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ECONOMIC AND FINANCIAL ANALYSIS
OF THE
U.S. A.I.D. ASSISTANCE PROGRAM
FOR THE
UNIVERSITY CENTER FOR AGRICULTURE
DSCHANG, CAMEROON

by

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I. INTRODUCTION

This paper will attempt to make three main contributions to the analysis of the proposed USAID assistance program to the University Center for Agriculture, Dschang, Cameroon (UCAD). First, there will be a discussion of the appropriate role of benefit/cost and cost effectiveness in the justification analysis process. Included in this section will be a rationalization of the project in economic terms to the extent permitted by data availability. In the case of the UCAD project, this is almost exclusively qualitative data except on the cost side.

Second, there will be an examination of the crucial factors in the implementation process which are viewed as determinant of the success of the program at UCAD. This will include proposals for dealing with those concerns not anticipated in the previous technical papers. The third and final section of the paper will involve a financial analysis of the individual departmental expenses as well as of the aggregate amounts for the full development project. This section will include an analysis of cost implications for USAID grant and loan obligations as well as recurrent costs in the UCAD budget. The paper will conclude with a discussion of the absorptive capacity issue for UCAD as well as the GURC and a final evaluation of the development project's economic justification.

II. INVESTMENT ANALYSIS AND THE USAID/UCAD DEVELOPMENT PROJECT

The traditional economic tools of benefit/cost and cost effectiveness analysis are impractical to implement in a formal manner given the advanced stage of the UCAD project design process and the limitations on time which exist. Involvement of an economist at the earliest stages of the planning process would have allowed a more deliberate consideration of alternatives. The considerations of costs and effects inherent in these analyses are so crucial to the project rationale, however, that an attempt will be made here to deal with these considerations. On the benefit side this will be done primarily in a qualitative manner.

Investment analysis--whether cost/benefit or cost effectiveness--is designed to insure the investor that the beneficial returns (in financial and nonfinancial terms) justify the expenditures (in financial and nonfinancial terms) required by the project under consideration. Because both expenditures and returns are spread over several time periods, investment analysis always must take into account the concept of discounted values. That is, because of anticipated inflation and risk, a dollar of expenditures or returns occurring in the future will be of less immediate value than a dollar of either occurring in the present. Because of the compounding effect of a rate of discount (normally equal to the interest cost of obtaining investment funds), the more distant in the future an expenditure or return is realized, the less valuable it will be, *ceteris paribus*.

The above considerations require the calculation of "present values" of benefits (returns) and costs (expenditures) so that they may be compared in dollar values of the same time period. The general formula for each a calculation is:

$$\frac{\sum_{t=1}^n \frac{B_t}{(1+i)^t}}{\sum_{t=1}^n \frac{C_t}{(1+i)^t}}$$

where: t = time periods

B = benefits (returns on investment)

C = costs (expenditures on investment)

i = rate of discount.

The above formula would generate the ratio of the present value of benefits to the present value of costs for the project. If the ratio is greater than 1, the investment is deemed justified because the generation of net benefits (benefits minus costs) is more than enough to compensate for the effects of the discount rate. If the ratio is less than 1, the investment is deemed unjustified because the net benefits are not adequate to cover the effects of the discount rate.

An analysis of this type is dependent upon the reliability of estimates of future costs and benefits and on the proper choice of an interest rate to be used for discounting future values. In social services projects, such as the USAID/UCAD endeavor, benefit values may be extremely difficult to quantify. What is most useful in this situation is to identify and enumerate the anticipated benefits of the project so that decision makers can compare their subjective valuation of these effects with the more explicit and objective cost considerations (discussed in a subsequent section of this paper). A classification of benefits (by type of recipient) from the UCAD development project would reveal these primary beneficiary categories:

1. Benefits to Individuals

a. Faculty--present and proposed faculty will receive improved opportunities for employment, training, better work conditions, increased job satisfaction and higher income.

b. Students--students will have higher probabilities of gaining access to agricultural post-secondary training, improved learning experiences, opportunities for better job placement, higher earnings after graduation and greater job satisfaction.

c. Individual farmers--this group will receive the benefits of the research and extension-related activities of UCAD itself and of the longer term changes the new UCAD 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. Local Benefits

The community of Dschang will benefit from the increased economic activity which construction and operation of the UCAD facility will generate. Economic multiplier effects will be small initially because of the large scale importation of workers, equipment and materials, but as the proximate infrastructure develops, local benefits will become an increasing multiple of every dollar expended on the project.

3. Regional Benefits

Because the Western and Northwestern areas of the Cameroon are almost exclusively agricultural in terms of economic activity, the location of the proposed institution at Dschang is especially advantageous. There is the opportunity for 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 UCAD are such that they are directly supportive of the agricultural needs of the region.

4. National Benefits

The nation of the Cameroon obviously benefits in terms of the summation of the benefits received by its individual citizens and regions. In addition, the UCAD project may be seen to have truly "national" benefits in that the increased agricultural productivity of the region may have both domestic and external advantages for the GURC. If the UCAD activity does lead to the region becoming self-supporting, 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.

The valuation of all these benefits is partly subjective and, in each case, will be realized only to the extent that the goals of the UCAD project are realized. The purpose here has been to suggest the range of beneficial effects which may be generated by the UCAD project and thus to

facilitate their comparison with the more quantitative costs which will be discussed later.

Cost effectiveness is a form of analysis wherein a certain goal--stated in operational, and not in financial terms--is taken as given, and the analyst attempts to produce the least cost manner of achieving that goal. Cost effectiveness tools are implicit in the work which has led to the technical papers upon which the final project proposal will be based. Each author of a technical paper, in fact, faced two separate cost effectiveness decisions: (1) how best to design a particular division or program of the UCAD to meet the stated goals of the institution and (2) how best to design an implementation schedule and format so as to create or revise a particular division or program so as to support these goals. . Because the authors are the best judges of these technical issues, the responsibility of the USAID staff, the economic consultant and the project team leader is to rationalize the separate technical paper recommendations within a single proposal for an integrated UCAD development strategy. In this work, priority has been given to synergistic program activities and to the avoidance of redundancies.

A larger cost effectiveness issue remains to be resolved, however. What assurance is there that the UCAD project is the most efficient means of achieving the GURC's goals in agricultural development and USAID's goals to increase agricultural production and the nutritional levels of the rural poor? After all, the demand for educational development is always a derived demand--derived from the needs for educated manpower, research and the community development activities of the educational system.

The goals of the GURC and USAID may be defined as having implications for five specific areas within two general groupings:

1. Production Goals

- a. Increase in the quantity and quality of agricultural land.
- c. Increase in the use of appropriate agricultural technologies and in the development of new ones.
- d. Increase in the quality of human resources applied in the agricultural sector.

2. Marketing Goals

- a. Development of a market and transportation infrastructure to support expanded agricultural activity.
- b. Development of improved managerial skills on the part of individual farmers.

The questions to be faced in project evaluation are whether it is more cost effective to deal with these five objectives in isolation from one another and whether the objectives can be achieved more effectively without the establishment of Cameroonian institutions and programs for delivery of the agricultural reforms. The GURC could design individual programs to clear new land, supply fertilizer, irrigation and other land improvement reforms; to distribute new technological devices and methods to farmers; to attempt to increase human resources in agricultural areas through formal or nonformal programs; to continue to develop transportation and marketing infrastructure (either through government or parastatal activity); and to attempt to provide basic management training for farmers through the present extension scheme. But can the desired goals be achieved through these direct GURC programs as efficiently as will be the case with the establishment of a program such as that proposed for UCAD? The answer is most probably not and, if such a multi-program design is attempted, it likely would involve a continued, if not increased, dependence upon foreign human and material resources.

USAID has traditionally used three approaches to diversify and strengthen the agricultural sector of developing nations while simultaneously attempting to enhance small farmer income. These are:

1. Support government efforts to identify the social and individual needs of the rural poor.
2. Assist in efforts to develop systems which link the rural poor to markets, to appropriate technology and to new resources.
3. Strengthen national institutions which produce the technologies and resources necessary to solve the major problems of the rural poor.

In the following section, the individual and collective effects of the USAID/UCAD development project will be reviewed in terms of this USAID policy criteria.

