

690 0081
 PD-1146-166

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT PAPER FACESHEET		TRANSACTION CODE <input type="checkbox"/> A ADD <input type="checkbox"/> C CHANGE <input type="checkbox"/> D DELETE	PP 2 DOCUMENT CODE 3
3 COUNTRY/ENTITY SWAZILAND		4 DOCUMENT REVISION NUMBER <input type="checkbox"/>	
5 PROJECT NUMBER (7 digits) [690-0081]	6 BUREAU OFFICE A SYMBOL AFR B CODE [1]	7 PROJECT TITLE (Maximum 40 characters) [UNIVERSITY COLLEGE OF SWAZILAND]	
8 ESTIMATED FY OF PROJECT COMPLETION FY [8] [2]		9 ESTIMATED DATE OF OBLIGATION A INITIAL FY [7] [8] B QUARTER [2] C FINAL FY [8] [1] (Enter 1, 2, 3, or 4)	

10. ESTIMATED COSTS (\$000 OR EQUIVALENT \$1 -)

A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B FX	C L C	D TOTAL	E FX	F L/C	G TOTAL
AID APPROPRIATED TOTAL	320	676	996	862	1,196	2,058
(GRANT)	320	676	996	862	1,196	2,058
(LOAN)						
OTHER U.S. 1						
OTHER U.S. 2						
HOST COUNTRY		200	200		737	737
OTHER DONOR(S)						
TOTALS	320	876	1,196	862	1,933	2,795

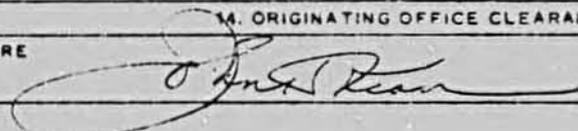
11. PROPOSED BUDGET APPROPRIATED FUNDS (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. 1ST FY <u>78</u>		H. 2ND FY <u>79</u>		K. 3RD FY <u>80</u>	
		C GRANT	D LOAN	F GRANT	G LOAN	I GRANT	J LOAN	L GRANT	M LOAN
(1) 011	600	0630		996		815		49	
(2)									
(3)									
(4)									
TOTALS				996		815		49	

A. APPROPRIATION	N. 4TH FY <u>81</u>		O. 5TH FY		LIFE OF PROJECT		12. IN-DEPTH EVALUATION SCHEDULED MM YY 01 79
	P GRANT	Q LOAN	R GRANT	S LOAN	T GRANT	U LOAN	
(1) 011	198				2,058		
(2)							
(3)							
(4)							
TOTALS	198				2,058		

13. DATA CHANGE INDICATOR. WERE CHANGES MADE IN THE PID FACESHEET DATA, BLOCKS 12, 13, 14, OR 15 OR IN PRP FACESHEET DATA, BLOCK 12? IF YES, ATTACH CHANGED PID FACESHEET.

1 - NO
 2 - YES

14. ORIGINATING OFFICE CLEARANCE SIGNATURE  TITLE Regional Development Officer		15. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION DATE SIGNED MM DD YY 01 05 78
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PD-AAA-116

APPENDIX M

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT IDENTIFICATION DOCUMENT FACESHEET

TO BE COMPLETED BY ORIGINATING OFFICE

1. TRANSACTION CODE

C
A = ADD
C = CHANGE
D = DELETE

PID

2. DOCUMENT CODE 1

3. COUNTRY/ENTITY

SWAZILAND

4. DOCUMENT REVISION NUMBER

1

5. PROJECT NUMBER (7 DIGITS)

690-0081

6. BUREAU/OFFICE

A. SYMBOL B. CODE
AFR

7. PROJECT TITLE (MAXIMUM 40 CHARACTERS)

UNIVERSITY COLLEGE, SWAZILAND

8. PROPOSED NEXT DOCUMENT

A. 2 = PRP
 3 = PP

B. DATE MM YY
11 07 77

10. ESTIMATED COSTS

(\$000 OR EQUIVALENT, \$1 =)

FUNDING SOURCE		2465.89
A. AID APPROPRIATED		1862
B. OTHER U.S.	1.	
	2.	
C. HOST COUNTRY		737
D. OTHER DONOR(S)		
TOTAL		2599

9. ESTIMATED FY OF AUTHORIZATION/OBLIGATION

a. INITIAL FY 78 b. FINAL FY 82

11. PROPOSED BUDGET AID APPROPRIATED FUNDS (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. FIRST FY 78		LIFE OF PROJECT	
		C. GRANT	D. LOAN	F. GRANT	G. LOAN	H. GRANT	I. LOAN
(1) PH	600	0630		890		1862	
(2)							
(3)							
(4)							
TOTAL				890		1862	

12. SECONDARY TECHNICAL CODES (maximum six codes of three positions each)

13. SPECIAL CONCERNS CODES (maximum six codes of four positions each)

14. SECONDARY PURPOSE CODE

15. PROJECT GOAL (MAXIMUM 240 CHARACTERS)

To assist Swaziland in responding effectively to national development needs through a program of human resources development at the middle and higher manpower levels.

16. PROJECT PURPOSE (MAXIMUM 480 CHARACTERS)

To increase the capacity of the University College of Swaziland to meet mid-level manpower training needs by strengthening the Division of Extra-Mural Studies (DEMS) as the institutional linkage between university resources and GOS agencies working to meet national development goals.

17. PLANNING RESOURCE REQUIREMENTS (staff/junits)

18. ORIGINATING OFFICE CLEARANCE

Signature

Title

Date Signed

MM DD YY

19. DATE DOCUMENT RECEIVED AND AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION

MM DD YY

(III)

APPENDICES

- A Logical Framework
- B List of Commodities
- C Request for Waivers
- D Economic Analysis
- E Statistical Tables
- F Job Description for U.S. Technical Specialists
- G Diploma in Adult Education
- H Diploma in Management
- I DEMS Budget - 1978/1982
- J Statutory Check List
- K Project Authorization and Request for Allotment of Funds
- L Initial Environmental Examination
- M Project Identification Facesheet

Part I. Summary and RecommendationsA. Recommendations

Authorization of a grant not to exceed \$1.95 million including the following waivers and approvals:

1. A procurement source and origin waiver from AID Geographic Code 000 (U.S. only) to Code 935 for procurement of construction materials.
2. Waiver of the source and origin requirements (U.S. only) of FAA Section 636(i) to allow the purchase of six project vehicles and one project bus from AID Geographic Code 935.
3. Approval to deviate from the policy expressed in AID Handbook 11, Chapter 2, which limits employment of third country nationals for AID-financed construction work to 20 percent of the non-local work force.

B. Description of the Project

This project will increase the capacity of the University College of Swaziland (UCS) Division of Extra Mural Services to meet middle-level training needs in Swaziland. It will provide eight man years of U.S. technical expertise, five man years of participant training, books and equipment to support the DEMS instructional program, and will finance the construction of a classroom block consisting of three classroom/laboratories, a 96 bed hostel, and three staff houses. The assistance will also include ten man months of short-term consultant services.

This project has been designed to provide the technical and financial resources necessary to upgrade and expand DEMS programs in Swaziland. These are programs to train Swazis to fill critical middle-level manpower positions in the public and private sectors, the project is technically sound and can be implemented by any of many U.S. institutions with U.S. and overseas experience in adult education and university outreach programs. The project has been prepared in close collaboration with the government of Swaziland and the University College of Swaziland.

C. Summary Findings

The economic analysis reports that not only does investment in university education in Swaziland look attractive relative to the return of (university education) elsewhere, and relative to the return on other investment in Swaziland, but investment in university education through DEMS appears to be extremely attractive. The project's I.R.R. is estimated at 85%.

The social analysis indicates that there are no major social/cultural constraints to project success. The

project will directly benefit the large number of Swazis with limited secondary but no university education and will alter the shape of DEMS by gearing it toward adult educators and other middle level personnel who would therefore be able to provide services to those living in rural areas. It would also orient university staff and students towards dealing with the practical development needs of the nation's poor majority.

The financial analysis concludes that GOS can provide the proposed counterpart contribution to the project without undue strain and will have the financial resources to assume recurrent costs for an expanded DEMS program when AID assistance terminates.

The project meets all applicable statutory criteria. Adequate plans, specifications and cost estimates are available and a 611(a) certification has been made by REDSO/EA engineers.

The Initial Environmental Examination concludes that the environmental impact of the added buildings and presence of additional students will be very minimal and justifies a recommendation for a Negative Environmental Determination.

Part II. Project Background and Detailed Description

A. BACKGROUND AND SETTING

1. National Development Plans

Swaziland is now coming to the end of the term of its Second National Development Plan (1973 - 1977) and preparing to enter into the Third plan period (1978 - 1983). The Third National Development Plan has not yet been issued, so the second Plan is still the official source of information on development goals.

The two broad goals of the second Plan are "to promote the widespread participation of the Swazi people in development in order to improve their general level of living and quality of life; and to achieve a greater measure of independent control over the economic affairs of the nation". In furtherance of these over-riding objectives the Plan is aimed at the transformation of traditional agriculture; of improving the quality and quantity of manpower through education and training; continued localization; further development of political and economic institutions; extension of social services; geographically balanced development; and diversification of external economic relations.

(Source: Second National Development Plan, page 15).

That part of the Plan concerned with education and human resource development goals indicates the following objectives:

- a. A general restructuring of the school system to raise the quality of instruction and to change orientation to serve economic development especially in rural development activities;
- b. Extension of education and training to as much of the population as possible through expansion of the formal and non-formal systems, as well as greater utilization of informal means of education.
- c. Development of a variety of post school education and training programs to hasten the process of localization;
- d. Higher quality of school education and reduction in wastage;
- e. Development of systems of nonformal education and training for youths and adults in direct relation to rural development objectives;
- f. Expansion of facilities for higher education and vocational training to meet manpower requirements. (Source: Second National Development Plan, page 153).

Objectives c and f above point to expansion of higher education. All of the 6 objectives relate directly or indirectly to expansions of the programs carried out by DEMS.

2. Education/Human Resource Development Sector Needs.

Swaziland has a formal educational system based on 7 years of primary education and a three year high school program leading to a Junior Certificate. 2 years of Senior Secondary School qualify a student to sit for the Cambridge School Certificate ("O" level). The "O" level School Certificate, with a second class pass or better, is generally required for admission to the University.

In 1975, it was estimated that 60% of the 6-12 age group were enrolled in primary school. There were 89,528 primary students of whom 6,218 earned the primary certificate. The Government has set a goal of Universal Primary education by 1985. UNESCO figures indicate that 10.46 pupil years are required to produce one graduate, an apparent efficiency rate of 67%.

In 1975, there were 16,227 pupils in the secondary schools. The last year of the secondary school had 1,154 students enrolled. In 1975, 2,400 students earned the Junior Certificate, and 415 earned the Senior Certificate.

In general the manpower situation in Swaziland is characterized by adequate supplies of unskilled and semi-skilled labor, but substantial shortages of middle and high level technical and managerial manpower. These higher level positions are filled

by expatriates, or are left unattended or filled by unqualified Swazis. In spite of the objective of "localization" embodied in the Second National Development Plan 1973-1977, requests from the various government ministries for permission to hire expatriates grew throughout the plan period. In the public services approximately 400 - 500 expatriates are employed. Highly skilled positions are held predominately by white expatriates. A Financial and Statistical Analysis of Swaziland's Education System With Projections to 1985, a document issued by the Ministry of Education in 1977, shows 311 of 524 qualified secondary school teachers show a substantial, although declining, role for expatriates in secondary education through 1981. The dominance of teaching posts at the University College of Swaziland (UCS) by expatriates is even more pronounced. Expatriates dominate the private sector as well. The number of non citizens employed there is estimated at 2000. Expatriates have recently been estimated at 5% of the employed labor force in the modern sector, receiving 24% of the wage bill. In 1974, 36% of professional and technical jobs, 58% of administrative jobs, and 42% of skilled jobs were held by expatriates.

Localization of the Swaziland economy has not kept pace with the rapidly growing modern sector, now producing 80% of GDP, and with the expanding demand for labor for that sector, the modern sector's needs are easily satisfied locally at the unskilled level but are inadequately met by Swazi manpower at middle and high levels of managerial and technical skill. The manpower problem implicit in these statistics is compounded by rapid, remedial change called for in current pronouncements from the Deputy Prime Minister's office demanding complete localization by 1981.

3. University Development Plans.

Long range plans for higher education in Southern Africa were disrupted in 1975 when the Government of Lesotho pulled out of the University of Botswana, Lesotho and Swaziland, (UBLS) leaving the other two nations to fall back on their own resources for university education.

The Swaziland campus at Kwaluseni which had offered the first two years of university education as part of UBLS, and the Luyengo campus, which had been UBLS's agricultural college, were incorporated in 1976 into the University of Botswana and Swaziland's (UBS) University College of Swaziland. The Ministry of Education recognised that the sudden devolution of the University would require a shift in its budget, at the expense of primary and secondary education. The Government decided nonetheless to transform its campuses into a national university, in a major effort to maintain the level of higher education reached in the 3-country university program.

The 10-year development plan, The University of Botswana and Swaziland Development Plan, 1976/1977 - 1985/1986, calls for a gradual separation of the university into Swaziland and Botswana universities. The Plan states that the development of the two universities will be firmly guided by the following aims:

- a. To meet the manpower requirements of the two countries;
- b. To protect the academic soundness and acceptability of teaching programs.
- c. To avoid duplication of courses and encourage complementarity of teaching facilities and programs on each campus;
- d. To achieve a fair measure of cost-efficiency and cost-effectiveness on each campus;
- e. To achieve approximate balance of students on each campus;
- f. To keep costs, especially recurrent costs, at a level which the two countries can afford. (See page 14 of the Plan).

In support of the fledgling University of Botswana and Swaziland, foreign donor agencies met in Brussels in November 1976, to learn more about the university's priority needs and to pledge funds accordingly. These funds were to be used almost exclusively to cover costs of capital expansion, especially facilities and equipment. In addition, certain donors, mainly the United Kingdom have agreed to continue to provide faculty for UBS.

4. The Division of Extra-Mural Services (DEMS).

In August, 1977, the University College of Swaziland began its second academic year. It has five faculties: Humanities, Professional Studies, Science, Agriculture and Education. The Division of Extra-Mural Services (soon to be renamed The School of Continuing Education) is modelled on a similar university component of UBLS, called the Centre for Adult Learners; it is intended to extend university programs to adults who are not full-time university students. At present, most DEMS courses are on a level equivalent to a U.S. Junior College.

The Division of Extra-Mural Services (DEMS) is a unit of the University College of Swaziland, on the same level as a Faculty. The Director of DEMS is a member of the University College Academic Board. The DEMS program is guided by a Board of Studies which includes representations from government, the private sector, and University Faculties.

DEMS is closely related to the Faculty of Education. The Faculty of Education has outreach responsibilities similar to those of DEMS, but in more limited areas. The Faculty is responsible for teacher in-service training courses, for placement of students in outlying schools for practice teaching and in conducting the pre-entry science courses for potential University College students. DEMS staff members teach courses in the

Faculty of Education, and Education Faculty members participate in the design and presentation of several DEMS courses, particularly those for the Diploma in Adult Education.

The Division of Extra-Mural Services (DEMS) is the focus of this Project. Since its inception in 1964 as the adult education unit of UBLS, this arm of the university in Swaziland has had sporadic success, depending primarily on the ability of the persons on hand who took responsibility for its programs, and on the particular orientation of those individuals. During the past 15 months DEMS has been headed by an East African expatriate who has built up both its organizational structure and a variety of outreach programs. The University has established three professional staff positions in DEMS; one of the other two is presently filled by a Swazi on leave, and the third is vacant.

The Rector of the University College of Swaziland has stated that he wants to see the University become an institution that serves the broader public of Swaziland rather than an isolated group of full-time resident students. In keeping with his concern, he has given his support to DEMS and has sought outside funding for its programs.

It appears now that if DEMS is to achieve its potential role as a viable institution linking the University to the broader community of Swazi citizens, it must be strengthened to avoid the coming and going of expatriates who direct its programs during short periods of time, improved facilities and expanded programs.

