						
1986	550																																						
1987	570																																						
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30 year total	30,000																																						

ANNEX  
LOGICAL FRAMEWORK

Life of Project:  
From FY \_\_\_\_\_ to FY \_\_\_\_\_  
Total U.S. Funding: \_\_\_\_\_  
Date Prepared: \_\_\_\_\_

Project Title Number: \_\_\_\_\_

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	SOURCES OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p><b>INPUTS:</b></p> <p>a) <u>USAID - GRANT</u></p> <p>1. Technical assistance</p> <p>2. Training</p> <p>3. Operating/maintenance</p> <p>Costs for Motor Pool Vehicles</p> <p>4. Maintenance incentive</p> <p>5. Contingencies (10%)</p> <p>6. Inflation (15% compounded)</p> <p>Total Grant Expenditures 16,670,000</p> <p>b) <u>USAID - LOAN</u></p> <p>1. Project commodities</p> <p>2. Construction</p>	<p>a) <u>USAID - GRANT (\$ 000)</u></p> <p>1. \$ 6,432</p> <p>2. 3,971</p> <p>3. 73</p> <p>4. 350</p> <p>5. 1,083</p> <p>b) <u>USAID - LOAN (\$ 000)</u></p> <p>1. \$ 2,755</p> <p>2. 13,013</p>	<p>USAID, GURC, and other donors Budget and Audits reports.</p>	<p>USAID's, GURC's and other donor's budgeted contributions will be available when needed.</p>

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ANNEX A  
LOGICAL FRAMEWORK

Life of Project:  
From FY \_\_\_\_\_ to FY \_\_\_\_\_  
Total U.S. Funding \_\_\_\_\_  
Date Prepared: \_\_\_\_\_

Project Title Number: \_\_\_\_\_

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	NAMES OF VERIFICATION	IMPORTANT ASSUMPTIONS
<u>INPUTS:</u> (cont.)			
3. Contingency (10%)	3. 1,577		
4. Inflation (15% compounded)	4. 9,000		
Total Loan Expenditures 26,351,000			
c) <u>GURC</u>			
1. Personnel	1. \$ 12,682		
2. Land	2. 600		
3. Training	3. 236		
4. Operational Costs	4. 19,834		
5. Support of U.S. Advisors	5. 203		
6. In-country freight on commodities	6. 253		
7. Construction	7. 13,340		
8. Other donor activities	8. 6,795		
9. Inflation	9. 20,939		
Total GURC Expenditures 74,878,000			
d) <u>IBRD</u>			
1. Technical assistance	1. 1,200		
2. Construction	2. 3,650		
3. Commodities	3. 2,150		
Total IBRD Expenditures 7,000,000			

ANNEX A  
LOGICAL FRAMEWORK

Life of Project: \_\_\_\_\_  
 From FY \_\_\_\_\_ to FY \_\_\_\_\_  
 Total U.S. Funding \_\_\_\_\_  
 Date Prepared: \_\_\_\_\_

Project Title Number: \_\_\_\_\_

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	METHODS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p><u>INPUTS</u> (cont.):</p> <p>e) <u>Belgium</u></p> <p>1. Technical assistance</p> <p>2. Training</p> <p>3. Construction</p> <p>4. Commodities</p> <p>5. Operating Expenses</p> <p>Total Belgian Expenditures 8,100,000</p> <p>f) <u>France</u></p> <p>1. Technical assistance</p> <p>2. Supplies</p> <p>3. Operating Expenses</p> <p>Total French Expenditures 2,720,000</p>	<p>e) <u>Belgium</u> (\$ 000)</p> <p>1. \$ 4,400</p> <p>2. 700</p> <p>3. 2,550</p> <p>4. 440</p> <p>5. 50</p> <p>f) <u>France</u> (\$ 000)</p> <p>1. \$ 2,450</p> <p>2. 180</p> <p>3. 90</p>		