The UCAD approach, as detailed in the individual technical papers and the project proposal, has the advantage of allowing the GURC to achieve its goals in agricultural development and simultaneously to create a continuing Cameroonian source for dealing with new agricultural needs as they arise. The technical papers detail the manner in which the proposed UCAD development program will deal with each of the five goal areas. For the purposes of this paper, the following will summarize the primary effects of the UCAD plan.

1. Land Quality and Quantity -- The UCAD program will train graduates in those skill areas (especially that of rural engineering) which will allow the development of the crops and production technologies which are most appropriate for lands currently under cultivation

(thus increasing land quality) and for the identification, charting and efficient development of presently uncultivated areas (thus increasing the quantity of available agricultural land). Graduates of UCAD, working in governmental, parastatal or cooperative agricultural units, will become the leaders in these developmental activities.

2. Technology -- The impact of the UCAD development program on technology will be twofold. First, the UCAD program will prepare graduates to help identify and implement those state-of-the-art technologies most appropriate for the variety of ecological zones found in the Cameroon. Second, the research activities of the UCAD faculty and students will allow development and testing of new technologies for use by individual Cameroonian farmers, cooperatives, parastatals and other agricultural enterprises.

3. Human Resources -- The UCAD development program will affect the quantity and quality of the human resource component of agricultural activity in the Cameroon through its effects on faculty, students, members of government, parastatal or cooperative extension activities and, most important, individual farmers and farm enterprises. Faculty improvements will occur because of the extensive staff development training activities planned for the project, the formal and nonformal in-service training which will result from the personnel provided under the technical assistance provisions of the project and through the hiring of new and better qualified personnel.

Due to the faculty improvements and the concomitant availability of technical advisors and new equipment and supplies, students at the UCAD will have the opportunity for a greatly enriched educational experience. The restructuring of the curricula along the lines suggested in the project proposal will help ensure that the human and material resources of the institution are exploited to best advantage. This situation will be further reinforced by the improved administrative structure proposed for the institution.

The UCAD program will affect the extension activities of the Ministry of Agriculture and other agencies and organizations both through supplying more qualified graduates for staff and leadership positions in these organizations and through the series of workshops and seminars that are proposed. The latter are especially important in that they allow a forum for UCAD faculty, technical advisors and students to have a direct contact with those individuals who are most responsible for the delivery of the agricultural research findings and technological innovations to the individual farmer.

The effect of the UCAD program on the individual farmer ultimately depends on the implementation of all the precedent improvements noted here. The experimental farm, research and extension activities that the faculty and students will engage in directly must not become the sole, or

even primary, means for aiding farmers. The UCAD staff must have a commitment to outreach and extension programs as their first responsibility or the UCAD development project will have produced a Cameroonian institution which remains alienated from the needs of its own social environment. The location of the University, the commitment of the administrators and GURC representatives, and the careful selection of new staff and of training regimens will help protect the integrity of the institution's mission.

4. Market and Transportation Infrastructure -- The departments of rural engineering and of rural economics should be prepared to play a major role in the identification of infrastructure needs and means of meeting them. By working closely with the government, parastatal and cooperative organizations already active in this work in the Cameroon, the UCAD personnel should become leaders in the design of support systems for the successful transporting and marketing of agricultural products. Without this effort, success in the UCAD programs other work will be of minimal effect.

5. Managerial Skills -- Farm management has been identified as a matter of serious concern within the Cameroon. UCAD graduates should have a direct effect on this in that their employment within parastatal organizations will greatly enhance administrative capacity in that sector. However, the UCAD should develop, as part of its extension related activity, programs to aid individual farmers both to maintain operation of their individual farms and to organize cooperative endeavors where such organizations are justified. The development and use of agricultural credit is another area where the UCAD extension activity could apply its resources effectively.

The above summary suggests the complexity of the process of farmer assistance implicit in the UCAD development process. While this complexity is a crucial factor, the development process promises benefits for the Cameroonian economy and society which are substantial. Two issues remain in the project justification analysis: the design of an implementation system which will assure an extension-oriented university mission and an evaluation of the appropriateness of USAID and GURC expenses. The analysis of the implementation design will help assure that the complexities of the process do not defeat the achievement of the objectives and the financial analysis will provide an accurate estimate of costs so that informed decisions can be made as to the value of the objectives relative to costs. When these areas have been reviewed, the discussion will turn to a final evaluation of the USAID/UCAD programs economic justification.

III. THE ANALYSIS OF PROJECT IMPLEMENTATION ISSUES

In reviewing the technical papers for this project and in discussions with the Cameroonian and expatriate officials with experience in agricultural

development in the Cameroon, twelve major implementation issues have been identified. While the following list is not exhaustive, of course, it does represent those areas of concern which could limit or totally defeat the agricultural development aims of the UCAD project. Some have been anticipated in the implementation strategy sections of the technical papers, but others require more attention than presently has been paid to them. The purpose here is to identify them and to suggest methods for dealing with the possible adverse effects they imply.

A. Student Recruitment

Normally in reviewing a program involving university development, one must also review the possibility of student recruitment success to meet the increased enrollment levels. In the case of UCAD, however, initial development plans concentrate on the changes in institutional mission, faculty expansion and improvement and curricula reform. Student intake--presently at an annual rate of fifty students for the Ecole Nationale Supérieure Agronomique (ENSA), 100 students for the upper level program at the Institut des Techniques Agricoles (ITA) and 150 students for the lower level program at ITA--will remain largely unchanged in the early years of the UCAD program. Present expectations call for the addition of only twenty-five new students a year to the ENSA program and no substantial change in the other areas. This would give the institution a student body of approximately 1,125 students and an annual intake of 325.

Given that approximately 2,000 students apply annually for admission to these institutions, there seems little danger that there will be a need to reduce quality standards in order to attain the present enrollment targets. In fact, the implementation concern here is whether more could not be done to open these programs to a larger number of qualified students. Market demand, especially for graduates of the lower ITA program, is not excessive at the moment, but should be expected to increase with quality improvements in training.

Two conservative proposals for dealing with this concern are to allow attendance by nonscholarship holders and to encourage development of a plan of parastatal scholarships. Both assumptions assume, and appropriately so it would seem, that existing and anticipated limitations on government resources to sponsor students is a major barrier to student expansion. Admission of nonscholarship holders would allow training for students who, either personally or through their employers, are willing to bear a larger share of their educational costs. The parastatal scholarship program would shift a share of educational costs more directly to one of the primary beneficiaries of the UCAD educational investment. In both cases it is assumed that quality standards would be the same as for all other admission decisions.

The student recruitment issue is an important one for the implementation process because otherwise the cost effective nature of the project may be questioned. While it does seem possible to justify both the proposed investments and recurrent cost increases for the present quantity of students, the probable economies of scale suggest that it should be possible to capture the benefits of enrollment expansion without posing a threat to the anticipated quality of the academic and extension programs.

B. Faculty Recruitment

Unlike the case with students, faculty expansion will be intensive during the initial UCAD development period. Fifty-six faculty will receive training and/or join the departmental faculties during the initial six year development period. An additional ten new faculty will come from the present Faculty of Science at the University of Yaoundé or will be recent graduates of that program. Of the fifty-six who will be sent for training under the USAID project, the great majority will be former graduates of the ENSA program.

Although political influences undoubtedly will have an effect on the faculty selection process, there is little immediate concern over the academic ability of the potential Cameroonian nominees. This issue should receive greater attention, however, not with the intention of changing the political input, but so that training resources are invested wisely. After nomination by the GURC, some process of review might be instituted by UCAD faculty or by an administrative committee. As English language proficiency is a major concern for certain candidates, funds have been earmarked for language training in the United States. Given the number of candidates departing each year, there should be consideration given to the alternative of providing intensive language training in Yaoundé before departure. This may prove less expensive and would ensure that candidates have adequate skills in English before travel and educational expenses are incurred.

A final concern in the area of faculty recruitment and training is the effect this process will have on the responsibility of the ENSA and ITA programs to meet placement demands with the government and other traditional employers. Almost all of the new UCAD faculty will represent personnel losses to some Cameroonian employer. The UCAD administration should anticipate any potential problems and work to minimize difficulties of traditional employers of graduates and to inform the employers of the need for these actions. These employers will be important to UCAD in the future in the placement of graduates, and their concerns deserve consideration.

C. Faculty Utilization

An implementation question that must arise in any faculty development program as extensive as that planned for UCAD is the ability of the institution and individual departments to utilize the faculty after training.