Thanks to the efforts of its current Director, DEMS is well advertised within the University and among the various Ministries and organizations engaged in adult education. This seems to be an opportune time to shape the character and role of the University in adult education by taking advantage of the current respected status of DEMS and strengthening its institutional base.

In its advertising of course offerings for 1977/1978, DEM's describes a variety of courses, grouped here according to the level of academic achievement:

- (1) Courses designed exclusively to help students pass their Cambridge/London Overseas Examinations* ("O" levels), including English, Mathematics, geography and science.

* The Cambridge/London overseas certificate (COSC) is approximately equivalent to a U.S. high school diploma. A certificate (beyond the COSC) indicates about one year's work in post-secondary school, and a diploma about two year's work (the equivalent of an A.A. junior college degree). Four years of post-secondary education affords a degree (equivalent to a B.A.). DEMS has not offered degrees.

- (2) Courses leading to a Certificate in Business Studies, including English, accounting, business mathematics, commerce, economics and law; and courses leading to a Pitman's Shorthand Certificate.
- (3) Courses leading to a Diploma in Business Management including general management, marketing management, and data management; and courses leading to a Diploma in Adult Education, including philosophy, psychology, methods, materials, planning, organization, administration, research and evaluation, rural development and subject studies. (See Annexes H and I for a further description of these two diploma courses) and courses offered jointly with the Faculty of Education leading to a Diploma in Education.
- (4) "Self-help" courses, affording no academic credit other than a Performance Certificate. These include car maintenance, dressmaking and design, dietetics, Siswati, metal work and electronics, and "Refresher" courses, including teaching adults, research methodologies, radio script writing, educational counselling, program planning, personnel management and public administration. These are aimed at improving the skills of mid-level workers.

DEMS current enrollment figures are as follows:

	<u>1976/77</u>	<u>1977/78</u>
Diploma: Adult Ed.		24
Management		30
Business		27
Education		24
Shorthand	70	25
Certificate: Business	<u>80</u>	<u>70</u>
Sub totals	150	200
COSC "0" Levels:	<u>192</u>	<u>242</u>
Self-Help:	<u>70</u>	<u>102</u>
Sub totals	262	344
	==	==
TOTALS	412	544
	==	==

DEMS has 10 centers (i.e., sites of instruction) throughout the country, mostly in urban and semi-urban settings. Most of these are secondary schools where DEMS courses are offered on demand. Except for "0" level courses, which are given in every center, the Diploma of Education courses which are given in two of the outlying centers, courses are now limited to the Kwaluseni, Luyengo and Mbabane centers, each of which caters to an urban, relatively well-educated audience.

Course tutors (instructors) are hired on a part-time basis. Tutors are usually secondary school teachers, university faculty or government or private employees with credentials in certain subjects. They receive E7.00 per hour of classroom instruction, (approximately 8 dollars), and are paid directly from the University

budget. Students pay fees for each course; these vary from E1.00 to E100.00, depending upon the nature and length of the course and the academic and economic level of the student. There were 26 tutors in 1976/77, teaching 460 students.

All these courses are arranged and administered by the DEMS office on campus, which now consists of the Director and his secretary (one staff member is on duty leave). DEMS is also expected to teach courses in adult education, offered by the Faculty of Education, but at present, the work overload prohibits this.

(5) Demands for DEMS Services.

A wide range of agencies and organizations aiming at basic skills training in rural areas are already present in Swaziland, either in the operational or planning stages. There is a shortage however, of rural educators and extension workers and of managerial/training expertise needed to implement successfully these critical programs of development. The University can help to provide trained instructors for these programs by making use of DEMS' potential capacity in the area of adult education.

The most significant agencies and organizations involved in rural adult education are the following:

(A) Ministerial Departments of:

- (1) Agriculture: Agricultural, animal husbandry, and home economics extension;
- (2) Health: rural health workers;
- (3) Commerce and Co-operatives: Co-operative Development Center (CODEC) and Handicrafts;
- (4) Local Administration: Community Development and Social Welfare; Sebenta (literacy);
- (5) Education: Rural Education Centers (RECs) In-service teacher training;
- (6) Industry, Mines and Tourism: Small Enterprise Development Corporation.

(B) Private and parastatal organizations:

- (1) Swaziland International Education Center;
- (2) UNDP Women in Development Program;
- (3) Independent Church sponsored enterprises.

Most of these are presently trying to handle their own training needs, including the development of their top level management, but investigations reveal that, with rare exceptions, they have lacked the expertise and funds to do this satisfactorily. One may conclude that if a reliable institution such as the University possessed

demonstrated expertise in adult education, these agencies and organizations would turn to it for training adult educators. Their own services would improve considerably as a result of what they could learn in the area of training design and management of programs in adult education. The existing well-staffed but inadequately trained field staffs would, in turn, profit from better management support and in-service training.

We must make the critical distinction between the potential demand and the effective demand for DEMS courses. That is to say whereas the perceived need for the kind of manpower training DEMS can provide appears obvious to a wide range of organizations, DEMS cannot yet guarantee a market for its services.

Calculation of the net social benefits to (and the rate of return from) the project requires an assessment of the demand for the products of DEMS since this is considered as a derived demand. A survey of students in DEMS "O" level and diploma courses indicates that economic motivation is critical in student choice to enroll in DEMS courses. Their choice reflects both economic benefits expected by the student and the relatively low costs (no opportunity cost in the form of foregone income) to the student of DEMS courses.

The effective demand for DEMS will depend not only upon the near term financial benefits for its graduates but also upon the willingness of employers to support the attendance of their employees at DEMS courses. In the interest of elucidating the relationship between potential and effective demand for DEMS activities let us refer to several specific cases in which the clear potential demand may become effective demand. The present effective demand for the services of DEMS exceeds its capability to satisfy. (See the section on financial analysis). But further growth of effective demand for DEMS courses requires the backing of wants and needs with purchasing power. This may be done through students paying fees, through their employers paying fees, or through direct payment of employers to DEMS to establish a course.

In all of these cases, due to the "derived" nature of the demand for DEMS services there must be a recognized need for trained manpower on the part of employers and a recognized capacity in DEMS to satisfy that need. Unlike many educational institutions in Swaziland, DEMS can respond to different needs at different times without establishing a large physical or personnel establishment.

As one example of the potential and effective demand for DEMS let us explore the current situation in the Ministry of Education. The new Permanent Secretary sees a need for in-service managerial training in response to the responsibilities of the ministry which has been expanded from traditional schooling to include programs in special education, curriculum materials development, non-formal education and so on. Increased decentralization of ministry activities require the increased capacity of administrative sub-units to monitor their own expenditures

and to make semi-autonomous allocation decisions. Efforts by the Ministry to encourage managerial training among the ministry employees are limited by the budget for this. (The Department of Establishments and Training, not the Ministry of Education, controls scholarships for GOS employees to attend courses). The Ministry of Education, however, does pay the salaries of employees who are seconded to training. As it would not be necessary to cover the salary cost of an absent employee enrolled in a DEMS course, it appears likely that the Ministry of Education could finance in-service training courses offered by DEMS from the money saved by not sending employees away for training if Establishments and Training concurs.

Another area of potential demand that may become effective demand, is training for industrial management. The Director of the Swaziland Federation of Employers perceives a need for managerial training which the Director feels is a strong potential demand for DEMS, but which would be translated into effective demand only if DEMS had the skilled staff to develop new programs in cooperation with the employers involved. The Director is very willing to help develop such programs. A strong governmental push for localization of the private sector and/or tax credits for industry-financed training would promote even further the effective demand for DEMS training programs.

A third example of potential demand for DEMS services that can become effective demand is training for staff members of the Rural Education Centers (REC) (see Technical Analysis, Section 1). The Ministry of Education presently holds \$20,000 earmarked by UNICEF for the training of these staff members. There appears to be no organization in Swaziland except DEMS presently capable of supplying such training. However, in order to offer an adequate course and to convince the Ministry of Education of the probable effectiveness of such a course, DEMS must first augment its resources - personnel and curricula - to give evidence of its capacity to meet the complex and virtually untested requirements of good training for managers of rural integrated development programs.

Finally, several other organizations, including the Ministry of Agriculture, the Small Enterprise Development Corporation, Sebenta and other agencies (listed above) have an obvious potential demand for in-service training in the areas of adult education and management. The degree of urgency varies from one to the next, and the transformation of potential demand to effective demand in each case will be a function of DEMS demonstrated capabilities and its ability to assure each organization of cost-effective training.

An example of the outreach of DEMS courses is that of the Diploma of Adult Education. The first course has been underway since mid-August, 1977. Eleven present or potential adult educators are enrolled in the course given at the Manzini center and thirteen at the Mbabane center. Of these, 8 are employed by government ministries, including the Ministry of Local Affairs; 5 are with Sebenta (including the

Director of Sebenta); 2 are with the Swaziland College of Technology; 4 are primary school teachers, and the remaining 5 are employed in the private sector. Class meetings are held thrice weekly for three hour sessions. Thirteen of the twenty four students are women.

All of the civil servants and teachers are sponsored by the government through study loans from Establishments and Training.

Each center employs two tutors who are specialists in adult education. Also available for instruction are two university faculty members, the advisor to the Ministry of Education in adult education and an official of the Ministry of Education Curriculum Unit (a project supported by USAID).

In summary this brief survey shows that there is an effective demand now and a major potential demand for DEMS programs in adult education and management training - both of which are critical to development of Swaziland's economic and social services.

B. Detailed Description

1. Introduction

This project will provide assistance to the University College of Swaziland. The project is designed to strengthen the Division of Extra-Mural Services (DEMS) as the institutional linkage between university resources and Swaziland's middle-level manpower training needs.

The Project will provide three U.S. technicians to assist DEMS in developing its programs; will provide participant training to future staff members; will provide in-service training to current staff members and part-time tutors; and will provide three supplementary classrooms, a student hostel, three staff houses, 7 project vehicles and essential commodities.

The project will also make the university more relevant to national development needs through (1) strengthening existing institutions in adult education and integrated development by training adult educators (2) providing in-service training in management, administration and business skills to employees in the public and private sectors, and (3) making the University student body more aware of and involved in problems of national development.

2. Goal

The project goal is to assist Swaziland in developing the middle level manpower required to achieve national development objectives. The indicator of goal achievement will be the assumption of key middle level manpower positions by qualified Swazi. The goal is long-term - it will not be reached during the term of this project, probably not before the end of this century and certainly not by 1981 as the 2nd Development Plan suggests. Recent unpublished data indicate that 36% of the professional and technical

positions and 58% of the administrative positions in the public service in Swaziland are occupied by non-Swazi nationals.

a. Goal Assumptions

The most critical assumption is that education and training continue to have a high priority in Swaziland. A second assumption is that Swazi citizens, particularly in the 20-35 age groups, desire to improve their qualifications. A 3rd assumption is that qualified Swazis choose to work in Swaziland rather than in the Republic of South Africa.

3. Project Purpose

The purpose of this project is to increase the capacity of the University College of Swaziland's Division of Extra-Mural Services (DEMS) to meet mid-level manpower training needs.

The project is designed to link the university to Swaziland's development programs through (1) training personnel who will teach and administer adult education programs, particularly those in rural areas; (2) providing in-service training in management, administration and business skills to public and private sector employees whose responsibilities affect development; and (3) more actively involving the university faculty and student body in problems of development.

DEMS will be engaged in the following activities:

- 1) Designing and implementing in-service courses leading to Diplomas in Adult Education and in Management for government, parastatal and private employees in mid-level positions.
- 2) Providing support to university extension courses leading to a Diploma and a Certificate in Business Studies and a Diploma in education.
- 3) Offering tailor-made courses to government and private organizations requesting help in management and administration skills, particularly training design and management.
- 4) Facilitating participation of university students in development activities through academically certified courses such as practice-teaching of adults.
- 5) Providing support to continuing education courses leading to "O" level exams until the Ministry of Education has assumed full responsibility for them in 1981.
- 6) Providing support to the pre-entry science program of the University. This program is designed to upgrade the science and math training of secondary

school graduates so they can qualify for University Curricula requiring science qualification. This aspect of the project will be phased out as the current in-service training program for secondary science teachers takes effect and remedial science math courses are no longer required for University aspirants. AID project resources will be directed primarily toward 1, 2, 3 and 4 above. No support will be provided to the program described in para 5 and support to the program described in para 6 will be limited to the construction of classrooms that will be used part-time by the pre-entry science program.

a. Purpose Indicators

By the end of this project, the Division of Extra-Mural Services (DEMS) should demonstrate the following characteristics:

- 1) Improved organization, curriculum and teaching.
- 2) Outreach program expanded to training centers outside Mbabane - Manzini corridor.
- 3) Capacity to supply courses in adult education and management to meet most of Swaziland's effective demands.
- 4) Trained and experienced local staff.
- 5) Adequate physical facilities to service training needs and staff housing requirements.
- 6) Increased University involvement in development-related activities.

b. Purpose Assumptions

- Sufficient Swazi Staff can be allocated to the programs to permit orderly staff development and to plan and organize programs as desired.
- There will be no major decrease in funding for University programs.
- DEMS has sufficient priority to obtain the necessary resources, human and material, to carry out its programs.

4. Planned Outputs

The direct output of the project will be a Division of Extra-Mural Services actively engaged in designing and implementing courses which bring university resources to adult educators and to adults who are not full-time university students. This output can be broken down into:

- (1) Trained and experienced Swazis directing and staffing the DEMS program.
- (2) Significant expansion of courses offered and attendance in adult education management programs.
- (3) 10% of university students involved in DEMS development-related activities.
- (4) High quality curricula and teaching/learning materials produced for DEMS programs.
- (5) Physical facilities constructed: 96-bed hostel, 3 staff houses, Classroom/laboratory block.
- (6) Expanded course offerings and attendance in 10 training centers outside of Mbabane - Manzini corridor.

Adequately prepared faculty and staff members constitute the most essential output, since the importance of the program will be the training capability of those who direct it.

The University Development Plan includes three additional DEMS faculty positions (in addition to the 3 current positions) in 1980. In anticipation of this increase, the university has requested three U.S. Technical Assistants to work at DEMS, and, simultaneously, five Swazis to undergo training in order to fill the five positions available in 1980 (2 existing positions will be localized). The effective training of these individuals and the adequate preparation of a DEMS program for them to step into is viewed as critical to the University's expansion of its reach beyond the University Campus.

Participant training will consist of at least two years of on-the-job training, plus an intensive, tailor-made program at the American university providing technical support through a contract. These three years of training will lead to a Master's degree in Adult Education.

Increased course offerings and increased numbers of graduates from those courses comprise a second output in terms of trained manpower. These can be described in two categories. First, there is the in-service training of adult educators. This will include assistance in the preparation of training and support personnel in a wide range of agencies and organizations engaged in adult education who desperately seek help in the design and management of their programs. The Education and Extension Departments of the Ministries of Agriculture, Health, Local Affairs, Commerce and Co-operatives, as well as the Ministry of Education's Rural Education Centres and GOS's National Literacy program (Sebenta) are suffering from a lack of trained leadership to give in-service training and support to

their workers, as well as to manage their programs.

Second, there are adults who turn to the university for part-time courses through which they can acquire managerial, administrative, communications and related skills needed for their own up-grading, by increasing their competence and/or the academic degree they need for job promotion. These adults will benefit directly from DEMS programs. (See Table 1-B-1).

TABLE II

Projected Annual Outputs in year 5 of Project and Succeeding Years.

A. Diploma: Adult Education	100
Management	100
Business	100
Education	75
Shorthand	40
B. Certificate Business	140
(Other)	50
C. Short-term Extension Courses	50
(5 courses X 10 students)	
D. University Faculty of Education	10
Courses in Adult Education	
(Degree Level)	—
Sub Total	675
E. Self Help	350
	<hr/>
	TOTAL
	<u>1,025</u>

A small portion of full-time students (approx. 10%) at the university can be considered as an output of the project, insofar as DEMS will provide them with opportunities to work periodically in rural areas, as student teachers, community workers, and so on. The enlightenment they receive as a result of working through DEMS with citizens beyond the walls of the university should be a noteworthy contribution to the national development process.

Curricula and materials produced in the course of the project will be substantial output, even though the project is not considered primarily as a materials production endeavour. More important than complete sets of elaborate curricula and materials are the skills needed to produce inexpensive materials for a variety of courses which are expected to change rapidly in the near future as manpower needs shift. All the trainees in this project will receive training in curriculum and materials development.

The principal curricula will be those for the diploma courses in adult education and management. Although

these curricula will be used at first in the two currently operating centers of Mbabane and Manzini, they will be designed for use primarily in the outlying centers when programs are introduced. Therefore each curriculum will consist of a set of basic reading materials, including papers and/or booklets to guide the students in independent reading and practical projects.

The curricula content will reflect the outline of each course. The adult education curriculum will focus on training of trainers. It will include readings and practical work guidelines in methods and materials in adult education, adult psychology and learning behaviour, planning, organization and administration of adult education, rural development, and basic information on teaching subjects such as health and nutrition, home and family management, cottage industries, cooperatives and marketing, literacy and numeracy. Most important will be the components instructing in training design and management of small scale development programs.

The management curriculum will include readings and practical work guidelines in general management, management of personnel, production, marketing and finance, and business maths and accounting. Training design and management will also be an essential component.

Each curriculum will be designed for approximately a six-week time period during which weekly class meetings are held. Students will be expected to be employed in positions relevant to the course contents, so practical work will be featured. By the end of the project period (1982) materials should exist in final form in sufficient numbers to supply up to 100 students annually in each course over the next 5 years (i.e. 500 of each).

The curricula and materials development aspect of the program will have three phases, the timing of which can be roughly projected here. During the first six months, books and materials considered to be basic resources in adult education, training design and management and rural development will be acquired in enough copies to be made available on a loan basis to students. During the next twelve months, these will be used to prepare "learning packages", which guide students in their use. During the final eighteen months, self-instructional materials will be produced, so that the amount of classroom time can be cut down, and instructors can use the time they have with students more efficiently.

Facilities for DEMS will be the fourth output of the project. The present University plant is overcrowded, although additional buildings are under construction. There is still a need for facilities for DEMS sponsored conferences and workshops taking place during the academic year. A student hostel with a capacity of 96 persons will provide housing for short-term residence courses and for other functions requiring housing. Three multi-purpose classrooms are also being provided for special training sessions, as meeting rooms and as laboratories.

The pre-entry science course students will use the laboratories and also utilize the hostel facilities when they are not being fully utilized by DEMS. During the first years of this project, it is anticipated that DEMS will require the facilities about 50% of the time, the remainder of the time being utilized by the pre-entry science courses. By the time the project is in full operation, DEMS will require the use of all the facilities.

DEMS Course offerings will be expanded in 10 training centers outside of the Mbatane-Manzini corridor. DEMS will gradually introduce the use of self-instructional materials to facilitate courses where frequent attendance of classroom instruction is not possible. A special effort will be made to stimulate potential demand for DEMS courses in outlying population centers and rural areas.

a. Output Assumptions

Output assumptions include:

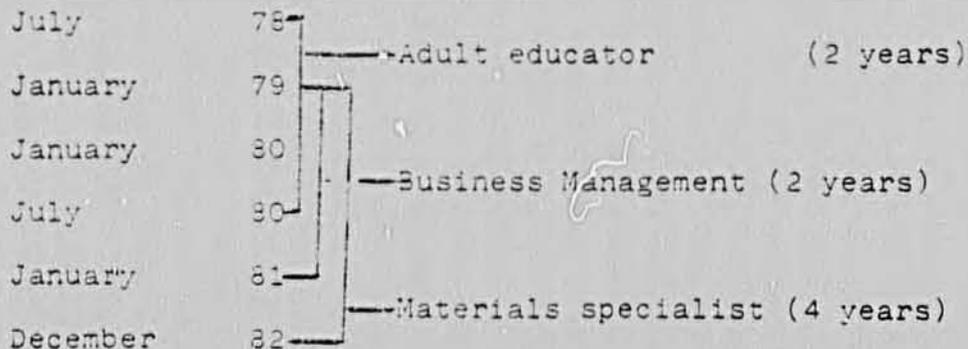
- Continuing availability of AID and host government funding during the project.
- Adequate U.S. personnel can be recruited for the advisory positions.
- Suitable candidates can be made available for training.

5. Inputs

The project will span 5 years, during which 3 U.S. technicians will work on a staggered schedule and 5 Swazis will receive participant training. The three U.S. specialists will be specialists in adult education, (2 years), material development and production, (4 years), and business management (2 years).

In addition, 10 man-months of short-term consultant services will be provided in such areas as formative evaluation, educational radio programming, and selected subject content areas.

The three U.S. technicians will serve as follows:



During the first 6 months the adult educator will work

with the DEMS staff to prepare the DEMS development plan and establish linkages with clientele and support groups.

During the second 6 months, he will concentrate on implementing courses for adult educators working in rural education programs, while the management specialist will focus on the development of courses and course materials in management for middle level workers in the public and private business. The materials specialist will review curricula and materials design and assist the DEMS staff in their improvement, and final production.

The DEMS approach to training is designed on an experiential model, according to which individuals improve their ability to perform certain tasks by actually doing them under effective supervision and with guided reflection.

The process will occur on three levels simultaneously:

1. Within DEMS, the five participant trainees will learn how to teach adults training, management and design skills by sharing responsibility for doing so with three experienced and capable U.S. technical assistants.
2. In government agencies and parastatal and private organizations mid-level employees with some training and managerial responsibilities will increase their skills through Diploma courses and through tailor-made in-service training courses offered by DEMS.
3. Extension workers and educators will learn how to work with adults, teaching them the skills for development as defined by their own agency, by on-the-job training with supervision from the responsible ones in their own agencies, who in turn are learning from the DEMS staff.
4. UCS students will be utilized as part-time tutors for post-literacy classes conducted as part of the DEMS program.

The most essential inputs into the project are 8 person-years of U.S. technical assistance and 5 person-years of participant training. This will lead directly to the primary output of a DEMS staff consisting of 6 Swazi adult educators, all of whom have received intensive training to take responsibility for DEMS. (One trained Swazi is already on the DEMS staff). The process by which the inputs lead to outputs centers on the dual role to be played by technicians:

- (1) development and support of DEMS institution and activities during the project period and (2) in-service (counterpart) training of the Swazis designated to take responsibility for DEMS activities.

A second dimension of the U.S. technical specialists role is the development of curricula and materials. These are needed to serve adults in those areas of Swaziland remote from the Mbabane-Manzini corridor - areas without easy access to university facilities but with a potential clientele for university courses of the kind DEMS can offer. The development of curricula and materials will reduce the need for teacher/student contact hours.

The construction to be completed under this project includes one classroom/laboratory block with three multi-purpose classrooms and two storage and preparation rooms, one 96-bed hostel and three senior staff houses.

Funds will also be provided for commodities, equipment and vehicles which are considered to be necessary to the proper functioning of this project. Provision will be made for a reading room in the DEMS office for staff members of DEMS and for part-time tutors in DEMS courses. This room will be stocked with publications dealing directly with the teaching of adults at the post-secondary level. There will also be a section of books and other materials dealing with adult education. Equipment will be provided for the preparation of teaching/learning materials on a prototype basis. It is expected that the production of materials in large quantities will be done under contract, either with other educational institutions such as Sebenta or International Education Center or with private printing plants. (A list of project-funded commodities is found as Appendix B).

Six vehicles will be provided for the transport of staff members and part-time tutors, particularly those from the University Faculties, to off-campus teaching centers. One bus will be provided for use in those instances in which students will need to be transported from the teaching center to other localities for observation or field studies. The bus will also transport University students to off-campus teaching centers where they will participate in the teaching of post literacy classes as a part of their University experience. These classes will have been organized by DEMS staff as a part of the University out-reach activity.

a. AID Inputs

Technical Services:

Adult Education Specialist

2 M/Y at \$90,000 p.a. \$ 180,000

Materials Development and Production Specialist

4 M/Y at \$90,000 p.a. 360,000

Management Training Specialist

2 M/Y at \$90,000 p.a. 180,000

Consultant Services

10 M/M at \$6,000 60,000

TOTAL Technical Services 780,000

Participant Training:

Five programs at \$12,500 p.a. 62,500

Commodities 146,000

Other Costs (Construction)

Classroom/Laboratory Block 243,450

Hostel 506,000

Staff Houses 100,050

Service Installation 57,500

Inflation Escalation 163,000

TOTAL Construction \$1,070,000

SUMMARY

Technical Services 780,000

Participant Training 62,500

Commodities 146,000

Other Costs 1,070,000

TOTAL AID INPUT \$2,058,500

b. Other Inputs

The classroom/laboratory block which is to be constructed under this project is to be used jointly by DEMS and the University's pre-entry science course, which will be conducted in the facilities by the faculty of Education six months per year for the next four to five years. DEMS will utilize the facilities for short residential courses, workshops and seminars. By the time the DEMS programs are developed to the point that the facilities are needed fulltime, it is planned that the pre-entry courses will no longer exist.

The instructional staff for the pre-entry science courses will be provided through the support of the Government of the Netherlands. An additional contribution of recurrent funds will be provided by the European Development Fund (EDF).

EDF will also finance the major part of the construction of the DEMS/Faculty of Education complex, of which the classroom/laboratory block is the remaining portion still to be funded. This complex will include the offices, furniture and equipment, Materials Resource Center, and other space requirements of DEMS. (Est. cost \$400,000).

c. GOS Inputs

U.S. technicians will be provided benefits and allowances normally provided by the GOS to other expatriates occupying established positions at a similar level in the government service. The U.S. will finance the salary of the technicians and the difference in allowances necessary to recruit U.S. technicians. The GOS will also assume all responsibility for providing housing and hard furnishings.

The GOS will identify candidates for training under this project. Pay, allowances and benefits for such candidates will be the responsibility of the GOS. For those candidates selected for training outside the country, the GOS will also agree to finance all local costs prior to their departure and to maintain the trainees salary or family allowances, as and when appropriate for the support of non-accompanying dependents during the full training period.

The current UCS budget for the DEMS includes three professional staff and one clerical positions. Present plans call for the addition of at least three professional staff after the 1980 fiscal year.

The land for the facilities to be constructed is on the Kwaluseni campus of UCS and is included in the Master Plan for the campus.

The GOS will provide the necessary office space, equipment and materials for the use of DEMS and the U.S. technicians working with DEMS.

GOS inputs

U.S. Technicians support	\$ 30,000
DEMS Budget (5 years)	400,000
Trainee Costs	22,000
Office Space and Equipment	40,000
Administrative Support	30,000
Rental Value of Classrooms	30,000
Fees for Courses	75,000
Radio Time Contributed by SBS	10,000
Land for Development	<u>100,000</u>
TOTAL	<u>\$737,000</u>

Part III. Project Analyses

A. Technical Analysis

The technical analysis is organized around a series of questions about the project as designed. The critical issues arise in the course of answering these questions, and are summarized both at the end of this analysis and in Part I.E.

1. Is DEMS the best setting for a project intended to improve adult education, especially in rural areas? There is a range of possible settings for a project of this type. Certain ministerial agencies are responsible for extension work and the in-service training of extension workers. The most prominent of these are the following:

- a. Ministry of Education:

Rural Education Centers - these are designed to extend certain rural secondary schools to adult education programs. They are designed on the concept of integrated rural development, and will call on services of various ministries, as well as rural teachers and local volunteers. The Centers were built with World Bank funds, but staffing is the Ministry of Education's responsibility. They are still in the experimental stage, but 20 are planned over the next 5 years.

b. Ministry of Local Administration:

Community Development and Social Welfare - this is the program for training and supporting community change agents and welfare workers in rural and urban areas, although very little activity is going on now.

Sebenta National Adult Literacy Program - this began in 1961 as the Sebenta National Institute, but has recently been given over to the government after four years of supervision from UNESCO. The program is well entrenched in rural areas throughout the country, where local literates are trained and paid a pittance to teach literacy in Siswati. The program is currently lacking adequate high level staff and adequate funds but is otherwise well-established.

c. Ministry of Agriculture:

Agriculture Extension - this Department has a fine network of extension workers, initially trained by the Ministry. Two farmer training centers in rural areas are now being tried, as means to improve extension services. There is an apparent lack of in-service training of these extension workers, but on the whole, the Ministry of Agriculture and the Faculty of Agriculture at the University devote much of their resources to extension and education.

Home Economics Extension - this is a strong program, both in the Ministry and at the University. It is supported by FAO assistance and UNFPA funds. Although the program is far from meeting all its goals, it is trying several interesting approaches, and is well-backed.

d. Ministry of Health:

Rural Health Workers - the department has trained 130 of a projected 900 rural health workers. Training is given primarily by public health nurses. The program appears to suffer from lack of coordination of training activities, although it has technical assistance from WHO and funds from UNFPA.

e. Ministry of Commerce and Cooperatives:

Cooperative Development Center (CODEC) - completed in 1976, CODEC provides residential training for the elected leaders and staff of cooperative societies as well as for the supervisory personnel of the Department of Cooperatives. It seems to function effectively.

f. Ministry of Industry, Mines and Tourism:

Small Enterprise Development Corporation - this

agency teaches people skills in entrepreneurship and small business management.

In addition to these ministerial departments, the Swaziland College of Technology (SCOT) in the Prime Minister's Office provides technical training in order to meet mid-level manpower needs, and the Staff Training Institute trains government employees in public administration. The Swaziland International Education Center (SIEC), currently a private institute supported by the Danish government but soon to be incorporated in the Ministry of Education, is preparing correspondence course materials to be used in offering Junior Certificate and "O" level courses to school leavers without access to further schooling.

All of these agencies and organizations are engaged in adult education. In one or another respect, each of them is a viable alternative for further support from AID. Organizationally, it would be cumbersome to provide training support directly to a variety of ministerial departments outside the Ministry of Education. Since SCOT and the Staff Training Institute are directed mainly to urban rather than rural adults, they are less attractive as channels for rural development and thus less in keeping with U.S. foreign aid guidelines. The International Education Center is already fully operational, apparently successful and not in a phase requiring additional support.

The settings which deserve most serious consideration for further support in adult education activities are the Rural Education Centers (RECs) and the Sebenta program. The RECs appear to be the perfect setting for integrated rural development programs, amenable to the kinds of adult education activities this project aims at promote. But a close look reveals drawbacks to further foreign funding of these Centers at this time. In brief, the World Bank has supplied the capital - the buildings and equipment for 7 of these centers, but they did not provide for staffing or programming. In addition, there is a great scarcity of individuals able to coordinate these Centers. As of now, Peace Corps Volunteers are coordinating the two pilot centers, and the others have not begun operations. Finally, there appears to be serious lack of agreement on a ministerial level as to how the other ministries will cooperate with the Ministry of Education in offering integrated rural development programs in these Centers. In short, although the Rural Education Centers are tempting to support, their immediate problems are a lack of funds for recurrent costs and a lack of trained adult educators to manage them. The RECs require stronger support from the MOE before additional technical assistance will be useful.

The Sebenta National Adult Literacy Program began as a small private institution. Between 1970-74, it developed rapidly when a UNESCO expert provided assistance, primarily in developing the administrative mechanisms and the audio-visual shop. Recently the program has suffered from a lack of funds and top-level personnel, and can hardly maintain its own program, let alone diversify and offer other basic skills to the rural adults who are now learning literacy. But like the rural Education Centers, Sebenta's main problem is a shortage of middle level and top management and a limited budget. Rather than expanding into new areas, Sebenta should probably be encouraged to make better use of its already developed infra-structure and cadres of instructors. In fact, we propose that Sebenta be used as a supplementary audio-visual supply and materials production unit for DEMS project so that the existing operations can be strengthened and so that Sebenta can have a functional link with DEMS adult education programs. At this time Sebenta facilities are used on a contract basis by the Ministry of Education and other educational programs. They do need more equipment and staff, however, to respond efficiently to current demands.