The technical papers offer rationales for the amounts and sequencing of training in each department. Inadequate attention, however, has been paid to planning procedures for use of these new faculty members in UCAD's combined program of teaching, research and extension. While it normally may be appropriate to leave such matters to the actual implementation team, the benefit/cost justification for this project depends primarily on the development of faculty and their use in programs which will lead to benefits for individual farmers. Thus, no confidence can be expressed in the project's attainment of its central objective unless faculty utilization concerns are resolved.

Such concerns are partially reduced by the presence of experienced external advisors at UCAD who will help prepare the way for incorporation of returning faculty into the University's activities. This role should be stressed as a primary function of the long-term technical assistance participants and should involve close coordination with department heads and the University administration.

Underutilization will also lead to problems of faculty morale and, in the development stage of a new organization with a new mission, the result can be an institutional environment dominated by faculty grievances and not faculty productivity. Each returning faculty member should have assigned office space and equipment, a clear statement of teaching, research and extension responsibility and an understanding of the personnel rights and responsibilities of university employment. Recruitment and training are necessary but far from sufficient conditions for preparing UCAD faculty to fulfill their new responsibilities.

D. Coordination of Implementation Activities

As presently designed, the UCAD project is made up of a variety of interdependent steps involving faculty recruitment and training, introduction of external technical assistance, the construction of new facilities, purchases of equipment and agricultural support materials, curricula restructuring and initiation of an expanded program of research and extension activities, including professional seminars and workshops. All of these diverse steps must take place within the six year time period of the project and must be carefully sequenced. Technical assistance personnel must help offset any losses of present personnel for training, building construction must be completed so as to receive returning faculty and purchased equipment and supplies and curricula reform must be coordinated with the arrival of new faculty and the assumption of the institution's new responsibilities.

The only criticism that can be made of the present implementation design is that it provides very little flexibility in the various development activities if problems should arise. The plans should be more explicit about contingency arrangements if the implementation schedule should prove too optimistic. This is most crucial in regard to building construction, equipment requisitioning and faculty recruitment and training.

Building construction is obviously the most time-determinant activity of all those proposed in the plan. Underutilization of facilities after construction will be a much less critical problem than that posed by the arrival of faculty and equipment before construction is completed. It would seem proper to index the initiation of all training and commodities purchasing activities to the construction schedule. This would assure that funds would not be expended in advance of a realistic expectation that faculty and equipment will be utilized on arrival (or soon thereafter).

The issue of sequencing is an important one in all projects, of course. The UCAD project, however, is characterized by an extreme degree of interdependence of activities, and for that reason the sequencing of activities should receive more than normal attention. Initial schedules (especially of faculty recruitment and training) appear excessively optimistic and it is the responsibility of project design to anticipate delays and prepare strategies for dealing with them.

E. Equipment Use and Maintenance

The present design of the UCAD assistance project calls for the purchase of \$1.9 million (1980 prices) in equipment. This value will be greatly increased by the effect of inflation over the next six years. Given the lack of a tradition of equipment maintenance and the sensitivity of much of the scientific equipment involved in the UCAD program, it is imperative that implementation plans institute programs of equipment care which will protect the sizeable investment to be made.

The current ENSA budget has no funds allocated for equipment maintenance. Some minor repairs are made by the low level custodial staff or by the faculty, but the new facilities at Dschang will not be sustained by the present minimal level of maintenance effort. The UCAD recurrent budget should include, in addition to the proposed maintenance staff, a special budget for the upkeep of all equipment.

A final concern in this area is for the replacement of equipment as it wears out or becomes obsolete. If the USAID/UCAD project is to be the foundation for a continuing program of excellence rather than create a "golden age" which will rapidly disappear, there must be planning on the part of UCAD officials for schedules of equipment refurbishment or replacement. It is unrealistic, given GURC budget policies and practices, to expect an equipment replacement fund to be financed on an annual basis (related to rates of depreciation), but it is fair to expect that budget projections will reflect the capital expenditure needs for these purposes.

The equipment purchases identified in the technical papers are asserted to represent the minimum costs necessary for UCAD to succeed in its new institutional role. Given that, it is obvious that the failure of UCAD to maintain and replace this equipment can only be an abandonment of those standards upon which USAID involvement is based.

F. Building Maintenance

The aforementioned issues in regard to equipment maintenance and repair are even more serious in the case of buildings and facilities. There is plentiful evidence from earlier externally and internally funded development projects in the Cameroon that one cannot assume that buildings, once constructed, will remain in a condition suitable for their intended purposes. The \$10.9 million construction budget for the Dschang facilities is an enormous commitment on the part of both USAID and the GURC. Protection of that investment is a critical area of concern in the implementation process.

The present project plan calls for technical assistance in this area and for the employment of a superintendent of maintenance and of a ten-person maintenance staff. This is in addition to the continued use of present custodial staff. In addition, it is proposed that beginning in 1984 with the occupation of the main facilities, that a maintenance incentive be provided as part of the grant obligation. This would represent \$375,000 (all figures in 1980 prices) in 1984, \$400,000 in 1985 and \$250,000 in 1986. The GURC would be expected to provide the difference between these amounts and the anticipated building maintenance charges for these years. This should amount to a GURC contribution of \$100,000 in 1985, and \$250,000 in 1986. In the event that actual budget figures for maintenance are less, the USAID grant contribution will be indexed to GURC contributions at the same ratios (4:1 in 1985, and 1:1 in 1986).

It is anticipated that this provision of a maintenance incentive will be adequate to bring forth the desired GURC funding. If not, the project's viability is seriously jeopardized and the UCAD programs of teaching, research and extension will not attain their potential.

G. The New Mission of UCAD

USAID staff and the project planning team members all see the primary justification of USAID participation in terms of the eventual impact of this program on the individual farmers and consumers of the nation. This justification was detailed earlier in this paper. However, there remains some concern as to the degree to which the GURC and the administration and faculty of the institutions will share the sense of priority for this new mission for the university. This does not imply a lack of altruism or sincerity but rather the inevitable uncertainty which arises with the development of a multipurpose institution and the frequent conflict that occurs between the professional goals of faculty, the career objectives of students, and the service functions assigned to the programs.

It is assumed that before funding is granted, commitments will be made by the GURC and the UCAD to emphasize the agricultural development outcomes. However, the implementation staff will have the responsibility of assessing the extent to which the instructional programs of

the university as well as the research and extension work continues to reflect this emphasis. The project planning team anticipates that the careful selection of training institutions in the U.S. will help avoid the alienation from domestic interests which often occurs when students are separated from their home country for an extended period. Still, the implementation team must work to assure that the reward system of the institution is not skewed toward the academic and away from the applied areas of work. It is not the purpose here to apply a pejorative connotation to the term "academic;" what is at issue is the unique service role of this particular institution.

An indication of the potential danger for UCAD is the recurrent discussion of Ph.D. programs for the university. Such programs will create a certain status for the participant faculty but could be counterproductive to the development-oriented aims of the project plan. It is not the prerogative of the external agencies to bar such program expansion, but it should be viewed as a warning of a potential declining commitment to the objectives upon which external assistance was predicated. There should be an attempt to see that rewards of status and recognition are preserved for those faculty and student activities which are supportive of aid to the small farmers and to the poor of the Cameroon.

H. Administrative Leadership

The need for strong and effective leadership in any program of institutional development may seem obvious and yet the lack of such leadership is the most common cause of failure in such activity. UCAD is fortunate in that it possesses a dynamic and politically influential administrator who is generally sympathetic to the project design as it has been developed in the technical papers. The primary concern for the implementation period will be to develop a cadre of administrators, both within the central administration and department heads, who will similarly be supportive of the proposed changes.

Administrative development will be achieved through the provision of technical assistance, training and observation tours and through the design of an administrative plan for the allocation of authority and responsibility. A cooperative work group of technical advisors, administrators and faculty should be designated early in the project to review the proposed plan of operation and to develop the details of the rules and procedures for dealing with academic, financial and personnel issues. A difficult area will be the necessity to balance the appropriate level of departmental autonomy with the requirements for central university control of budgetary and policy matters.

At present, the area of administrative leadership appears to be an area of strength for UCAD rather than of concern. However, the development of the UCAD faculty and facilities will increase the administrative burden substantially and it is unlikely the present administrative structure

will be adequate to deal with the new responsibilities. It is necessary for the administrative capacity of the institution to evolve in advance of the teaching, research and extension capacity. This requires that the new administrative structure be in place by the end of year two and certainly no later than the middle of year three.