Now consider the arguments for and against situating this project in the university, and more specifically in DEMS. The University is a well-planned, institution with improving management and the potential for healthy growth (see the Financial analysis). Programs developed within the University are done so with professional competence, and are strongly guided by considerations of effectiveness and efficiency. The Rector of the University College has expressed his commitment to the concept of a university serving the development needs of the nation and to DEMS as an obvious means of realizing that commitment. Next, as part of the University, DEMS can be an acceptable resource to the whole range of government and parastatal organizations now pursuing adult education in training design and management skills.

By giving support to DEMS for adult education programs, AID can avoid the major pitfalls into which the Rural Education Centers and Sebenta are falling. DEMS, is largely funded as part of the university, and as such enjoys the relative autonomy of that institution in allocating staff positions and assuring their financial support. DEMS also has a high degree of independence in determining what kinds of training programs it will offer and who its clientele will be. Thus, DEMS programs do not depend upon the success of inter-ministerial efforts or even direction from the Ministry of Education.

Finally, extra-mural studies are a traditional part of East African and Southern African universities, and thus DEMS can be considered as an "existing social institution".

There are some issues which cannot be overlooked in regard to situating such a project at the university. First, if we seriously intend to follow foreign aid guidelines and direct services to the rural poor, the traditional concept of a university must be stretched to encompass the project, and scarce resources allocated by the government to the university for the purpose of higher education will be

taxed in a manner that may not be acceptable to faculty, staff and students who prefer to limit their efforts to on-campus, strictly academic activities. To date, faculty members have participated in DEMS on a voluntary basis, and no one has been forced to give time to the program. Consultation with members in the faculties of Professional Studies, Humanities, Education and Agriculture indicates general sentiment among the faculty toward DEMS and toward the concept of outreach is reportedly favourable, and their cooperation in the build-up of DEMS looks promising.

A second issue is that of the value of educational programs leading to academic credit, which is an understood interest of the university, versus the value of programs which do not fall into the academic ladder designed to increase competence in specific jobs to meet specific manpower needs. The two - academic and functional training - are not necessarily in conflict, but in Swaziland, there is still a close attachment to the British educational system and to the corresponding job qualifications system which makes it unrealistic to ignore the high value placed on academic qualifications. DEMS can offer academic credentials (certificates and diplomas) for its training courses which should be relevant to specific needs, as they will serve people who are on the job, and as they can be designed to meet specific demands for skills training.

A third issue is whether or not the potential clientele of DEMS - primarily mid-level government and industry personnel - will actually turn to the university for help in adult education and training, or whether they will continue to rely on their own resources and keep all training "in-house". This issue is critical enough to merit special attention in the following section of this analysis.

2. Can DEMS attract adult educators and mid-level personnel to its training programs? In the previous section, we determined that DEMS is a viable institution for a project in adult education. This argument hangs on the contingency of organizations engaged in adult education turning to DEMS for training assistance and support.

Government services are organized so that each agency is responsible for its own training programs. No organization is designated as a training institution available to all agencies, nor is DEMS officially designated to serve in this capacity. Nonetheless, there is an obvious need for in-service training and upgrading in various agencies, including those listed above (Section 1). In addition, the Swaziland Federation of Employees shows strong interest in promoting and supporting an institution that would offer in-service training resources to mid-level managers in industry. These organizations now rely on their own resources for in-service training, and that assistance would be welcomed. If DEMS develops the kind of training demanded by some of them, it can gradually

build up a repertoire of training services and a growing clientele by demonstrating a capacity to meet specific demands and by gaining an increasingly strong reputation for effective training.

In short, at present, DEMS has no official institutional role in manpower training. Although there is now an obvious and felt need among the organizations listed above for adult education, DEMS success in meeting those needs will depend upon continued forging of strong linkages and demonstrated effectiveness in a timely manner.

The strategy DEMS uses to attract students and to build up its training services is that of locating a gap in such services and developing courses to meet the demand. To date, during the past 15 months this has led DEMS to offer "O" level courses, university level courses in adult education, management, business studies, and a variety of non-credit courses such as wood-work, home arts, auto maintenance, and so on.

When the project commences, DEMS can continue with this array of courses, but begin immediately to concentrate on the diploma courses and to negotiate with organizations such as the Ministry of Education and the Swaziland Federation of Employers (see Background and Setting: Demands for DEMS programs) to offer tailor-made courses. By the end of the five-year project period, DEMS would be expected to be offering the current diploma courses each year, and two or three tailor-made courses yearly. The specific clientele and contents of these courses will depend on which organizations DEMS succeeds in attracting and the nature of their demands. Priority should be given to training personnel in management and administrative skills, particularly training design and management.

Initially, the DEMS centers (i.e., sites of instructions) will continue to be those in Mbabane, Manzini and Luyengo, which are now used most frequently. As soon as possible, the other more distant centers will be built up by increasing the variety of courses and the regularity of programs in each one. This will entail the recruitment of students and the recruitment, training and support of part-time instructors from among the rank of teachers and other individuals with the skills/knowledges in demand.

The director of DEMS has already created linkages with organizations involved in adult education and with institutions capable of lending weight to DEMS as a training resource. DEMS is advised by a Board of Studies which includes representatives from government, the private sector, and University faculties. The Board meets monthly and reviews all programs, in order to ensure their quality and relevance to the needs of Swaziland. At the present time, the board includes representatives of the Ministries of Education, Agriculture, Local Administration, The Office of Establishment and Training,

the Federation of Swaziland Employers, the Workers Union, and Sebenta. The Rector of the University serves as Chairman of the Board and the University is further represented by members of each of the Faculties of the University.

During the past year, DEMS has organized a seminar on the role of adult education in rural development. This seminar was opened by the Minister of Local Administration and participants included representatives from the Ministry of Local Administration, Sebenta, Staff Training Institute, Swaziland Broadcasting Service, Cooperative Development Center, and the Red Cross. Two seminars were organized on Management Training, in cooperation with the Swaziland Association of Training Officers. As another example of the efforts of DEMS to bring University resources to the non-University community, the Director of DEMS serves on the board of Sebenta.

The Swaziland Broadcasting Service provides the facilities and time for three weekly radio programs:

Study with DEMS - supplementary lectures for registered students

Something New - Self-help education for working adults

University Forum- Dialogues between the University and the public.

3. Is the planned project period (1978-83) an opportune time for its implementation? In certain respects this is the most opportune time to implement the project. The University College of Swaziland has only begun its second academic year, and policy decisions and activities which can shape the character and direction of the University are still being formulated. If the kind of adult education activities envisioned by this project are introduced now as a significant facet of University commitment, they have a better chance of becoming institutionalized than if they are attempted at a later stage. These chances are increased by the presence of a university rector who expresses interest in this dimension of university activities and of a DEMS director who has, over the past 15 months, solicited cooperation of some of the university community and has begun to build a clientele for continuing education activities. The present director has an indefinite term of office, since he is an expatriate. A strengthened staff and significant budget increases are vital to the provision of strong programs and sound long-term development. Finally, investigations reveal a perceived need for training mid-level ministerial and industrial personnel in managerial skills, including the ability to design and manage in-service training programs. If the university does not meet the need, various agencies may be forced to turn elsewhere or to rely on their own resources.

Given the present structural links between these agencies on the level of staff training, it is reasonable to build up the university as a resource to all of them.

There is some risk attached to the timing of this project. The government is at the end of its Second National Development Plan which runs through 1977. We must rely on the second Plan, the University of Botswana and Swaziland Development Plan, 1976-85, the Ministry of Education's working document, "Current Trends in Education, 1976", and the 1974 EHRD Sector Analysis. Only the University Plan reflects the sudden breakup on UBLS and reallocation of resources required to support the new University College of Swaziland. Although a substantial increase in staff positions is not due before 1980, the University Development Plan includes a projection of 3 new positions to DEMS. A budget increase is also foreseen by the planners.

7. Is the project justified in supporting certain aspects of the current DEMS program and ignoring others? Based on the apparent need for adult education in both public and private organizations, on the current DEMS director's expertise in rural adult education, and on USAID guidelines and capabilities, the project is proposed to build up DEMS as an institution capable of training adult educators in training design and management. Currently this is only one part of DEMS - that part leading to a Diploma in Adult Education.

U.S. technicians and participant trainees would treat the other aspects of the current DEMS program in the following manner for the following reasons:

- (1) Substantive input would be given to the Diploma in Management courses because there appears to be strong support from the Swaziland Federation of Employers. Also, they overlap in substance with the adult education course, and because students enrolled in them are likely to have an indirect effect on development programs in their work in the civil service and industries.
- (2) Support would be continued to the Diploma and Certificate courses in Business studies both because they are politically important and economically sound (See Economic Analysis Section).
- (3) Support and occasional substantive input would be given to the Diploma in Education courses also because of an overlap in substance, and because DEMS should continue its good working relationship with the Faculty of Education.
- (4) Support to "0" level courses would be dropped as soon as the Swaziland International Education Center has completed its materials on "0" level correspondence courses and turned responsibility for them over to the Ministry. Where logistical support can be provided at a minor cost to DEMS, it should be continued, but not otherwise.

- (5) "Self-help" courses should not be supported for reasons already explained - most appear to cater to an urban educated audience and to have little value in the development process.

At present, of course, all of these courses are valuable in allowing DEMS to advertise its services and make a reputation for its competence, as well as in meeting immediate needs. During the course of the project, a careful balance must be maintained between "filling gaps" to respond to demands, and conserving resources for high priority programs.

In sum, we can state that the project can legitimately move toward heavy emphasis on training adult educators, especially those whose work influences rural development. At the same time DEMS can reduce its focus on other programs, with the expectation that demand for them will decrease as other organizations such as SIEC and SCOT become more proficient.

5. What kind of academic degrees should DEMS offer, if any?
This issue has already been raised in the discussion of academic level versus functional skills level raising. Swaziland appears to be behind other African countries, (perhaps because of its relatively late independence date), in calling for training and education relevant to its own needs, rather than accepting the imposed colonial system. Since the technological state of this "relevant training" is more advanced than it was in the early 1960's, perhaps the transition will be easier in Swaziland. Right now, however, Swaziland has not moved far away from highly valuing academic status based on the British system. Moreover, the university would be the least likely institution to discredit that system. Thus, if DEMS is to be respected as a university program, its courses should be kept in line with university standards. This does not appear to be an insoluble problem as long as a stratified range of programs is maintained, and those which do not merit university (or any academic) credit, are justified as practical training grounds for students in academic courses. In other words, DEMS can build up its Diploma courses in Adult Education and in Management and a variety of certificate courses. In addition, it can provide for academic credit for university students doing practical work in adult education. Supported by the pedagogical theory that values practical education, DEMS can sponsor its own and support other adult courses which teach functional skills but do not offer academic credit. These would be similar to "laboratory schools" which serve both as teacher training grounds and actual schools.

In order to increase the chances of success of this scheme, the DEMS program must remain extremely flexible, so that it can offer short term courses very rapidly to respond to particular requests, and experiment with a variety of adult learning situations. Also, it must be continually responsive to opportunities for university

students to undertake activities through DEMS relevant to their own course work and interests.

6. Is the experiential training model appropriate for meeting project goals? The immediate focus in this discussion will be on the training model employed for output in terms of staff. Output in terms of graduates, is a secondary matter. The project design in this case combines the components of U.S. technical assistance and participant training in such a way that they are best treated together in this analysis.

The two basic alternative models for training DEMS staff members are the "university" model and the "experiential" training model. According to the university model, participant trainees would follow a university course in the U.S. or in Africa, and U.S. technicians would lecture at the University College, Swaziland. According to the experiential model, U.S. technicians would train Swazi staff members in an intern arrangement at UCS. There are some possible combinations of these models. U.S. technicians could concentrate on building up the DEMS program without taking on responsibility for training counterparts (who would then go to the U.S. or elsewhere in Africa for participant training), or participant trainees could spend a portion of their time in training at UCS under the guidance of U.S. technicians and part of their time in the U.S. and possible Africa. It is this fourth alternative that is recommended for the project, with the insistence that the majority of participant training, (i.e., at least 2 of the 3 years) take place at UCS. (This recommendation is discussed in the following section of this technical analysis).

7. Is the staffing pattern appropriate? Competence in the DEMS staff is the most critical element of the project. Because of the fluid situation in which the staff must operate over the next several years and the variety of challenges to which it will be forced to respond with creative solutions and because DEMS cannot afford to operate with a staff larger than 6 full-time personnel, the effectiveness of these individuals cannot be overemphasized.

Yet, alternative staffing patterns are guided by various constraints. First, DEMS now has only three positions, with the expectation of expanding to six after 1980. Of the three current positions, the directorship is filled by an expatriate, the assistant directorship is vacant, but soon to be filled by an expatriate, and the third is filled by a Swazi citizen. According to Swaziland's commitment to localization, these three slots will all be filled by locals as soon as qualified people are available. The other three positions should be filled by Swazis. The university will permit foreign technical assistants to assume responsibilities in the university temporarily, provided that Swazis are being trained simultaneously to replace them.

The U.S. technical assistants will be most useful if they serve in the dual role of (1) implementing the adult education training facets of DEMS and (2) training the Swazis designated to fill the positions available in 1980 as their counterparts. This dual role can be carried out if the designated Swazis receive most of their training at the UCS in an interim type of arrangement. We strongly recommend that at least two of their three years be spent at UCS working in DEMS and doing graduate work at the university. Adult education expertise results from guided practical experience as well as theoretical knowledge, and since the concept of adult education advocated in this project is not the traditional one of continuing education, very little technical knowledge can be gained from academic settings far removed from the Swazi setting. Short-term studies at other African institutions of adult education, such as those in the East African network, would provide some exposures to what other nations have done. And short-term study in the United States would provide familiarity with up-to-date technological and theoretical knowledge, but a combination of African (outside Swaziland) and U.S. study tours should not exceed one year.

It is expected that the designated Swazis will enter training as university graduates. If they do not already have master's degrees, they should acquire them over the course of their training, so as to be academically qualified for university positions. This will entail the selection of a U.S. university able to grant a degree with one academic year spent on-campus.* Many institutions can negotiate such arrangements. This same university should be, if possible, the one contracted for U.S. university support to the project, thereby allowing the U.S. technical assistants to serve as academic supervisors of the Swazis during their UCS training phase.

Additionally, those Swazis selected to fill existing slots during the course of the project (there is already one) will profit from working as colleagues with the technical assistants. The major difficulty with this model is that each step of the training process depends on conditions and problems that cannot be determined beforehand, and therefore the success of the training program depends largely on the skill of the trainers. This project design cannot elaborate on the details of participant training at UCS, except in terms of broad statements of outcome. U.S. technicians hired as trainers will be expected to be experienced enough in experiential training to work without guidance from a preconceived training plan.

In spite of this, the experiential training approach appears to be far superior to the university lecture approach in this project because the project purpose is not to build up the university along the lines of the traditional British institution, but to facilitate the university's involvement in national development by

* See part 4, B3a, for University Contract justifications.

linking university resources to development needs. The university model assumes that there is a body of information which can be passed from one individual to others and applied to appropriate situations at will. In the case of adult education for the purposes of development, this is hardly true. Therefore, it is pedagogically more sound to place those who would learn about this matter in situations where they will experience actual problems and the viability of alternative solutions.

Entrepreneurial and organizational skills rather than academic teaching skills are being emphasized in the U.S. technicians scope of work for several reasons. The challenge to DEMS during the next few years is to strengthen a fledgling program by re-enforcing linkages with the agencies and groups it aims to serve. In an environment populated with a variety of adult education and rural development enterprises, an institution such as DEMS must build its reputation slowly by responding at first to specific needs, building up a good reputation, and eventually concentrating on adult education techniques which are not the traditional ones, but judged to be potentially more useful in the process of development than those now tailored to meet present expectations. Academic teaching skills are minimized here, because they are already available at the university, and because lecturing and classroom teaching should not be the primary mode of training in DEMS.