I. Cooperation with the Ministries of Agriculture and Livestock

The present relationship between ITA and ENSA and the Ministries of Agriculture and Livestock appears quite supportive, but this may be due in part to fortuitous placement of individual Ministry personnel who are sympathetic to the UCAD development aims. It is vital that UCAD remains sensitive to the need to work closely with the Ministries' staffs, especially those involved in extension delivery activities.

At present the extension program of the Ministries of Agriculture and Livestock suffers from problems in the quantity and quality of personnel actually involved in contact work with farmers and from problems in adequate coordination of activities between the central and regional offices. As with most activities, there are also financial inadequacies (most dramatically in transportation) which limit the success of extension workers in introducing new approaches in rural farm activity. Both as employers of the graduates of UCAD and as deliverers of research/extension developments, the Ministries have a central role to play in the agricultural development program.

The implementation team has the responsibility of establishing and maintaining an active liaison with the two Ministries. This should be done on a structural, rather than personal, level so that the coordination will survive changes in individuals holding the responsible positions. The UCAD faculty has the responsibility of assuring that the "model" extension program prepares students for the real world of extension management in the Cameroon.

J. Other Cooperative Relationships

In addition to the need to link UCAD program activities with the operations of the Government Ministries, the implementation process also requires establishment and maintenance of relations with the parastatal and private agencies active in agricultural development in the Cameroon. The marketing of agricultural products in the Cameroon, with the notable exception of foodstuffs, is controlled by the cooperative organizations such as NWCA and UCCAO for coffee or by parastatal institutions such as ZAPI (coffee and cocoa) and SODECOTON (cotton). Even in the case of foodstuffs, the parastatal organization MIDEVIV has begun to play an important role. The motivation in this last case appears, at least to date, to be as much to control domestic food prices as to aid farmers.

In the fourth five-year plan, considerable support was given for the decentralization of extension work and to the assumption of many extension responsibilities by the cooperatives and parastatals. Again, these organizations will play a role in the development of ENSA both as locations for placement of graduates and as implementors of the UCAD faculty's work in research and extension design.

The joint Cornell University/ENSA study of UCAD development (prepared for USAID in September, 1979) points up a potential difficulty for UCAD cooperation with non-Ministry of Agriculture extension work. As part of the Western Highlands Development Project (funded by IBRD and IDA) UCCAO, the coffee marketing cooperative, is given the responsibility for all extension work in the area. The report notes the UCCAO is a traditional "top-down" organization which draws most of its institutional power from its monopoly control of marketing, and not from internal efficiency of practices or a notable record of service to small farmers.

The question is whether an organization such as UCCAO is interested in cooperating with UCAD or, if interested, is flexible enough to generate an extension program suited to the small farmer objectives of USAID and UCAD. The implementation team needs to explore these issues with all the major actors in extension and marketing work to avoid having the products of the universities' program ignored or misapplied.

UCAD's research responsibilities will have to be coordinated with DGRST (The National Office for Scientific and Technological Research). DGRST has the official government mandate for research, including the area of agricultural research. The UCAD program should avoid redundancy in its research program, of course, but a more important role for UCAD would be to create credibility with the DGRST staff. This would allow coordination of agricultural research activities and also allow UCAD to exploit DGRST's dissemination networks.

K. GURC General Development Policies

The UCAD development program can only succeed to the extent that its new structure and mission have the support of the leaders of the GURC. The development of the fifth five-year plan (1981-1985) will need to be monitored carefully for indications of changes in the general GURC development strategy and the implications of this for the UCAD program. Some of the areas within the plan which would affect UCAD's probability for success are:

1. if the GURC shifts investment activity from the modern productive and agricultural sectors to the social sectors, it will indicate a movement away from a long-range development strategy to one emphasizing short-run social consumption alternatives;

2. if the GURC expands the control of food prices or restricts export of food products so as to increase the domestic supply, this will involve a reallocation of income from rural to urban dwellers and from the agricultural to the nonagricultural populations;

3. if the GURC redirects investments from infrastructure to immediate production alternatives, it will indicate an abandonment of an integrated development strategy for a phenomenological one.

In each of the above cases, the prospects for UCAD would be damaged. The UCAD development approach requires a long-term, farmer-based, integrated strategy which cannot survive if it is set counter to national development objectives. Present indications are favorable for a substantial congruence of UCAD and general GURC development strategies; however, the implementation team must monitor these national-level developments as they occur and prepare responses which protect the basic aims of aiding the farmers and the poor consumers.

L. Absorptive Capacity

The issue of the ability of UCAD and the GURC to accept the capital and recurrent costs of the UCAD development plan has been left for last, not because of its relative importance (it is equal to any other implementation issue in importance), but because it is best dealt with in conjunction with the financial analysis which follows. The format of the following discussion will be to analyze the qualitative plans for each department and the related financial costs. These will be aggregated for the UCAD development program and viewed in terms of expenditure types as well as sources of funds. At the end of this section the issue of absorptive capacity will be undertaken within the context of the present plan for sharing grant and loan obligations between the GURC and USAID.

IV. FINANCIAL ANALYSIS

The USAID/UCAD development program budget has been developed with seven major divisions in addition to the construction and maintenance components. These divisions are:

1. General Administration
2. Directorate of Research and Extension
3. Departments of Agriculture and Basic Sciences
4. Department of Rural Economics
5. Department of Rural Education

6. Department of Rural Engineering

7. University Library

Each of these divisions will be assessed in the following pages in terms of the sources of financing for the proposed expenditure items. Financing of the proposed activity is divided into grant funds (provided by USAID), loan funds (provided by USAID) and recurrent costs (a budgetary responsibility of UCAD specifically or of the GURC generally).

A. General Administration

Table I presents the amounts of proposed expenditure by type and source of financing for each year from fiscal year (FY) 1981 to FY 1986. All figures are in U.S. \$1,000 amounts and in terms of 1980 prices. The expenditure schedules have been developed in cooperation with the project team leader and the USAID project officer.

The first area of expenditures is that of "Technical Assistance and Support." This includes the expatriate advisors provided for the UCAD program (salary, travel and other allowable expenses) as well as support expenses which are related to the technical assistance program. In some divisions of the project small expenditure items such as text books and supplies ("commodities" in the U.S. parlance) are included in this category for the sake of convenience and simplicity of presentation. All expenditures in the Technical Assistance and Support category are proposed for financing by grant funds from USAID.

For the General Administration area, the primary expenditures are for a facilities planner (one person-month in each FY 1981 and FY 1982), a maintenance specialist (two person-months in FY 1984, and one each in FY 1985 and FY 1986) and evaluation team. This last will consist of an eight person team in 1985 and a two person team in 1986. The evaluation is scheduled rather late in the project life because the identifiable products of the program will not become measurable until FY 1983 and FY 1984. FY 1981 and FY 1982 are primarily years of construction, equipment purchasing and training (as will be seen in later tables). The remaining items in the grant financing category are for in-country transportation expenses of long- and short-term consultants and for recruitment transportation. The latter is to be used by UCAD and expatriate staff as part of the effort to recruit greater numbers of women students to the UCAD program.

The "Training" and "Equipment" categories of expenditures are proposed for financing via loan provisions by USAID to the GURC. For the General Administration division, the training expenditures consist of an observational tour in the United States for selected university faculty and maintenance training (for the new superintendent of maintenance) in the U.S. in FY 1983. The equipment budget consists of two

TABLE I
SOURCES OF FINANCING FOR USAID/UCAD DEVELOPMENT PROJECT
GENERAL ADMINISTRATION

	FISCAL YEAR						Source of Financing
	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	
	(\$000 - 1980 Prices)						
<u>TECHNICAL ASSISTANCE</u>							
<u>AND SUPPORT</u>							
Facilities Planner	\$ 11	11					Grant
Maintenance Specialist				22	11	11	"
Evaluation Team					88	22	"
In-Country Transportation							"
Expenses	18	18	18	18	18	18	"
Recruitment Transportation	3	3	3	3	3	3	"
	<u>32</u>	<u>32</u>	<u>31</u>	<u>43</u>	<u>120</u>	<u>54</u>	"
GRANT TOTAL	32	32	31	43	120	54	"
<u>TRAINING</u>							
Observation Tours		10	10	10			Loan
Short-Team Training (in United States	30	30	20	20	10	10	"
Maintenance Training			60				"
<u>EQUIPMENT</u>							
University Vehicles and Motor Pool		250					"
Printing			150				"
	<u>30</u>	<u>290</u>	<u>240</u>	<u>30</u>	<u>10</u>	<u>10</u>	"
LOAN TOTAL	30	290	240	30	10	10	"

TABLE I

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>Source of Financing</u>
<u>PERSONNEL</u>							
Superintendent of Maintenance			8	8	8	8	Recurrent Cost (GURC)
Maintenance Staff				50	50	50	"
Printer				5	5	5	"
	---	---	---	---	---	---	
RECURRENT COST TOTAL	--	--	8	63	63	63	"

NOTE: See Text for details of individual items.