8. Are self-instructional materials appropriate and feasible for this project? Because the project will involve part-time learners and learners in centers far from the university, the materials used should not require a large number of contact hours with instructors. Also, they should be inexpensive and available in large quantities so that learners can afford to keep them. For these reasons, self-instructional packages, the use which is guided occasionally by the instructor, seem appropriate. They would cut down the learners' need to rely on a centralized, perhaps inaccessible library, and to depend on course notes for study and reference at home.

Although such materials are being developed on a small scale in some developing parts of the world, very little, if anything is available for use in Swaziland.

The task of their production entails ingenuity and skill. Above all, it demands the participation of the learners who will use them, to insure their appropriateness. DEMS appears to be advantageously situated for creating these kinds of materials (and concomitantly for developing a staff capacity to create them) for several reasons. First, other educational organizations in Swaziland have succeeded in producing good materials for other purposes: the Swaziland International Education Center, Sebenta, the Primary Curriculum Unit (AID assisted) and the School Agriculture Curriculum program are examples of expertise that might be called upon. Next, DEMS is an arm of the university, able to call upon high level

personnel in the faculties of Education, Agriculture, Professional Studies and others for assistance. Finally, there is a wealth of clientele eager to use such materials, and these can serve as good testing grounds.

B. Engineering Analysis

The increased emphasis and expansion of the Division of Extra-Mural Services (DEMS) at the University of Botswana and Swaziland (UBS) requires that additional physical facilities be constructed. Increased student population will require a dormitory to house 96 students. Unique and special courses of instruction will require the addition of three multi-purpose classroom-laboratory combinations designed and fitted especially for these courses. Additional instruction staff will require the construction of three senior staff houses on campus. Therefore, funds have been provided in this project for the construction of one 96 bed dormitory, three multi-purpose classrooms and three senior staff houses.

The 96 bed Hostel will be constructed using plans and specifications that were prepared for the construction of identical units presently in use on campus. The new unit will be sited in conformation with the University's Master Plan and will be in harmony with the general architectural form of the Campus as it now exists. Services (Water, Electricity and Sewer) will be connected directly to existing systems which have been judged adequate to handle the additional load. The quantity survey firm retained by the University have examined the plans and specifications and using actual cost of identical units to arrive at an estimated cost of this building complete with necessary equipment of E440,000. This cost includes funds for Wardens flats, earth works and contingencies and is considered accurate as of September 1977.

Plans and specifications for the construction of the three multi-purpose classrooms have been prepared by the architectural firm retained by the University. The rooms conform in space and design to standard norms established by the university and are sited in accordance with the overall University Master Plan. The designing architects and the quantity surveyor have prepared cost estimates for these classrooms and arrived at a cost of E210,300 for the construction and equipment. These costs include funds for necessary site works and contingencies and are considered accurate as of September, 1977.

Construction costs for houses have increased over the past few years to the point that previously used plans and specifications for house models result in costs beyond that considered reasonable by the University. The architects were commissioned to re-design and produce plans and specifications for a house that would cost less while still containing approximately the same area and harmonize with existing architecture. These plans and specifications have been produced and have been reviewed by the University Administration and REDSO Engineers and

found to be suitable. The designing architects and the quantity surveyors have prepared a thorough cost analysis for these buildings and arrived at a cost of E29,000 for each unit. These costs include funds for Contingencies, Roads and services and furniture and are considered accurate as of September 1977.

Cost reviewed by REDSO Eng

The cost of extension and installation of services for the above new construction has been calculated at E50,000. This figure can be considered fairly accurate since distances and elevations can be scaled from the Master Site Plan and material and labor costs are readily available.

Therefore, the projected construction and installed equipment cost of this project can be summarized as follows:

96 bed hostel	E440,000
Three Houses	87,000
Three Multi-purpose classrooms	210,300
Service Installation	<u>50,000</u>
Total estimated cost as of September 1977	E787,300
Escalation for inflation estimated at 18% p.a.	<u>141,714</u>
Total estimated cost as of September 1978	E929,014 = \$1,070,000 (E1.00 = \$1.152)

The above plans and specifications have been reviewed by REDSO Engineers and have been found to comply with accepted engineering standards and are in sufficient detail that construction can proceed. Proposed buildings are not pretentious and blend with existing architecture. Cost Estimates and the methodology used in their derivation have been reviewed and found to be reasonably firm and acceptable. It is therefore, concluded that statutory Requirements of Section 611 (a) of the Foreign Assistance Act of 1964, as amended, have been satisfied. ? ?

by REDSO Eng

C. Financial Analysis And Plan

1. Recurrent Budget analysis

Although the Third National Development Plan 1978-1982 is not yet available it is unlikely that it will embody a substantial change in priorities either within the educational sector or among the various sectors including education. Accordingly, the University of Botswana and Swaziland Development Plan 1976/77 - 1985/6 and the Ministry of Education's 1977 publication, A financial and Statistical analysis of Swaziland's Educational System with Projections to 1985, may be taken as providing a correct indication of GOS intentions for the educational sector and for UCS in particular during the project period. This project falls well within the priorities indicated in those documents and would absorb, over the project period and thereafter,

a level of recurrent expenditure which falls well within the capability of UCS to maintain without a substantial impact on other programs. The consistency of this project with stated UCS and GOS objectives augers well for continued support at the end of the AID commitment. Recurrent expenditure on education in 1975/76 was 22% of appropriated departmental expenditure and expenditure estimates for 1976/77 and 1977/78 indicate that same proportional allocation to education (educational expenditures as a proportion of total expenditure by GOS are much more variable, as well as lower due to substantial year to year variation in transfers to capital expenditure from the recurrent budget).^{*} Further, the UCS allocation in 1976/77 was 19% of the Ministry of Education budget. Although that share is projected to fall to 16% by 1985 it is projected to rise slightly over the years until 1982/83. The substantial growth in projected expenditure on education and for UCS indicates the capacity to finance the recurrent expenditure of this project, if the projected expenditures can in fact be made.

In the near term the budgetary position of GOS seems to be strong and thus the projections of Ministry of Education and UCS expenditures seem to be firm. In recent years, and in spite of a recession in the Republic of South Africa, GOS has shown a budget surplus (and its foreign payments position has been strong as well). Swaziland is a member of the Rand currency area and joins in customs union with the Republic of South Africa, Botswana, and Lesotho. The share of GOS revenue generated by customs and excise is variable in response to the growth in consumption of imports and excisable domestic production and in response to world sugar prices and the revenue generated by the sugar levy as well. Nevertheless, the division of revenues under the Customs Union Agreement provides a substantial degree of predictability of revenues from that source, since receipts are based upon the previous year's collections within the union (90% of Swaziland's imports come through the Republic of South Africa, thus the customs and excise taxes are collected there; they are disbursed to the other members of the customs union more than in proportion to their consumption of excisable items). In spite of variability in the share of revenues from customs and excise, between 25% and 45% for 1975/76 to 1977/78, the share from the three principal

* See Recurrent Estimates of Public Expenditure for the Financial Year 1977/78, p.9 and A Financial and Statistical Analysis of Swaziland's Educational System, p.82.

sources of revenue (customs and excise, income taxes and the sugar levy) is stable at 85%. Revenue sources appear to be sufficiently income elastic to assure adequate funds to sustain the GOS budget. Even the possible longer term effects of a deterioration of the Republic of South Africa economy are mitigated for Swaziland since 80% of its exports do not go through the Republic. Nevertheless the two economies are closely connected and economic dislocation in the Republic would have important consequences for Swaziland and its ability to carry out its expenditure plans.

The level of total recurrent expenditure necessary of UCS and DEMS to sustain the activities associated with this project is small enough that there is no reason to believe it would strain either the UCS ability to finance nor its capacity to administer the funds. The capital portion of the project will serve to sustain a level of physical expansion which is presently being managed by the university. The DEMS budget while now small (see Table B-1) can easily be substantially enlarged both because DEMS expenditures are a small proportion of the total UCS recurrent expenditure (see Table F-XX) and because there is a small planned budget surplus for contingencies (see Table F-XXI) along with planned expansion of established posts in 1981 sufficient to accommodate the planned expansion of DEMS staff.

UCS did not receive a direct subvention from GOS until 1975/76, although the College of Agriculture in Swaziland has been associated with the UBLS since 1966 and the Part I Center at Kwaluseni has been fully operational since 1972. Rather, UCS expenditures, less locally collected fees, were transferred to the UBLS central account and charged against the subventions of the three cooperating governments to that fiscal entity. Subsequent to the separation of the National University of Lesotho and UBS, GOS subvention has been made directly to UCS. Inspection of Table XXI will reveal that there has been some tendency for the expenses for administration and maintenance to rise as a share of total recurrent costs at UCS, to the detriment of the share going to academic departments. This shift in shares is the combined results of the increased administrative responsibility at UCS subsequent to the break up of UBLS in October, 1975, of the aging of a still very young physical plant, and of efforts to restrict the size of the faculty in order to reduce unit costs. Although the university college reported a small excess of expenditures over receipts for 1975/76 (see Table B-3) a small budgetary surplus is estimated for 1976/77 and 1977/78. Actual expenditure and revenue data for 1976/77 are not yet available for UCS as a whole.

1976/77 actual expenditures and receipts are available for the nine months, July through March, for DEMS and

are reported in Table XX for comparison with estimates for that year, with estimates and actual expenditures and receipts for the previous year, and with estimates for 1977/78. For 1975/76 DEMS expenditures fell substantially below those estimated due to the departure of the director for another post. The record for 1976/77 reflects the efforts of the current director to expand DEMS programs. Considerable success has been achieved in organizing new courses, but at the expense of substantial operating losses which have resulted in net departmental expenditures substantially greater than receipts, in spite of the director having obtained a contribution to costs, from the Ministry of Education in service training funds, beyond the subvention to the UCS.

Both the director of DEMS and the Bursar's office have failed to maintain control over the DEMS budget. A substantially larger excess of expenditure over receipts would have resulted were it not for savings due to the under staffing of DEMS. DEMS has a strong entrepreneurial director, which is all to the good as this project is designed, who needs to have some administrative assistance and to exercise some financial restraint. In several cases courses have been offered with enrollments too small to cover direct costs. This may be viewed as a loss necessary to expand the clientele of the university. The economic analysis of the project indicates that there is substantial economic value to student participants, the Ministry of Education, and society as a consequence of DEMS programs. This suggests that it should be possible to put DEMS on a more or less self supporting basis in so far as direct costs are concerned through higher fees or, if equity arguments are overriding ones, as they may be, through increased subventions to meet DEMS direct costs.

The amounts budgeted for DEMS for 1977/78 imply a reduction in DEMS expenditures below the actual expenditures of only nine months of 1976/77. Both the Rector and the Economic Planner of the UCS have given assurances that it is not their intention to reduce or restrict DEMS activities, but rather to see them expand. The 1977/78 budget allocation to DEMS has been justified as an attempt to exercise restraint on expansion until the staff of DEMS is expanded.

UCS has a history, while part of the UELS, of running over its recurrent budget. Under the accounting system and administrative system in effect at that time the consequence was the transfer of the excess expenditure, along with authorized expenditure to the central university (UBLS) accounts in Rome. The university council in Rome would then go to the cooperating governments of Botswana, Lesotho, and Swaziland for increased subventions to cover a combined university system excess of recurrent expenditure over revenues. Under that system the UBLS was not fiscally responsible

to any government. It was both de facto and de jure independent. As a result of the break up of UBLS one of the principle objectives of the GOS, making UCS fiscally accountable to GOS, was achieved. Although UCS is a de jure independent entity whose budget is determined independent of that of the Ministry of Education, its budget is largely supported by subvention through the Ministry of Education. The UCS subvention is a separate line item in the budget of the Ministry of Education and is determined as a result of the decisions taken by the University Council which include representatives of Establishments and Training (where principal responsibility for manpower training resides), the Ministry of Education, and the Ministry of Finance (which includes the Economic Planning Unit of GOS). Thus the de facto independence of political authority which UCS enjoyed in UBLS has been replaced by fiscal responsibility to local political authority in the UBS system.

With the establishment of the fiscal responsibility of UCS to political authority has come political pressure through the University Council to reduce the costs of the UCS. In this regard, the UBS Development Plan called for a reduction of established faculty positions from 86 to 79 through failure to renew the contracts of (expatriate) lecturers when they came up for renewal. These reductions have taken place, lowering faculty/student ratios. Efforts have also been taken to raise the faculty contact hours and to lower unit costs at the university generally. Further steps in this direction are being taken. Through contract revisions the university council is trying to raise faculty weekly student contact hours above the 12 now common at the Kwaluseni campus. Provisions for home leave and allowances, important expenses with a largely expatriate faculty, are also being reduced. In both regards the ability of the university council to reduce faculty costs through higher faculty student contact hours and reduced allowances will depend upon conditions of employment in the universities of other countries in which expatriates may find employment and upon the availability of local university qualified manpower (which will reflect of course the demands for that manpower in other sectors of the economy). With effective political control over the budget of UCS has come the first signs of political control over the content of university course work. The UBS Development Plan makes it clear that support for the university, and particular programs within it, depends upon the contribution being made to Swaziland's manpower needs. The principal means by which UCS can lower unit costs in the near term is through increasing the number of students and increasing average class size. The ability to do so is constrained by a lack of hostel space to accommodate a larger student body in the rather isolated location of the campuses.

2. Financial Plan/Budget Tables.

Total Project cost is \$2,796,000. This figure includes the Government of Swaziland's contribution of \$737,500, leaving AID's cost of \$2,058,500.

The cost of AID's inputs is estimated as follows:

Technical Assistance	\$ 730,00
Participant Training	\$ 62,500
Commodities	\$ 146,000
Other Costs	<u>\$1,070,000</u>
T O T A L	<u>\$2,058,500</u>

a. GOS inputs

The U.S. technicians will be provided housing and other benefits and allowances normally provided by the GOS to other expatriates occupying established positions at a similar level in the government service. The U.S. will finance the salary of the technicians and the difference in allowances necessary to recruit U.S. technicians. The GOS will also assume all responsibility for providing housing and hard furnishings.

The GOS will identify candidates for training under this project. Pay, allowances and benefits for such candidates will be the responsibility of the GOS. For those candidates selected for training outside the country, the GOS will also agree to finance all local costs prior to their departure and to maintain the trainees salary or family allowance, as and when appropriate for the support of non--accompanying dependents during the full training period.

The current UCS budget for the DEMS includes three professional staff and one clerical positions. Present plans call for the addition of at least three professional staff after the 1980 fiscal year.

The land for the facilities to be constructed is on the Kwaluseni campus of UCS and is included in the Master Plan for the campus.

The GOS will provide the necessary office space, equipment and materials for the use of DEMS and the U.S. technicians working with DEMS.

GOS Inputs

U.S. Technicians support	\$ 30,000
DEMS Budget (5 years)	\$400,000
Trainee Costs	\$ 22,000
Office Space and Equipment	\$ 40,000
Administrative Support	\$ 30,000
Rental Value of Classrooms	\$ 30,000
Fees for Courses	\$ 75,000
Radio Time Contributed by SBS	\$ 10,000
Land for Development	<u>\$100,000</u>
TOTAL	<u>\$737,000</u>

SUMMARY COST ESTIMATE AND FINANCIAL PLAN

(U.S. \$000)

PROJECT: UNIVERSITY COLLEGE, SWAZILAND

690-0081

SOURCE	AID		HOST COUNTRY	TOTAL
	FX	LC	LC	
Technical Services	780		40	700
Participant			25	25
Training	62			62
Commodities	146			146
Other Costs				
Construction		1,070		1,070
Local Support				
Costs			172	172
DEMS Budget			400	400
Land			100	100
TOTAL	988	1,070	737	2,795

COSTING OF PROJECT OUTPUTS/INPUTS

(in \$000 or equivalent)

PROJECT: UNIVERSITY COLLEGE, SWAZILAND

690-0081

PROJECT INPUTS	PROJECT OUTPUTS		TOTAL
	<u>1/</u>	<u>2/</u>	
U.S. Technicians	780		780
Long Term	(720)		(720)
Short Term	(60)		(60)
Participant Training	62		62
Commodities	146		146
Books	(22)		(22)
Equipment	(124)		(124)
Other Costs			
Construction		1,070	1,070
TOTAL	988	1,070	2,058

1/ Program
2/ Facilities

AID OBLIGATIONS BY INPUTS PER FISCAL YEAR

(in \$000)

	1978	1979	1980	1981	1982	TOTAL
Adult Education	180					180
Materials		180		180		360
Management		180				180
		(3) 18	(4) 24	(3) 18		60
						<hr/> 780
Participant Trng.		(3) 37	(2) 25			62
Commodities	146					146
Construction	670	400				1,070
TOTAL	996	815	49	198		2,058

D. Social Analysis

Introduction

This section is divided in two parts. The first contains a brief socio-cultural overview of Swazi society with special reference to contemporary problems of development. The second briefly describes the proposed project and focuses on several issues related to the success of DEMS which have particular relevance to USAID's goals and policy. The materials used in the preparation of the section are listed in the bibliography. The following three sources were utilized extensively in the first part: Kuper, 1965; Gani, 1975; and IBRD, 1977.

Part I Socio-cultural Overview

Population Characteristics

Swaziland is the second smallest country in Africa; it is land-locked between Mozambique and the Republic of South Africa. The population estimate was 576,000 in 1974. The vast majority of the population are Swazi, members of a Bantu-speaking ethnic group mainly Nguni in language and customs. Swazis comprise close to 95% of the population of Swaziland. Of the remainder, 3% are Zulu; 1.3% European; and 1% other non African. The yearly population growth rate in Swaziland is an estimated 3.2%, one of the highest in the world. Over 45% of the population is under age 45. Life expectancy at birth is 44 years; the literacy rate is approximately 30%. About 10% of the population live in urban areas.

Although the overall direction of authority and direction under the traditional system is clearly "topdown", the King does have commoner representatives and groups serving him, and a National Council, in an advisory capacity. In addition, many local political decisions are reached through community meetings at the local gathering place (Tinkundla) in which participation of all attending is encouraged. Also, as a last resort, families have the right to move out of an area if they do not like the chief.

While many features of the traditional are still in practice countrywide, the overall socio-political system has clearly changed in the recent decades. The least amount of change has occurred on Swazi Nation Land, where many of the older population retain a measure of the traditional ways, characterised by conservatism reinforced by magical-ritual beliefs. At the national level the trend has been towards greater complexity, described above, with the King exercising his authority at the apex of the system. Currently, the King's authority extends to the modern, as well as the traditional sector. He is the Constitutional King of all Swaziland and nominal head of the Swaziland government; the head of the only political movement in the country, as well as the traditional head of the Swazi Nation.

The movement of the Swazi Nation land in search of employment has been a logical option for men and women for decades. In some areas, as many as 30% of the men may be working in areas outside their homes. According to 1974 figures, an estimated 63,000 worked in the public and private sectors in Swaziland. Another 17,000 (and some estimates place the number at twice that figure) work outside the country.

Education and Manpower

The "gradualist" development policy of the monarchy and the British and a number of other factors including lack of facilities and finances for education, relatively little income generating activity in the Swazi land areas where the bulk of the Swazi population lives, and a ready source of unskilled wage employment on individual tenure farms, factories, and in the South African mines has contributed to the lack of skilled and educated manpower among the Swazi population. The basic problems and policy related to the education sector are discussed in USAID's Development Assistance Program, Annex B, 1974. Table C-II demonstrates the relatively small proportion of educated Swazi adults by sex. Age 15 is used as a cutoff based on the data available.

Table C-II Percentage Distribution of Swazi Population by Level of Education

<u>Age</u>		<u>No</u> <u>Education</u>	<u>Some</u> <u>Primary</u>	<u>Passed</u> <u>Primary</u>	<u>Above</u> <u>& Primary</u>	
15-19	Male	24	50	21	5	100
	Female	21	49	25	5	100
	Total	22	50	23	5	100
20-24	Male	25	39	20	16	100
	Female	21	48	20	11	100
	Total	23	38	29	8	100
25+	Male	50	31	12	7	100
	Female	56	32	10	2	100
	Total	53	31	11	5	100

Note the very small percentage of Swazis with any higher education. Note also the percent of women who have completed primary school; it is similar to men. At the higher level, however, women's educational achievement drops off sharply. This is likely attributable to the role of women in Swazi society, which is hierarchically inferior to that of men at all levels, but is most evident at the top of the spectrum. Note, finally, that the proportion of uneducated remains nearly as low even in the age groups 15-19 and 20-24; this pattern significantly reflects the slow pace of progress in education in the country in recent years.

With the implementation of a national educational policy which plans to institute a broad-gauged primary education program

available to all youth, and a relatively lean, highly-specific and specialized higher education program opened to the relative few who gain higher entrance, the above-described discrepancies in educational opportunity may even grow sharper.

It is for this reason, as well as a commitment to higher education in general as means to address Swaziland's development priorities within the context of the gradually changing dual society, that the USAID DEMS project was conceived. The specific features of DEMS, and its likely impact, will be discussed in the second half of this section.

Part II Project analysis

1. The project has been designed to address a number of needs emerging out of Swaziland's move towards a more prosperous, self-sufficient, equitable society. The project, in its turn, inevitably generates its own issues and needs which must be addressed to ensure and maximize its potential impact on the population of Swaziland.

Essentially, DEMS as now conceived is the "outreach" arm of the University of Swaziland. As such, it has a number of purposes which it achieves through a range of activities. A key feature of DEMS is its flexibility. The majority of the services it provides are in response to particular demands. Most programs are offered at a specified place at a regular time. Most also are designed to be undertaken as ancillary to other activities, scheduled for evenings, on Saturdays, during vacations. Courses and programs are rarely full time. Participation is voluntary, and entails costs in fees, learning materials, and opportunities missed from not being elsewhere during classtime.

To date, the extra-mural program has offered a range of different learning opportunities for self improvement, including diploma and certificate courses in business, management and other skills, "bridging" courses to enable students to pass the national secondary school exam, self improvement courses in car maintenance and crafts, and assistance to "new literate" programs in the countryside.

The USAID funded component intends to support the current program and consequently to help it move as quickly as possible into additional areas of "outreach" education and training, including training adult educators for their work in rural and urban areas, training persons in positions to design and manage adult education and related programs in the public and private sectors, and providing opportunities to full-time University students to do "up country" research and field work.

II. Beneficiaries

- A. It is anticipated that the majority of the direct beneficiaries - those who take DEMS courses-will represent a cross section of the Swazi population. If past experience is any guide, the main characteristic of DEMS students will be a willingness to invest time and money for self-improvement. Many DEMS students are and will be individuals who have been forced out of the formal stream of education for reasons largely beyond their control. For example, girls who drop out of school because of a father's preference for his sons' education, or because of pregnancy or marriage, for example, constitute an important portion of the target beneficiary group. Students from low status backgrounds who terminated their formal education prematurely will also be given an opportunity to prove themselves and improve their productivity under a DEMS program. This type of individual with an interrupted education experience constitutes a sizeable target population.

Table C-III shows the sectoral distribution of the population under age 20 eligible for DEMS courses. Over 60% live on Swazi National Land; 22% live in urban areas, and 16% are on individual tenure farmland:

Table C-III Swazi Men and Women Who Have Passed the Secondary Exam, by Residential Location, 1974.

	<u>SNL</u> ⁺	<u>ITF</u> ⁺⁺	<u>Urban</u>	<u>Total</u>
Men	3391	854	1191	5435
Women	2178	632	840	3650
Total	5569	1485	2031	9085

+ Swazi Nation Land Source: Gani, 1975

++ Individual Tenure Farms

As a flexible institution planted on the edge of the formal education system, DEMS can provide many individuals with a second chance. By so doing, it serves Swaziland as a safety valve permitting students with a general 10 year primary and lower secondary education to continue their education although they have missed the opportunity to enter the select ranks of the University.

The Spread Effect

It is safe to predict that the project benefits will spread from the direct beneficiaries to

other populations. Three significant trends are apparent. First, increased localization of the personnel working in the public and private sector is one anticipated outcome. Data from 1966 census and a recent demographic survey indicate that these posts are being localized, so that increased training of middle-level Swazis should improve Swaziland's manpower situation rather than promoting a "brain-drain" to other parts of Southern Africa. Table C-IV presents evidence for this trend. In the recent survey, a higher percent of Swazi people reported having been born in Swaziland rather than in another country. This change suggests that local manpower is increasingly taking over jobs which in the past required the importation of skills.

Table C-IV Percentage Distribution of Swazi Nationals and Others, Birthplace by Present Residence, 1974

	<u>1966</u>		<u>1974</u>	
	<u>In</u>	<u>Out</u>	<u>In</u>	<u>Out</u>
Swazi Nationals	91.5	8.5	94.68	5.32
Expatriates	14.7	85.5	14.21	85.79
Other Non Afr.	55.9	44.1	77.05	32.95
Total	89.4	10.6	93.38	6.62

Source Gani, 1975.

Second, a large proportion of the country's poor will gain indirectly, not only from the increased competence of middle-level Swazi manpower, but also from the increased sensitivity of middle-level Swazi employees to the problems and potential of rural development. The course leading to the Diploma of Adult Education would be one means of accomplishing this end. Another would be the facilitation of university students field projects through DEMS research/interim programs to generate data and ideas related to rural development projects. A third would be the development of curricula designed to increase awareness of national development problems, including rapid population growth, alcoholism, and overgrazing. A fourth would be the upgrading of civil servants enabling them to enter senior positions in Ministries and agencies dealing directly with rural development at the local level, and would profit greatly the rapid promotion of trained Swazis with practical experience in rural areas.

Third, a major issue regarding the potential spread effect will be the extent to which DEMS extracts people from jobs and activities related to improving rural welfare and erases them into new jobs which have far less immediate impact on rural and developmental problems. Clearly, some participants in DEMS will be pursuing a course of study which will bring them closer to the seats of power, convenience and wealth.

While acknowledging this likely trend, it is important to understand the overriding manpower priorities of the country - to increase the Swazi peoples' capacity to self sufficiency in manpower across the board. In the short term, it is likely that DEMS graduates will tend towards the urban areas, and, where the wages are high, to the private sector. As these positions are gradually filled however, the remaining positions in the public sector and in the rural areas will be attractive to DEMS graduates.

III. Socio-cultural feasibility

The existing DEMS programs have been in operation, for several years. The thrust of the courses has been towards improving the career chances of individuals with significant educational experience who have the motivation and the means to attend. The course locations have been limited for the most part to the Mbabane and Manzini areas. The project proposes to alter the shapes of DEMS by gearing it toward adult educators in rural areas as well as urban workers.

Another potential problem which occurs frequently in developed and developing countries alike is the "distance" between the national university and the Government agencies engaged in the task of achieving a measure of urban and rural development. At this time in Swaziland, it is generally recognized that the University is removed from the day to day problems of the country's development. DEMS is the primary element which can involve UCS more directly in the development process.

Thus, a key goal of the project must be to help DEMS achieve a reputation for effectiveness. The skills and flexibility of the DEMS staff and USAID technicians will constitute the crucial means for establishing such a reputation. To do so, they must develop and maintain close working relationships with existing institutions with related interests. In this regard, Sebenta National Institute, which has extensive experience in literacy training and preparing materials for adults in the rural areas, is a prime initial partner. This is especially

the case as DEMS and Sebenta have had a close working relationship in the past.

IV. Development issues of Prime AID Interest

Because of DEMS highly flexible role in providing courses to a diffuse clientele, it is difficult to be certain of its emergent shape over the next few years. Since it will respond to a range of different constraints and opportunities, it is difficult to predict the project's impact on several areas of major AID interest.

Little can be said, for example, about the project's impact on reducing Swaziland's critical problems of rapid population growth and the deterioration of the environment through over-grazing. Certain activities can maximize the possibility of impact. Certainly the inclusion of rural students and environment-related curricula could have a positive impact. University student field work in development issues is another potentially beneficial activity. Coordination of the DEMS programs with those of other agencies committed to solving these critical problems would be a third possibility. As USAID is involved in the health sector and in the National Rural Development Area program (which focuses on conservation), there should be sympathetic locally-experienced expertise to draw on in the near future.

The role of women is another prime USAID development concern. The impact of the project on women has been referred to throughout this analysis. Many women have not attained the level of schooling they aspired to for a number of reasons related to demands of motherhood and the relatively inferior position of women in traditional Swazi society. The high proportion of women attending DEMS courses indicates that their role as employees will be enhanced by the project.

In summary, the active coordination of DEMS programs with other programs directed toward rural development would help address the paramount USAID concern for participation of the poor majority in resolving problems of development in the rural areas. To wean DEMS and the University away from an overly academic orientation which characterises the University at present, and to spread DEMS institutional and programmatic capability from both geographically socio-economically will require a steady stream of up-to-date information, organizational imagination, great energy, and constant commitment. An essential element in the achievement of this goal will be the selection of U.S. technicians with the requisite abilities who subscribe fully to the project's overall orientation as well as to its present charter.

F. Economic Analysis

The need for an expansion of the UCS and DEMS program is most effectively judged on its economic merits within the context of projected manpower needs. It is possible to broadly define the training requirements implicit in near term manpower projections despite the limitations of such projections. It is clear (see appendix E, page 2) that there is an adequate supply of unskilled and semi skilled labor. The projections show a substantial shortage of middle and high level technical and managerial skills. The shortage will be exacerbated by increasing demands for such skills necessitated by GOS efforts to speed up localization and a continuing high growth performance of the modern sector.

Localization of the Swaziland economy is hindered by the rapid growth of the modern sector and its expanding demand for skilled management and technical personnel which the educational system has been unable to meet. Consequently, expatriates have and continue to play a critical role in running the modern economy (see appendix E, page 3,4). The latest available data indicates that in 1974, expatriates held 36 percent of professional and technical skill jobs, 58 percent of administration jobs, and 42 percent of other skilled jobs. The role of the expatriate in managing the modern sector and hence the national economy will grow, unless there is a sizeable increase in the capacity of the educational system to produce the required Swazi technical skills, both in numbers and quality. The alternative will be a manpower constraint on the growth process.

To meet projected manpower requirements as stated in the GOS Report on High Level Manpower Requirements, 1973-1982, the number of University entrants will have to increase significantly. This is particularly true in the science areas where shortages of trained Swazis can be expected to be most pronounced. To assure sufficient University intake to meet projected requirements for trained manpower, there will be a need for an expansion of enrollment at UCS. This in turn necessitates an expansion of UCS and the number of Senior Secondary School Graduates qualifying in science on the COSC exam.

The allocation of scarce resources to the expansion of the UCS and the DEMS program rather than to alternative investment opportunities emerges as a key issue. On the one hand, it is noted that Universities, in general, are relatively high cost institutions for countries at Swaziland's level of development. Secondly, the private benefits of University education typically accrue disproportionately, if not exclusively, to urban, relatively high income groups in society. The social benefits as well are likely to be felt primarily in the modern sector of the economy. There is then the question of the gain to the poor majority.

Cautionary notes with respect to the desirability of directing resources to the expansion of the UCS and DEMS

programs are far outweighed by the variety of gains attributable to the impact of these programs as well as the advantages of meeting trained manpower requirements from the Swazi nation. It is clear that DEMS is a force within higher education supporting greater equality of educational and economic opportunities. DEMS as the agent of outreach, the principal agent by which the population outside of the Manzini-Mbabane corridor will be affected by UCS activities. Through its organization of courses in outlying areas, DEMS, promotes an equitable distribution of educational opportunities between urban and rural areas. A more equitable distribution of economic opportunity would seem to follow. Furthermore, the training of local manpower by facilitating the replacement of expatriates in outlying areas may make a contribution to maintaining the income and quality of life of the rural population as the localization process goes forward (see appendix E, page 16).