- 19'

major items: the establishment of a motor pool for the university in FY 1982, including purchase of vehicles and maintenance equipment, and the establishment of a printing facility in FY 1983.

The first item, "Personnel," includes the individuals who, because of the USAID/UCAD project, are added to the UCAD payroll as continuing employees. For General Administration, Table I indicates that new staff will consist of a superintendent of maintenance (beginning FY 1983), ten new maintenance staff members (beginning in FY 1984 at an estimated 1980 cost of \$5,000 each) and a printer (also FY 1984 at same estimated cost).

In summary, Table I indicates a six-year expenditure of \$912,000 for development costs and \$197,000 for recruitment expenses in the General Administration area. In terms of financing sources, \$302,000 will come from grants, \$610,000 from loans and \$197,000 from recurrent costs.

B. Directorate of Research and Extension

The proposed Directorate of Research and Extension is designed as an agency for the coordination and support of the research activities carried out within all of the UCAD departments and programs. As Table II indicates, the major expenditure area is in technical assistance and related activities. The research and extension advisor is also proposed as the team leader for the project implementation group. In FY 1982, \$26,000 is provided for pre-arrival language training and \$30,000 for a three-month residence in the Cameroon. FY 1983-1985 figure for this advisor reflects the current budget estimate of \$120,000 for full-time advisory personnel.

In-service training costs relate to two proposed programs: one for university faculty which will be instituted in FY 1985 and another for Ministry of Agriculture personnel which will begin in the same year. Vehicle costs and basic maintenance (POL) and supplies are included in the grant financing category because they are incurred primarily in support of the technical assistance staff.

There will be a \$272,000 expenditure in FY 1983 which is designed to provide the UCAD with the equipment, supplies and livestock necessary for its extension-based research program. All of these costs will be loan financed.

Beginning in FY 1983, several new personnel will be added to the UCAD budget (this timing is predicated on the assumption that approximately one-half of the new facilities will become available in FY 1983 and the remainder in FY 1984). A Director of Research and Extension will be hired at a rate of \$10,000 per annum and Farm Directors will be hired for the extension farms at Bansoa and Djouttitsa (annual salary of \$5,000 each). In addition, three maintenance mechanics will begin work mid-way through

TABLE II
SOURCES OF FINANCING FOR USAID/UCAD DEVELOPMENT PROJECT
DIRECTORATE FOR RESEARCH AND EXTENSION

	FISCAL YEAR						<u>Source of Financing</u>
	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	
	(\$000 - 1980 Prices)						
<u>TECHNICAL ASSISTANCE AND SUPPORT</u>							
Research and Extension Advisor (Team Leader)	\$ --	56	120	120	120	--	Grant
In-Service Training University Faculty	--	--	--	5	5	5	"
Ministry of Agriculture Vehicle	--	--	--	5	10	10	"
POL	--	31	3	2	3	--	"
Miscellaneous Supplies	--	10	2	1	2	1	"
Local Staff:							
Staff Assistant	--	7	15	15	15	15	"
Secretary	--	6	6	6	6	6	"
Office Equipment and Supplies	--	10	2	2	2	2	"
GRANT TOTAL	--	92	148	172	163	39	"
<u>EQUIPMENT/SUPPLIES/LIVESTOCK</u>	--	--	272	--	--	--	Loan
<u>PERSONNEL</u>							
Director of Extension and Research	--	--	10	10	10	10	Recurrent Cost (GURC)
Farm Manager:							
Bansoa	--	--	5	10	10	10	"
Djouttitsa	--	--	5	10	10	10	"
Maintenance Mechnics	--	--	8	15	15	15	"
Secretaries	--	--	3	10	10	15	"
RECURRENT COST TOTAL	--	--	31	55	55	60	"

NOTE: See text for details of individual items.

¹Team Leader (in 1982-1983) will use auto originally provided to Rural Sociology Specialist in Department of Rural Education.

FY 1983. One secretary will be hired in mid-FY 1983, a second for the beginning of FY 1984 and a third for the beginning of FY 1986.

The development costs for the Directorate will amount to \$886,000 and recurrent costs will total \$201,000 over the six-year period. The development costs will be divided into \$614,000 for grant financing and \$272,000 for loan financing.

C. Departments of Agriculture and Basic Sciences

The development of the Departments of Agriculture and Basic Sciences lies at the heart of the new institution's ability to deal with its new mission of research and extension. The development costs in Table III reflect this in that they are the highest for any activity within the USAID/UCAD development project with the sole exception of construction costs.

Technical assistance will be provided in the areas of agriculture and curricula development (three person years), basic sciences (two and one-half person years) and syllabus development (four person-months from FY 1983 to FY 1986). Two vehicles with POL costs are provided for support of these individuals. Grant funds are also provided for the in-service training programs and textbook purchases.

The training program within agriculture and basic sciences is an ambitious one. It is proposed that ten students be sent to the United States each year from FY 1981 to FY 1983. A two and one-half year average is assumed for the duration of M.A. study. In 1983, two students with masters-equivalent training will be sent to complete their Ph.D. training. A two-year study period is assumed for each of these.

Equipment purchases for the agricultural program are budgeted at \$95,000 each for FY 1982 and 1983. For basic sciences, the amounts proposed are \$125,000 for FY 1983 and 1984. All of these, along with the training expenses, have been classified as loan expenditures.

Beginning in FY 1983, the Departments of Agriculture and Basic Sciences will be required to absorb new faculty at the rate of ten per year over the next three years. In FY 1985 the two Ph.D.-trained faculty will also return. Because of the minimal differential in faculty pay between M.A. and Ph.D. holders, all faculty salary recurrent costs are estimated at U.S. \$10,000 per year. Support staff for new faculty are provided for in the proposed budget with secretaries being added at the rate of one in FY 1983, two more in FY 1984, two and one-half more in FY 1985 and one and one-half more in FY 1986, for a final complement of seven new secretaries. Teaching assistants in agricultural and basic sciences will be added as per the technical paper proposals: five in FY 1983, five more in FY 1984 and five more in FY 1985. The total group will be fifteen and pay is estimated at U.S. \$3,000 per year.

TABLE III
SOURCES OF FINANCING FOR USAID/UCAD DEVELOPMENT PROJECT
DEPARTMENT OF AGRICULTURE AND BASIC SCIENCES

	FISCAL YEAR						Source of Financing
	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	
<u>TECHNICAL ASSISTANCE</u>							
<u>AND SUPPORT</u>							
Agriculture and Curriculum							
Development Specialist	\$ --	--	56	120	120	90	Grant
Basic Sciences Specialist	--	--	120	120	60	--	"
Syllabus Development Specialist	--	--	11	11	11	11	"
In-Service Training:							
University Faculty	--	--	10	10	10	5	"
Ministry of Agriculture	--	--	--	10	10	10	"
Vehicles	--	--	32	--	--	--	"
POL	--	--	4	6	6	--	"
Textbooks:							
Agriculture	--	--	15	15	--	--	"
Basic Sciences	--	--	23	12	--	--	"
	-----	-----	-----	-----	-----	-----	
GRANT TOTAL	--	--	271	304	217	116	"
<u>TRAINING</u>							
10 MA Students	280	260	150	--	--	--	Loan
" " "	--	280	260	150	--	--	"
" " "	--	--	280	260	150	--	"
2 Ph.D.	--	--	56	56	--	--	"
<u>EQUIPMENT</u>							
Agriculture	--	95	95	--	--	--	"
Basic Sciences	--	--	125	125	--	--	"
	-----	-----	-----	-----	-----	-----	
LOAN TOTAL	280	635	966	591	150	--	"

TABLE III

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>Source of Financing</u>
<u>PERSONNEL</u>							
10 MA Graduates	--	--	50	100	100	100	Recurrent Cost (GURC)
" " "	--	--	--	50	100	100	"
" " "	--	--	--	--	50	100	"
2 Ph.D. Graduates	--	--	--	--	20	20	"
Secretaries	--	--	5	15	28	35	"
Teaching Assistants	--	--	15	30	45	45	"
	---	---	---	---	---	---	
RECURRENT COST TOTAL	--	--	70	195	343	400	"

NOTE: See Text for details of individual items.

Total development cost for this division of the project will be \$3,530,000. Grants will finance \$908,000 and loan funds \$2,622,000. The recurrent cost in this area will total \$1,018,000 over the six year period of the project and will be at an annual rate of \$400,000 at the end of FY 1986.

D. Department of Rural Economics

The Department of Rural Economics program is much smaller in scale than that of Agriculture and Basic Sciences. The total development budget plus recurrent costs will sum to only \$1,040,000 for the FY 1981-1986 period. As Table IV reveals, the major costs are for external advisory assistance and faculty training.

Three advisors will be brought in to assist the rural economics teaching and research program: a rural economics specialist for two years, a management specialist for one and one-half months and a computer science specialist for two months, one each in FY 1985 and 1986. A vehicle and POL expenses are provided for. The final grant-funded expenses are for in-service training and for textbook purchases.

In FY 1981 and FY 1982, three M.A. students will be sent for training in the United States. In FY 1986, the final project year, two students will begin study programs for the M.S. degree in computer science. It is anticipated that these last students will complete their education under financing from a subsequent assistance program or under direct GURC support. The final loan-financed items in the rural economics category is equipment and supply purchases. These are projected at the amount of \$10,000 for FY 1982 and for FY 1983.

The absorption of faculty costs will begin in FY 1983 and reach a permanent level of \$30,000 per annum in FY 1984 when all six M.A. graduates are scheduled for full time activity. One secretary and two teaching assistants will be employed in FY 1985 and FY 1986, respectively. Recurrent costs will total \$207,000 and will be at an annual rate of \$71,000 by the end of the project. Return of the M.S. graduates will raise recurrent costs to \$91,000 per year in FY 1989.

Total grant financing for the rural economics program will be \$343,000 and loan financing will be \$490,000. Thus, the total development budget for the Department is \$833,000, FY 1981-1986.

E. Department of Rural Education

Although adjustments in forms, amounts and timing of expenses in almost every project division have been modified from the original proposals of the technical papers, only two divisions have been altered significantly. The Department of Rural Education is one of these and the university Library, to be discussed below, is the other.

TABLE IV
SOURCES OF FINANCING FOR USAID/UCAD DEVELOPMENT PROJECT
DEPARTMENT OF RURAL ECONOMICS

	FISCAL YEAR						Source of Financing
	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	
	(\$000 - 1980 Prices)						
<u>TECHNICAL ASSISTANCE</u>							
<u>AND SUPPORT</u>							
Rural Economics Specialist	\$ --	--	60	120	60	--	Grant
Management Specialist	--	--	--	17	--	--	"
Computer Science Specialist	--	--	--	--	11	11	"
Vehicle	--	--	16	--	--	--	"
POL	--	--	2	3	3	--	"
In-Service Training:							
University Faculty	--	--	5	5	5	5	"
Ministry of Agriculture	--	--	--	--	5	5	"
Text books	--	5	5	--	--	--	"
	---	---	---	---	---	---	
GRANT TOTAL	--	5	88	145	84	21	"
<u>TRAINING</u>							
3 MA Students	84	78	45	--	--	--	Loan
" " "	--	84	78	45	--	--	"
2 MS Students (Computer Science)	--	--	--	--	--	56	"
<u>EQUIPMENT/SUPPLIES</u>	--	10	10	--	--	--	"
	---	---	---	---	---	---	
LOAN TOTAL	84	172	133	45	--	56	"

TABLE IV

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>Source of Financing</u>
<u>PERSONNEL</u>							
3 MA Graduates	--	--	15	30	30	30	Recurrent Cost (GURC)
" " "	--	--	--	15	30	30	"
Secretaries	--	--	--	5	5	5	"
Teaching Assistants	--	--	--	--	6	6	"
	---	---	---	---	---	---	
RECURRENT COST TOTAL	--	--	15	50	71	71	

NOTE: See Text for details of individual items.

Reductions have been made in the number of individuals sent for training and in the ratio of Master's to Ph.D. training programs. These changes have been made for two main reasons. First, the proposed scale of the rural education program appeared much larger than was necessary for the extension-based mission of the program and almost certainly exceeded a scale which would be maintained by GURC funds once UCAD assumed full responsibility for financing. Second, the number of Ph.D. candidates was reduced in an attempt to ensure that the priorities of the USAID/UCAD development plan would be maintained. It was exceedingly difficult to rationalize the original proposals for Ph.D. training on a curriculum, research or extension improvement basis. Such training would aid in UCAD relationships with other agencies, perhaps, but this was an inadequate basis for the proposed costs.

Grants funds will provide the Department with three technical advisors: an adult education specialist (two and one-half years), a rural sociology specialist (six months) and a radio/communications development specialist (two months, one each in FY 1985 and FY 1986). Vehicle and POL expenses again are provided from grant funds. An additional \$60,000 is budgeted for in-service training with a unique provision in this budget for special workshops for school teachers. Table V reveals a total grant budget for the Department of Rural Education of \$505,000.

The loan-financed training program consists of six M.S. candidates (two in an agricultural extension specialization) and one Ph.D. student. Equipment purchases under the loan will be for \$5,000 each in FY 1982 and FY 1983. The total loan commitment is for \$519,000.

Recurrent costs related to personnel are handled in the standard manner. Two secretaries will be added, one mid-FY 1983 and one in mid-FY 1984, as support personnel for the new faculty. Total recurrent costs for FY 1981-1986 will be \$246,000.

F. Department of Rural Engineering

The final department which will participate in the USAID/UCAD development activity will be the Department of Rural Engineering. Assistance to the Department follows the (by now) familiar patterns. A rural engineer specialist will be provided for one month in FY 1982 and will begin a full-time, two and one-half year assignment in late FY 1983. The Department will send nine M.A. students for training beginning in FY 1981 and with all training completed in FY 1986. Two teaching assistants and two secretaries are provided as support staff for returning faculty.

Table VI reveals a total development cost of \$1,480,000 for the Department of Rural Engineering. Grant costs of \$411,000 and loan costs of \$809,000 sum to a total development-oriented expenditure of \$1,220,000. The remaining \$260,000 represents the total recurrent cost; annual recurrent cost in the Department will be \$96,000 in FY 1986.

TABLE V
SOURCES OF FINANCING FOR USAID/UCAD DEVELOPMENT PROJECT
DEPARTMENT OF RURAL EDUCATION

	FISCAL YEAR						Source of Financing
	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	
	(\$000 - 1980 Prices)						
<u>TECHNICAL ASSISTANCE</u>							
<u>AND SUPPORT</u>							
Adult Education Specialist	--	--	26	120	120	60	Grant
Rural Sociology Specialist	60	--	--	--	--	--	"
Radio/Communications Specialist	--	--	--	--	11	11	"
In-Service Training							
University Faculty	--	--	5	5	5	5	"
Ministry of Agriculture	--	--	--	--	10	10	"
School Teachers	--	--	--	--	10	10	"
Vehicle	-- ¹	--	16	--	--	--	"
POL	3	--	2	3	3	--	"
Textbooks		5	5	5			
	---	---	---	---	---	---	
GRANT TOTAL	63	5	54	133	159	96	
<u>TRAINING</u>							
2 MA Students	56	52	30	--	--	--	Loan
2 MA Students (Extension)	56	52	30	--	--	--	"
2 MA Studnets	--	56	52	30	--	--	"
1 Ph.D. Student	28	26	26	15	--	--	"
<u>EQUIPMENT</u>	--	5	5	--	--	--	"
	---	---	---	---	---	---	
LOAN TOTAL	140	191	142	45	--	--	"

¹Rural Sociologist will use auto purchased for project planning team.

TABLE V

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>Source of Financing</u>
<u>PERSONNEL</u>							
2 M.A. Graduates	--	--	10	20	20	20	Recurrent Cost (GURC)
2 M.A. Graduates (Extension)	--	--	10	20	20	20	"
2 M.A. Graduates	--	--	--	10	20	20	"
1 Ph.D. Graduate	--	--	--	5	10	10	"
Secretaries	--	--	3	8	10	10	"
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	
RECURRENT COST TOTAL	--	--	23	63	80	80	

NOTE: See Text for details of individual items.