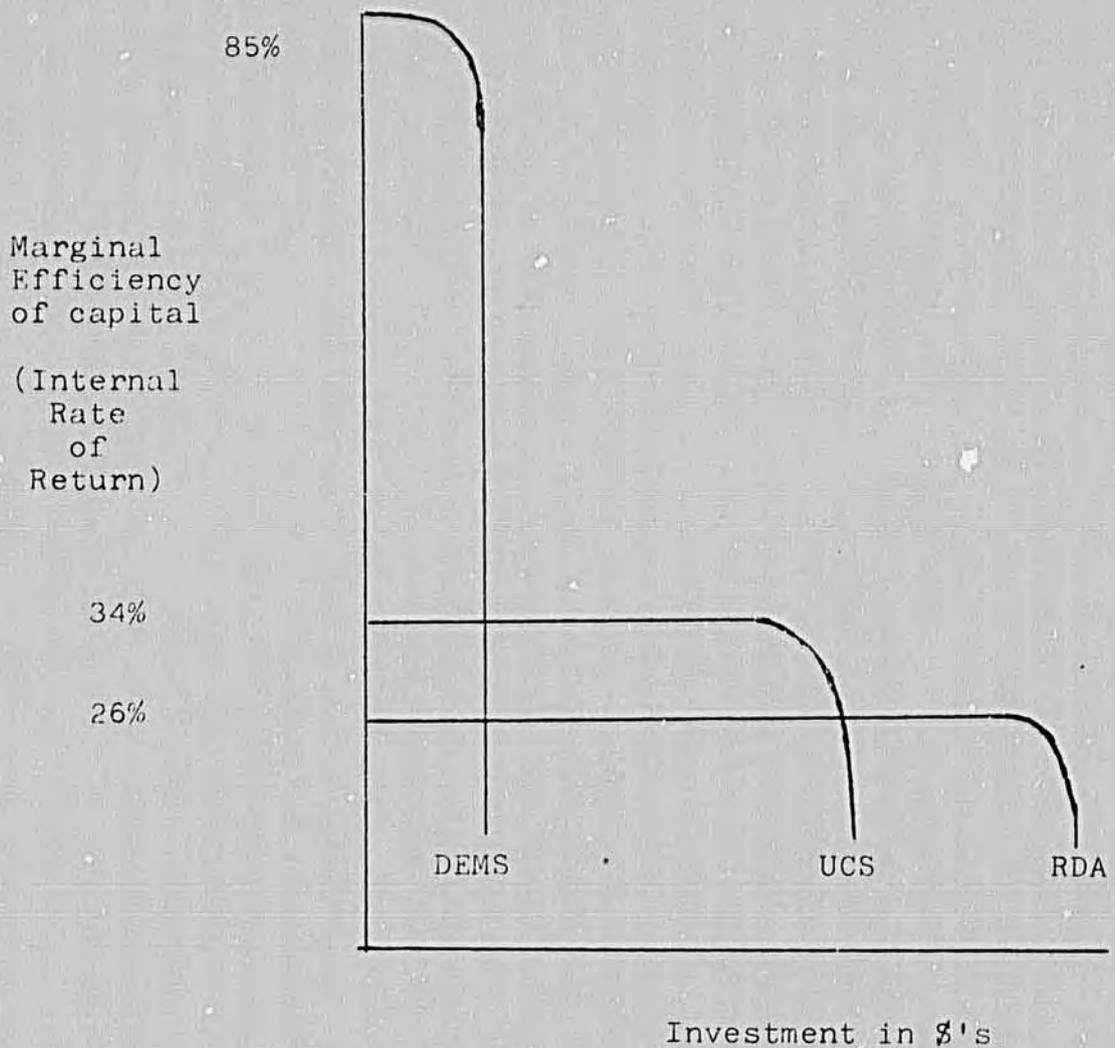
Not only is the expansion of UCS justified in terms of helping to meet national manpower requirements, but the estimated social rate of return is quite attractive (see appendix E, page 6-20). The social rate of return to general investment in UCS estimated at 36 percent. The rate of return is higher than the 26 percent rate of return calculated for the Rural Development Area program but far lower than the 85 percent rate of return to DEMS. It is noted that a rate of return in excess of 34 percent compares very favorably with the returns to university education reported for other developing countries by Psachoropolos and Hinchliffe in their comparisons of over thirty countries. These results are also consistent with their findings of generally higher returns to education the less developed is the country in question. In general the rate of return to investment in education has been found to exceed the return to investment in more conventional investment projects. The same result is found in this study. In summary, not only does investment in university education in Swaziland look attractive relative to the return on it elsewhere, and relative to the return on other investment in Swaziland, but investment in university education through DEMS appears to be extremely attractive.

Despite the attractive rates of return to education, these are "natural" restraints to the level of investment to be directed to the UCS/DEMS program. Essentially, the high rate of return of investment in education to the GOS, society and the private individual student is a somewhat "perishable" commodity. As noted in figure 1 we can expect the rate of return to fall rapidly if expansion is too vigorous. The return to higher education, in general, will fall rapidly with advances in localization (made possible by the UCS/DEMS program). With respect to DEMS, too vigorous an expansion might require the establishment of facilities and the hiring of full time staff in outlying areas. Such developments operate to negate much of the cost advantage now enjoyed by DEMS over other types of educational activities. As noted in Appendix E, page 17, much of high rate of return to DEMS is attributable to increasing the utili-

zation rate of resources already employed primarily in other activities. there are other limitations to the rate of expansion of the program such as the need to maintain the quality of students and staff which, if not observed would contribute to a decline in the quality of instruction and the social and private values of DEMS. The rate of return of investment would be expected to deteriorate under such circumstances.

Figure I

A Hueristic Comparison of DEMS,
UCS Generally, and the
Rural Development Project as an alternative



Note: No scale is provided on the horizontal axis for this hueristic representation since the specific value of investment and the rate at which the rate of return falls cannot be identified.

F. Environmental Statement

The project will have minimal impact on the environment. Given the nature of the project a Negative Determination is requested on the Initial Environmental Examination (see Appendix M). No major problems are anticipated either during or after construction. Construction will be designed to minimize disturbance of the land surface and to take advantage of natural land contour. Building locations will be chosen to preserve trees and vegetation. The disposition of waste water and sewage will be provided in accordance with established University systems. The laboratories will be equipped with a separate disposal system for corrosive and hazardous wastes. Buildings will connect directly to the city sewer and water system.

Part IV. Implementation Planning

A. Administrative Arrangements

1. GOS

(a) Ministry of Finance

The Grant Agreement will be signed by the Ministry of Finance after clearance with the Ministry of Education and the University College, Swaziland. The Ministry of Finance will also be responsible for the timely budgeting and allocation of funds to finance the GOS contribution to the project. The procedures for the handling of construction funds will be worked out between the University College, Swaziland and the Ministry of Finance prior to disbursement of funds under this project.

(b) University College, Swaziland

The UCS, through its division of Extra-Mural Studies, will be responsible for organizing, coordinating and carrying out the various project activities.

Based on the project design, and the provision of technical assistance described in this project, USAID feels that the administration has the capability to provide the necessary services required to carry out this project.

UCS is in the midst of a major campus construction effort. The University has contracted with several local consulting firms to provide the supervision which is required for this project. The UCS is using standard plans for all the construction under this project. These plans may be modified in minor ways, but other buildings on the campus have been constructed with the same basic plans. The University has one design consultant, which has served as the consultant for them from the beginning of the Kwaluseni campus.

The use of the present consultants would result in less expensive design and supervision; would insure conformity of construction under this project with the construction under other projects; and would permit more rapid completion of the construction phase of the project. There are no American construction firms or consultants presently working in Swaziland and it is not anticipated that the present project is sufficiently large to encourage the participation of U.S. firms.

2. AID Managment

Project monitoring, as well as the preparation and processing of project documents and correspondence, will be the responsibility of the RDO/OSARAC or his designee. The Chief of the Human Resources Development Division, OSARAC, will be the project manager. It is assumed that the position of Asst. HRDO will have been filled before implementation of this project begins.

3. Contract Implementation

(a) U.S. Technicians

The U.S. technicians under this project will be provided through an institutional contract. It is important that the U.S. technicians work together as a team and that a wide variety of skills and experience be combined in a very few individuals. It is also important that the training provided under this project be closely coordinated with the courses being or planned to be offered through the DEMS program. It is the opinion of the Mission that these ends can best be achieved through an institutional contract.

The U.S. technicians will function as a part of the staff of DEMS and will be directly responsible in their routine day-to-day operational functions to the Director of the division of Extra-Mural Services.

4. Participant Training

Trainees will be selected by the host government in consultation with U.S. technicians and with the approval by OSARAC. The Contractor will arrange the funding, placement and administrative support of the trainees.

5. Commodities

Commodities will be procured through P10/C's, utilizing AID's procurement procedures and policies. Specifications will be prepared by UCS/DEMS and will be reviewed by OSARAC.

B. AID Project Inputs

1. Personnel

(a) Long-Term Personnel

AID will provide the services of three full time specialists through an institutional contract. The professional skills of these specialists will cover the expertise required to assist the DEMS staff in its long-term development.

These U.S. specialists will also provide in-service training for the professional and technical staff of the DEMS in the area of their specialities. Equally important, these U.S. specialists will provide assistance to UCS/DEMS in identifying appropriate and qualified candidates for participant training under this project and in developing a training program for the participants which will meet their training needs.

(b) Short-Term Consultants

This project will provide the services of highly specialized short-term contract specialists with expertise required to accomplish particular tasks. It is anticipated that up to ten months of short-term specialist services may be required to achieve the objectives of this project.

2. Participant Training

AID will provide training opportunities for five DEMS staff, as follows:

Adult Education	(2)
Material Development	(2)
Management and Administration	(1)

3. Commodities

The commodities provided under this project will be those required to support the DEMS program. A complete list of the commodities will be found in Annex B.

4. Construction

The projected construction and installed equipment cost of this project can be summarized as follows:

96 Bed Hostel	.....	\$506,000
Three Houses	.....	\$100,050
Three Multi-purpose Classrooms		\$243,450
Service Installation	.....	\$ 57,500

Total estimated cost as of September 1977	.....	\$907,000
Escalation for inflation estimated at 18 percent p.a.	.....	<u>\$163,000</u>
Total estimated cost as of September 1978	.....	<u>\$1,070,000</u>

During the preparation of this paper, agreement was reached with the GOS to use the Fixed Amount Reimbursement (FAR) method of disbursement for all construction components, i.e. technician housing and the DEMS facilities. In view of the substantial flow required over the construction period agreement was reached that AID would provide a series of advances to alleviate undue strain on the GOS operating budget. The initial advance planned is 25% of construction costs with a subsequent advance of 25% each to be timed to physical construction progress. The balance of 50% is to be reimbursed upon completion and acceptance of all facilities. REDSO engineers will certify to physical progress and completion in accordance with plans and specifications. Both AID and the GOS agree that FAR is the preferred method of disbursement. The advantages of reducing documentation and administrative paperwork and assuring a timely delivery of contract funding far outweighed any disadvantages of the FAR method or advantages of other methods. Detailed procedures for FAR disbursement will be included in the Grant Agreement.

C. Implementation Plan

December, 1977	PP Approved	AID/W
January, 1978	RFP Prepared for Technical Assistance Contract	AID/W
	Grant Agreement Signed	GOS/OSARAC
	Housing Identified for U.S. Technicians	UCS
	Request for Tenders Advertised	UCS/REDSO
March	Technical Assistance Contractor Selected	GOS/OSARAC
	Building contractor selected & mobilized	UCS/REDSO
April	TA Contract signed	GOS/OSARAC/
	U.S. Technicians Selected	Contractor GOS/OSARAC/ Contractor
July	U.S. TA Arrives (Adult Educator)	GOS/OSARAC/Cont.

	Book and Equipment Lists Reviewed and Orders Placed	UCS/OSARAC/Cont.
	DEMS Development Plan Regun	UCS
August	Staffing Needs of DEMS Reviewed	UCS/OSARAC
September	Participants Selected	UCS/OSARAC
	House Construction Completed	UCS/REDSO
October	Consultant Needs Reviewed	UCS/OSARAC
November	DEMS Development Plan Completed	UCS
December	Review of Development Plan Completed	GOS/OSARAC
	Multi-purpose Classroom Construction Completed	UCS/REDSO
January, 1979	Joint Evaluation of Project Progress TAs Arrive (Industrial trainer, Materials Spec.) Books and Equipment Received	GOS/OSARAC
March	96 Bed Hostel Construction Completed	UCS/REDSO
July	Joint Evaluation of Project Progress	GOS/OSARAC
August	Three Participants Depart for Training Review and Update Development Plan	GOS/OSARAC UCS
January, 1980	Joint Evaluation of Project Progress	GOS/OSARAC
June	Three Participants Return from Training TA Departs (Adult Educator)	
July	Joint Evaluation of Project Progress	GOS/OSARAC
August	Two Participants Depart for Training	GOS/OSARAC
November	Review and Update Development Plan	UCS
December	TA Departs (Industrial Training)	
January, 1981	Joint Evaluation of Project Progress First Draft of Curricular Materials Completed	GOS/OSARAC UCS
June 1981	Two Participants Return from Training	
January 1982	Joint Evaluation of Project Progress	GOS/OSARAC

June 1982	Final Draft of Curricular Materials Completed	UCS
July 1982	Review and Update Development Plan	UCS
November 1982	Final Project Evaluation	GOS/OSARAC/Cont.
	Final Contractor's Report	
December 1982	Last U.S. TA Departs	

D. Conditions, Covenants and Negotiating Status

The GOS is in full agreement with the substance as well as with the design of the project. The University College of Swaziland, the Ministry of Education and the Ministry of Finance were provided copies of the project paper in draft. The three units of government concurred with the contents of this paper.

The GOS was also briefed on and has concurred in principle with the conditions and covenants that will be included in the Grant Agreement. It is anticipated that conditions precedent to disbursement will require completion of designs, plans and specifications, executed contracts for construction and supervision of construction. Covenants will require the GOS to provide housing for three TAs in University housing in the Kwaluseni vicinity; select Swazi trainees and make them available for on-the-job training within six months after the arrival of the first U.S. technicians; and add three academic positions to the staffing authorization of the Division of Extra-Mural Studies not later than the beginning of 1980-81 academic year.

E. Evaluation Plan

The evaluation plan designed for this project is divided into three major segments, i.e. (1) the continued evaluation process which has been incorporated as an integral part of the project; (2) annual project appraisal reports (PARS); and (3) a mid-project evaluation.

1. At the end of each six months period, each TA will submit a report describing the activities he has undertaken and an evaluation of the success he has had. The report will also include a description of obstacles to project development and recommendations for overcoming those obstacles. Representatives of GOS, other elements of the University College of Swaziland and the Office of Southern Africa Regional Activities Coordination (OSARAC) will participate in an evaluation session during each six-month review process.

2. OSARAC will submit annual project appraisal reports in accordance with AID regulations. The preparation and submission of the PARS to AID/W have been timed to immediately follow the yearly project evaluation. REDSO will provide assistance in the preparation of that section of PARS that will deal with engineering and construction. REDSO/Engineering will also prepare construction completion reports after the completion of the construction scheduled to be provided in this project.

3. Mid-Project Evaluation

The primary purpose of this mid-project evaluation will be to re-examine the feasibility of achieving the project goal, purpose, outputs and inputs, and in particular the linkages between inputs, outputs, purpose and goals. In this context a detailed assessment will be made of (a) the performance of all input factors (personnel, participant training, commodities) and all action agents (contractor, other donor, host country) and (b) actual quantitative and qualitative progress toward outputs, purpose and goal.

This evaluation is to be carried out in January 1980, jointly by NUL, GOS and AID, within the general framework of the agency Project Evaluation Guidelines.

APPENDIX A

LOG FRAME

Goal

To assist Swaziland in developing the middle-level manpower required to achieve national development objectives.

Indicators

The assumption of key middle level manpower positions by qualified Swazi.