TABLE VI
SOURCES OF FINANCING FOR USAID/UCAD DEVELOPMENT PROJECT
DEPARTMENT OF RURAL ENGINEERING

	FISCAL YEAR						Source of Financing
	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	
	(\$000 - 1980 Prices)						
<u>TECHNICAL ASSISTANCE</u>							
<u>AND SUPPORT</u>							
Rural Engineering Specialist	\$ --	11	56	120	120	30	Grant
In-Service Training:							
University Faculty	--	--	10	10	10	10	"
Ministry of Agriculture	--	--	--	--	--	10	"
Vehicle	--	--	16	--	--	--	"
POL	--	--	2	3	3	--	"
Text books	--	--	10	--	--	--	"
	--	11	94	133	133	50	
GRANT TOTAL	--	11	94	133	133	50	
<u>TRAINING</u>							
3 M.A. Students	84	78	45	--	--	--	Loan
2 M.A. Students	--	56	52	30	--	--	"
" " "	--	--	56	52	30	--	"
" " "	--	--	--	56	52	30	"
<u>EQUIPMENT</u>	--	94	94	--	--	--	"
	--	94	94	--	--	--	
LOAN TOTAL	84	228	247	138	82	30	"

TABLE VI

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>Source of Financing</u>
<u>PERSONNEL</u>							
3 M.A. Graduates	--	--	15	30	30	30	Recurrent Cost (GURC)
2 " "	--	--	--	10	20	20	"
" " "	--	--	--	--	10	20	"
" " "	--	--	--	--	--	10	"
Teaching Assistants	3	3	6	6	6	6	"
Secretaries	--	--	5	10	10	10	
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	
RECURRENT COST TOTAL	3	3	26	56	76	96	"

NOTE: See text for details of individual items.

G. University Library

The second program in which significant changes have been made from the proposals of the technical paper is the University Library. Even with these reductions, the library expenditures are second only to those of the Agriculture and Basic Sciences departments. The rationale for cost reduction in this area is primarily related to the reluctance of UCAD officials to commit themselves either to support the necessary loan obligation to create the library collections or to the maintenance required for them in future years.

Library use is not as characteristic of Cameroon higher education as in the United States and until the proposed curriculum reforms are achieved, it is unrealistic to expect large changes in this behavior. The budget which appears in Table VII is a conservative, but apparently satisfactory one to USAID and UCAD officials. Since most reductions were made in costs proposed for FY 1984-1986, it will be possible to plan expenditures for post-1986 which will compensate for any weaknesses in the library program revealed during its early years of operation.

The grant-funded technical assistance program is timed to coincide with the expected design and construction schedule. Two (rather than the originally proposed three) librarians will be sent to the U.S. for training under loan funding.

A major item in the University Library budget is commodities. In FY 1983, \$300,000 will be expended to establish a core collection of books, journals, audio-visual materials, etc., for use by UCAD faculty and students. An annual expenditure of \$150,000 is proposed for FY 1984-1986 to supplement the core collection. The \$377,000 expenditure in FY 1983 will provide the institution with the equipment and furniture necessary for the proposed library building. Even with reductions, the number of new personnel needed for the facility is substantial.

Development-oriented costs will consist of \$405,000 in grant financing and \$1,239,000 in loan financing. When combined with the \$171,000 recurrent cost effect, the FY 1981-1986 expenditures on the University Library will amount to \$1,815,000 (before inflation or contingency provisions).

H. Summary of UCAD Development Expenditures and Recurrent Costs

Table VIII summarizes the early tables and presents, by grant, loan or recurrent cost financing, the effect of the different divisions on total cost of the proposed assistance effort. Four categories of costs which were not allocated by division, and therefore did not appear in Tables I-VII, are included in Table VIII. These are construction costs, maintenance expenses, utility costs and interest payments on the proposed loan.

TABLE VII
SOURCES OF FINANCING FOR USAID/UCAD DEVELOPMENT PROJECT
UNIVERSITY LIBRARY

	FISCAL YEAR					Source of Financing	
	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>		<u>1986</u>
	(\$000 - 1980 Prices)						
<u>TECHNICAL ASSISTANCE</u>							
<u>AND SUPPORT</u>							
Library Advisor	--	--	56	120	--	--	Grant
Library Building Specialist	11	--	--	--	--	--	"
Bibliographic Searcher	--	--	18	--	--	--	"
Audio-Visual Specialist	--	--	--	11	11	--	"
In-Service Training:							
University Faculty	--	--	--	3	3	3	"
Ministry of Agriculture	--	--	--	--	2	2	"
Vehicle	--	--	16	--	--	--	"
POL	--	--	2	3	--	--	"
Supplies	--	--	12	12	15	--	"
	-----	-----	-----	-----	-----	-----	
GRANT TOTAL	11	--	104	149	31	5	"
 <u>TRAINING</u>							
Libr / Director	--	28	28	--	--	--	Loan
Librarian/Audio- Visual Specialist	--	--	28	28	--	--	"
 <u>COMMODITIES</u>							
Core Collection	--	--	300	--	--	--	"
Books, Journals, etc.	--	--	--	178	150	150	"
Library Furniture	--	--	212	--	--	--	"
" Equipment	--	--	165	--	--	--	"
	-----	-----	-----	-----	-----	-----	
LOAN TOTAL	--	28	733	178	150	150	"

TABLE VII

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>Source of Financing</u>
<u>PERSONNEL</u>							
Library Director	--	--	--	10	10	10	Recurrent Cost (GURC)
Librarian/Audio- Visual Specialist	--	--	--	--	10	10	"
Secretaries	--	--	--	8	8	8	"
Junior Clerks	--	--	--	8	16	16	"
Senior Clerks	--	--	--	10	10	10	"
Audio-Visual Repairmen	--	--	--	5	5	5	"
Audio-Visual Technician	--	--	--	--	4	4	"
Microfilmer	--	--	--	--	--	4	"
	---	---	---	---	---	---	
RECURRENT COST TOTAL	--	--	--	41	63	57	"

NOTE: See text for details on individual items.

TABLE VIII
 USAID/UCAD DEVELOPMENT PROJECT EXPENDITURES
 SUMMARY BY EXPEDITURE TYPE AND YEAR

	FISCAL YEAR						TOTAL 1981-1986
	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	
	(\$000)						
<u>GRANT FINANCING</u>							
General Administration	\$ 32	32	21	43	120	54	
Research and Extension	--	92	148	172	163	39	
Agricultural Basic Sciences	--	--	271	304	217	117	
Rural Economics	--	5	88	145	84	21	
Rural Education	63	5	54	128	159	96	
Rural Engineering	--	11	94	133	133	50	
Library	11	--	104	149	31	5	
Maintenance Incentive	--	--	--	375	400	250	
	\$ 106	145	780	1449	1307	631	\$ 4,418
10% Contingency Expense	11	15	78	145	131	63	
	\$ 117	160	858	1594	1438	694	4,861
PRESENT VALUE SUB-TOTAL							
Inflation	11	20	257	672	797	486	
	\$ 128	190	1,115	2,266	2,235	1,180	7,114
TOTAL (\$ Current)							
Indirect Cost (.316)							2,248 ¹
							\$ 9,362
							GRANT TOTAL

¹Assumes a rate of .316 applied to inflation value of all grant financing items.

TABLE XIII

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>TOTAL</u> <u>1981-1986</u>
<u>LOAN FINANCING</u>							
General Administration	\$ 30	290	240	30	10	10	
Research and Extension	--	--	272	--	--	--	
Agriculture and Basic Sciences	280	635	066	591	150	--	
Rural Economics	84	172	133	45	--	56	
Rural Education	140	191	143	45	--	--	
Rural Engineering	84	228	247	138	82	20	
Library	--	28	733	178	150	150	
Construction	543	2,173	2,173	543	--	--	
	---	---	---	---	---	---	
SUB-TOTAL	\$1,161	3,717	4,907	1,570	392	246	\$ 11,993
10% Contingency	116	372	491	157	30	25	
	---	---	---	---	---	---	
PRESENT VALUE SUB-TOTAL	1,277	4,089	5,398	1,727	431	271	\$ 13,193
Inflation	116	781	1,619	728	239	189	
	---	---	---	---	---	---	
TOTAL (\$ Current)	\$1,393	4,870	7,017	2,455	670	460	\$ 16,865

TABLE XIII

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>TOTAL</u> <u>1981-1986</u>
<u>RECURRENT COSTS</u>							
TO UCAD:							
General Administration	--	--	8	63	63	63	
Research and Extension	--	--	31	55	55	60	
Agricultural Basic Sciences	--	--	70	195	343	400	
Rural Economics	--	--	15	50	71	71	
Rural Education	--	--	23	63	80	80	
Rural Engineering	3	3	26	56	76	96	
Library	--	--	--	41	63	67	
Maintenance	--	--	--	--	100	250	
Utilities	--	--	117	334	334	334	
	---	---	---	---	---	---	
PRESENT VALUE SUB-TOTAL	3	3	290	857	1,185	1,421	\$ 3,759
Inflation	--	1	96	398	723	1,094	
	---	---	---	---	---	---	
CURRENT SUB-TOTAL	3	4	386	1,255	1,908	2,515	\$ 6,071
TO GURC:							
Interest Payments on Loan ²	28	125	266	315	328	337	
TOTAL - UCAD/GURC	31	129	652	1,570	2,236	2,852	\$ 7,470

²Interest payments based on an assumption of loan terms as discussed in text.

Under Grant Financing in Table VIII, there is an expenditure item termed "maintenance incentive." The proposal is (based on the earlier discussion of maintenance problems in the Cameroon) to have the grant fund assume responsibility for the initial year's (FY 1984's) total maintenance cost and to share the cost of maintenance (estimated at \$500,000 in 1980 prices for buildings and equipment) thereafter between grant funds and UCAD recurrent costs. In FY 1986 this will result in an equal responsibility between the two sources.

The original construction estimate for the UCAD facility was \$10,864,000. It has been proposed that the GURC assume responsibility for one-half of this construction cost, either by financing from its own capital development resources or in cooperation with other donors. Obviously, a building by building allocation of construction responsibility must be made but at the time of this writing it has not been done. Thus, the \$5,432,000 allocation under Loans in Table VIII represents only an estimate. The construction costs are expected to be incurred at a schedule of ten percent in FY 1981, forty percent in each FY 1982 and FY 1983 and the final ten percent in FY 1984.

In the recurrent cost section of Table VIII, utility expenses have been introduced. The present total utility expense for ENSA and ITA is \$117,000 per year. The combined UCAD facilities should generate approximately twice that amount in terms of annual utility expenses. The figures for utility cost assume that full use of buildings will not be available until FY 1984.

To estimate the cost to the GURC of the interest payments related to the USAID loan proposal, the following loan terms were assumed:

1. interest will be payable at two percent for the first ten and three percent for the next thirty years;
2. interest payments only will be required for the first ten year period; and
3. interest will be charged only on the amount of the loan expenditures actually incurred up to that year.

The outstanding loan amounts were calculated as follows:

FY 1981	-	\$ 1,393,000
FY 1982	-	6,263,000
FY 1983	-	13,280,000
FY 1984	-	15,735,000

FY 1985 - \$ 16,405,000

FY 1986 - 16,865,000

Also added to Table VIII are amounts for contingency expense and expected inflation. Contingency cost has been set at a constant ten percent of 1980 price amounts. This implies a current dollar contingency amount of less than 2.5 percent in FY 1986 because of the effect of inflation. Inflation has been estimated at a rate of ten percent per year. Because of compounding, this results in 1980 prices being equal to the following amounts.

1980	-	\$ 1.00
1981	-	1.10
1982	-	1.21
1983	-	1.33
1984	-	1.46
1985	-	1.61
1986	-	1.77

Thus, over the six-year project period, inflation will have a dramatic effect on the costs of project activities.

In summary, Table VIII indicates that the total budget for grant financing will be \$9.3 million. \$2,248,000 of that total represents indirect cost recovery by the implementing institution. Total loan financing will equal \$16.8 million. The UCAD budget for recurrent costs will assume an estimated \$6.1 million dollars and GURC interest payments will total almost \$1.4 million. The total UCAD/GURC recurrent costs for FY 1981-1986 will be \$7,454,000. In addition, the GURC (or external donor) will finance the residual construction cost of \$5,432,000.

1. Absorptive Capacity: UCAD

The budget for the University Center of Agriculture, Dschang, in 1979/1980 totaled 895 million CFA or U.S. \$4.365 million. Of that total, 302 million CFA (U.S. \$1.473 million) represented scholarships and grants to students. The residual operating budget of U.S. \$2.892 million covered general services, joint ENSA/ITA expenses and the individual institutional budgets for ENSA and ITA.

In anticipation of a 922.5 million CFA (U.S. \$4.5 million) operating budget in FY 1986, and connecting the budget anticipation for annual

ten percent inflation, the operating budget for UCAD in FY 1986 should be U.S. \$7.965 million. The effect of inflation on present costs will lead to an expenditure obligation of U.S. \$5.119 million (\$2.892 million x 1.77). The difference between expected budget and the inflated value of the 1979/1980 budget is U.S. \$2.515 million that is projected as the recurrent cost effect of the UCAD development project.

It would appear that, given the commitment to the UCAD project by GURC officials, that any marginal short falls in budget would be compensated for the increases in analysis of absorptive capacity inevitably depends upon the success of the investment project in achieving its objectives. The only changes for UCAD would be if it should perform in such a way that it would lose its credibility with its own government. The project implementation team has the responsibility to guard against that eventuality.

J. Absorptive Capacity: GURC

Based upon the USAID commissioned study by Aklog Birara of the GURC's absorptive capacity for foreign assistance and debt repayment obligations, there appears little at stake in terms of the ability of the GURC to absorb the capital expenditure obligation for construction or the recurrent debt service costs of the USAID loan. Based upon projections of revenue and expenditures of the GURC for the 1981-1985 term, Birara (p. 88) notes that:

" . . . local counterpart/recruitment financing is not a major constraint in Cameroon. Furthermore, balance of payments and debt service problems are more than likely within the capacity of the Cameroon economy to absorb provided that substitutes in semi-processed and general agricultural commodities are undertaken and provided that Cameroon resorts to concessionary rather than commercial loans."

Given that the UCAD programs entail potential benefits in the very areas of agricultural reform Birara recommends and given the liberal terms proposed for the USAID loan, the GURC should have little difficulty in integration of either recurrent costs or debt service into the expected development of its budget.

Another comment by Birara is especially relevant to the UCAD endeavor. It relates to the implementation issues discussed earlier in this paper. Birara concludes his paper by noting that:

" . . . the problem that is foreseen in this research of recurrent cost absorption is not financial inadequacy to cover recurrent costs but institutional, administrative, technical manpower and general infrastructural constraints that will make rural development extremely difficult but not impossible."

The UCAD project is noteworthy because its primary purpose is to help reform the constraints on rural development cited by Birara.

V. SUMMARY OF INVESTMENT RATIONALES AND FINAL CONCLUSIONS

If one accepts the joint goals of aiding rural development, assisting small farmers and increasing agricultural production, the UCAD development project, even at the substantial costs estimated here, is clearly a cost-effective endeavor. In fact, there is no obvious alternative for the simultaneous achievement of these objectives. Individual achievement of these objectives would undoubtedly be much more expensive.

With the impossibility of generating objective valuations of the multiple incidence of the benefits of this project, there is no simple "proof" which can be presented as to the benefit/cost issue. Ultimately, this is a determination which must be made by the GURC. However, there is strong qualitative support (as presented earlier in this paper) that the eventual net benefits of the project (even after adjusting for the temporal difference in benefits incidence as compared with costs incidence) more than justify its promotion.

A final consideration is that of the special value of creating a Cameroonian institution for the direction of agricultural research and direction of agricultural research and extension reform. By doing this, the USAID assistance represents a large term investment in Cameroonian independence and self-sufficiency. This is the very best form of investment one can make in development assistance.

Great care will have to be taken in the implementation of the project plan. Many uncertainties exist--although the project is not revealed by rudimentary sensitivity analysis to be subject to any but dramatic changes in inflation or other determinant factors. Given strong project management most problems should be subject to anticipation and avoidance or minimization. If strong management is created and dramatic economic disruption not encountered, the UCAD development project appears as an excellent investment in the economy and the people of the Cameroon.

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