Assumptions

1. Education and training will continue to have a high priority in Swaziland.
2. Swazi citizens, particularly in the 20-35 age groups, desire to improve their qualifications.
3. Qualified Swazi choose to work in Swaziland rather than in the Republic of South Africa.

Means of Verification

Annual reports prepared by GOS as part of its localization program.

Project Purpose

To increase the capacity of the University College of Swaziland's Division of Extra-Mural Services (DEMS) to meet mid-level manpower training needs.

EOPs

1. Improved organization, curriculum and teaching.
2. Outreach program expanded to training centers outside the Mbabane-Manzini corridor.
3. Capacity to supply courses in adult education and management to meet most of Swaziland's effective demand.
4. Trained and experienced local staff.
5. Adequate physical facilities to service training needs and staff housing requirements.
6. Increased University involvement in development-related activities.

Assumptions

1. Sufficient Swazi staff can be allocated to the programs to permit orderly staff development and to plan and organize programs as desired.
2. There will be no decrease in funding for University programs.
3. DEMS has sufficient priority to obtain the necessary resources, human and material, to carry out its programs.

Means of Verification

1. (a) Annual reports of DEMS activities
(b) Inspection of classes
2. Inspection
3. Inspection of Plan
4. Personnel records

Outputs

1. Trained and experienced Swazis directing and staffing for DEMS program.
2. Significant expansion of courses offered and increased attendance in adult education and management programs.
3. University students involved in DEMS development-related activities.
4. High quality curricula and teaching/learning materials produced for DEMS programs.
5. Physical facilities constructed.
6. Expanded course offerings and attendance in 10 training centers outside of Mbabane-Manzini corridor.

Magnitude of Outputs

1. (a) 5 staff members trained in Africa and/or U.S. at the Master's degree level.
(b) 70 part-time tutors will have received in-service-training.
2. Capacity of 1100 students per year.
3. 10% university students involved in DEMS development-related activities.
4. Curricula and teaching materials for diploma courses in adult education and business management.

5. 96-bed hostel, 3 staff houses, 1 classroom/laboratory block.

Means of Verification

1. Personnel records
2. Enrollment records
3. Inspection of materials
4. Inspection of campus

Assumptions

1. Funding by AID and GOS will be available during the project.
2. Adequate U.S. personnel can be recruited for the advisory positions.
3. Suitable Swazi candidates can be made available for training.

Inputs

1. <u>U.S. Inputs</u>	Total	2,058,500
(a) <u>U.S. Technical Assistance</u>		780,000
(1) Adult Education Specialist <u>24 months</u> .		
(2) Materials Development Specialist <u>48 months</u>		
(3) Management Training Specialist <u>24 months</u>		
(4) Short-Term Consultants <u>10 months</u>		
(b) <u>Participant Training</u>		62,500
(c) <u>Commodities</u>		146,000
(d) <u>Other Costs</u> <u>Construction</u>		1,070,000
2. GOS Inputs	<u>Total</u>	<u>737,000</u>

Means of Verification

1. AID and GOS records.

APPENDIX B

Commodities

a. Equipment and Supplies

<u>QUANTITY</u>	<u>DESCRIPTION</u>	<u>AMOUNT</u>
3	35 mm sound film strip projector	1,050
3	35 mm slide projector	600
2	Overhead projector	510
5	Portable screens	600
6	Portable cassette tape playback recorders	275
1	Cassette Duplicator, Professional model, to record up to six cassettes from reel or cassette original	3,800
1	Mimeograph Duplicator	2,000
1	Electronic Scanner	2,000
10	Portable blackboards	500
1	Calculating machine, desk	200
1	Typewriter, electric	750
4	Typewriters, manual	600
1	Photocopier	1,000
2	Microfiche Readers	200
6	File Cabinets	600
20	Meters, Library shelving	3,000
5	Carrels	250
10	Desks	1,000
10	Posture chairs	500
2	Display cabinets	200
10	Drawers, expandible and catalogue	100
2	Media storage cabinets	200
5	Table	250
30	Chairs	600

<u>QUANTITY</u>	<u>DESCRIPTION</u>	<u>AMOUNT</u>
	Photocopy supplies	500
3	Minibuses or carryalls	27,000
3	Jeeps or I-H Blazers	24,000
1	Bus, 30 passenger	30,000
		<hr/>
		102,285
b. <u>Books for DEMS Libarary</u>		
1,500	at \$15 each (CIF)	22,500
		<hr/>
		124,785
	Contingency	21,215
		<hr/>
	T O T A L	146,000
		<hr/> <hr/>

APPENDIX C

REQUEST FOR WAIVERS

JUSTIFICATION FOR SOURCE AND ORIGIN WAIVER FOR CONSTRUCTION MATERIALS AND APPROVAL TO DEVIATE FROM HANDBOOK 11 POLICY LIMITING EMPLOYMENT OF THIRD-COUNTRY NATIONAL FOR AID-FINANCED CONSTRUCTION WORK TO 20 PERCENT OF THE NON-LOCAL WORK FORCE

The cost of construction materials is estimated at \$535,000 i.e. about 50% of the total cost of construction. Although it is not expected that all materials will be procured from South Africa, a waiver is requested for the full estimated cost.

Materials such as cement, steel sheets, roofing, window frames, plumbing fixture, etc. are normally imported from South Africa or the United Kingdom. For the most part, these are manufactured to standard (size, thread, units of measure, etc.) different from and incompatible with U.S. specifications. Similarly, electrical materials and supplies are 220 volt, 50 cycle, contrary to standard U.S. specifications. It is essential that facilities be constructed using fixtures and materials for which replacement parts and service facilities are readily available in Swaziland.

It would not be practical to purchase U.S. items in the quantities needed when private dealers in Swaziland are equipped only to service and repair equipment made in South Africa and the United Kingdom. Moreover, considering shipping costs and the quantities involved, U.S. delivered prices would substantially exceed prices for comparable items procured in South Africa. The long lead time required to procure from U.S. could also delay project implementation if construction of the institute and housing for AID-financed technicians was delayed. The severe shortage of housing in Swaziland makes it imperative that construction begin at the earliest possible date. Thus, a request is herein made for the approval of a procurement source and origin waiver from AID geographic Code 000 (U.S. only) to Code 935 for procurement of construction materials.

The Contractors that will construct the institute and TA houses, may require technical and supervisory services of TCN's to handle electrical, plumbing, and other design and installation since local expertise may not be available. As the total cost of construction will be only about \$1 million, U.S. firms and personnel will not likely be interested in this work. Thus, as has been the custom of OSARAC in previous project papers that included construction as a component of the project, a request is also made herein for approval to deviate from the policy expressed in AID Handbook 11, chapter 2, which limits employment of third country nationals for AID-financed construction work to 20% of the non-local force.

JUSTIFICATION FOR WAIVER OF SOURCE AND ORIGIN REQUIREMENTS
(U.S. ONLY) OF FAA SECTION 636 (i) FOR VEHICLE PROCUREMENT

Seven vehicles that will cost the equivalent of approximately U.S. \$81,000 will also be AID financed. Approval will be required for a waiver of the requirements (U.S. only) of the FAA Section 636 (i) to allow the purchase of 6 project vehicles and a project bus manufactured in AID geographic Code 935 countries.

The need for this waiver is based on: (a) the lack of spare parts in Swaziland for U.S. manufactured vehicle with resultant long down-times as parts are obtained; (b) the lack of mechanics with an understanding or experience in maintaining U.S. manufactured vehicles which result in improper and inadequate repair; and (c) the safety hazard to U.S. staff presented by left-hand drive vehicles on narrow, twisting mountain roads and as other vehicles are met or passed.

Virtually the only vehicles of U.S. manufacture in Swaziland are those which AID has provided under other projects. While these vehicles have provided good service there have been problems in securing spare parts which are becoming more serious as the vehicles grow older and require more frequent and extensive repairs.

The problem of spare parts is compounded by the lack of mechanics who understand the componentry of U.S. vehicles. Consequently, even when spare parts are available, they are often improperly utilized resulting in a prompt need for additional repairs and additional down-time. For the AID-financed staff these vehicle breakdowns have seriously hindered the performance of their duties. The lack of service and spare parts for U.S. manufactured vehicles also present a risk to the health and lives of the persons required to operate the vehicles.

Additionally, the left-hand drive of U.S. vehicles is a genuine hazard accentuated by the large and clumsy configuration of these vehicles designed for wide and well-maintained roads. In Swaziland, the long rainy season with frequent heavy fogs on mountain roads with sharp curves and steep grades demands visibility not possible with a left-hand drive vehicle. Passing other vehicles is particularly hazardous.

Vehicles manufactured in the Republic of South Africa are an appropriate substitute for U.S. vehicles. These vehicles are produced by U.S. subsidiaries (Chevrolet, Ford, and International Harvester), spare parts are readily available and local mechanics are familiar with the vehicles and able to properly carry out repairs.

Therefore, a waiver permitting the procurement of the indicated small number of vehicles from a Code 935 country is considered justified and necessary.

APPENDIX D

Economic Analysis

There are substantial manpower shortages at the middle and high level in Swaziland. These shortages are likely to be exacerbated by continuation of the rapid growth of the modern sector and by governmental pressure for localization. The expansion of UCS, generally, seems to be justified by these manpower requirements. The social rate of return to general investment in UCS, at 36%, is higher than that to such an alternative as the Rural Development Area program (26%) but is exceeded by the 85% return to DEMS activities of UCS, in particular. The similarity of rate of return to GOS and to society as a whole suggests that rational and informed (it is not clear the latter condition is met) action by GOS with respect to allocations to UCS will be responsive to the social value of UCS activities. The higher rate of return to DEMS activities reflects its cost advantages in raising the utilization rate of resources primarily employed for other purposes and the absence of the opportunity cost of foregone income for its students. Similarity of the social and private rates of return, as well as the high private rates of return, to DEMS activities indicates that they can be largely self supporting of direct costs. Investment in UCS, although less so for DEMS, is likely to reinforce the forces of dualism in Swaziland and this project should be complimented by projects which off-set such effects. DEMS is a force within higher education supporting greater equality of educational and economic opportunity. Conservative expansion of UCS/DEMS activities

is proposed because the rate of return to such activities should be expected to fall rapidly in response to over expansion. Although the ability of UCS to meet its commitments to donors is strained, the small additional demands on such resources implied by this project make it likely that such local resource requirements will be met.

Both the economic evaluation of the University College of Swaziland (UCS) and that of the Division of Extra Mural Studies (DEMS), in particular, should be conducted in the context of the manpower needs of Swaziland. The University of Botswana and Swaziland Development Plan 1976/7-1985/6 clearly places the plans for the future of UCS in this context. However, precise estimates of future demand for trained manpower are not available. The university development plan is dependent upon estimates of manpower needs based upon a 1969 survey, updated in 1974. A manpower survey is currently underway, the results of which will not be available until after October, 1977. That survey will inventory technical, administrative, and managerial employment positions and vacancies at all educational levels above the Junior Certificate. Although the Third National Development Plan 1978-1982 is not yet available it seems certain that it will mirror the concern shown in the Second National Development Plan 1973-1977 for restricting the growth of senior secondary and university education to those levels and to those areas necessary to meet future manpower requirements.

In general the manpower situation in Swaziland is one of adequate supplies of unskilled and semi-skilled labor accompanied by substantial shortages of middle

and high level technical and managerial manpower. The shortages of Swazis trained and experienced in these areas are met by expatriates. In spite of the objective of "localization" embodied in the Second National Development Plan 1973-1977, requests from the various government ministries for permission to hire expatriates grew throughout the plan period. In the area of public services perhaps 400-500 expatriates are employed. Highly skilled positions are held predominately by white expatriates. A Financial and Statistical Analysis of Swaziland's Educational System With Projections to 1985, a document issued by the Ministry of Education this year, shows 311 of 524 qualified secondary school teachers in 1975 were non citizens. Further the projections of future supply of secondary school teachers show a substantial, although declining, role for expatriates in secondary education through 1981. The dominance of teaching posts at UCS by expatriates is even more pronounced. The role of expatriates in the private sector is also pronounced. The number of non citizens employed there is estimated at 2,000. Expatriates have recently been estimated at 5% of the employed labor force in the modern sector receiving 24% of the wage bill. In 1974, 36% of professional and technical jobs, 58% of administrative jobs, and 42% of skilled jobs were held by expatriates.

Foreigners and foreign firms dominate or control almost all of Swaziland's industrial production, its commercial agricultural production (although the government is acquiring a substantial share in the sugar industry), export trade and much of even the domestic system of distribution and wholesale-retail trade. Although undeniable

progress in localization has taken place in an absolute it has been hampered in a relative sense by the enviable record of economic growth of the modern sector of Swaziland. Although comprehensive official national accounts statistics are not available for years since 1972/73, estimates based on World Bank data for 1971/72 through 1975/76 indicate an average annual rate of growth in GDP at current market prices of 24% and of at least 10% in real terms. Throughout this time GDP has exceeded GNP by as much as 10% -- as a result of net outflows of factor income. The traditional sector of the economy has lagged behind the growth of the modern sector with a contracting share of national product. Localization of the Swaziland economy is hindered by the rapidly growing modern sector, now producing 80% of GDP, and by the expanding demand for labor from that sector -- which is easily satisfied locally at the unskilled level but is inadequately met by Swazi manpower for middle and high levels of managerial and technical skill. The manpower problem implied by these events is compounded by current pronouncements from the Deputy Prime Minister's office demanding complete localization by 1981.

Table 1, from the Kingdom of Swaziland Report on High Level Manpower Requirements 1973-1982, provides projections of the number of entrants needed at the University of Botswana and Swaziland (UBS) and other educational institutions in order to meet the indicated manpower requirements. The estimates are from a 1973 base and assume sectoral growth rates of 5% to 7%. The upper and lower points of the range reflect optimistic and pessimistic assumptions, respectively, with regard to the

growth of job opportunities and the rate of localization. However, in the light of the recent growth experience of Swaziland it appears that even the upper bound estimate may be too conservative. The over all rate of growth on the economy has been considerably higher than that on which the projections are based and the growth of the modern sector, the demand of university trained manpower, has been much faster than that on which the projections are based. Although Tables II through V indicate a shortfall of entrants to UBS to meet the manpower needs in science based areas and a surplus in those to meet the non science based areas, continuation of rapid economic growth with the same sectoral divergences as have been recently experienced, would imply even greater shortages of Swazis trained in the science areas and no necessary surplus in the graduates of non science areas.

Table VI indicates a general shortage of university entrants qualified in science, if university intake in this area is to be sufficient to meet manpower needs. It seems likely that the results of the ongoing manpower survey will indicate further need for the expansion of enrollments at UBS beyond that indicated in Table VII, especially in the science based areas. To meet such requirements would require expansion of the University College of Swaziland (UCS) and of the number of Senior Secondary School graduates qualifying in science on the COSC exam. (Further expansion of senior secondary school leavers passing the COSC would also permit greater selectivity among candidates entering UBS in non science areas, as well.)

Universities, in general, are relatively high cost institutions for countries at Swaziland's level of development. Cost data for UCS are summarized in Table VIII. Projections of university full time student enrollments and of GOS subventions to UCS indicate falling unit (average for student) recurrent cost (expenditures supported by student fees not included) through 1981. Assessment of the returns to university education in Swaziland will require the utilization of cost data for three economic entities: the individual student, the GOS, and the Swaziland society. For students sponsored by GOS, the overwhelming majority, all fees are paid and a book allowance is granted. The principle cost for a sponsored student will be the opportunity cost of income foregone. This opportunity cost is not borne by the GOS but it does bear the costs of the subvention to UCS, student fees and allowances, and capital costs for UCS. Social costs of university education include the subvention of GOS to UCS recurrent expenditures, student tuition (which is reflected by university expenditure in excess of the recurrent expenditures supported by GOS) but not residence hall fees since society would shelter and feed students in any case, capital costs of UCS, and the opportunity costs of income foregone by students. (Although there is some unemployment of 11% among students who have passed their "O" levels on the COSC it is unlikely that it affects that group with first or second class passes which is the source of entrants to UCS.)

In calculating the return to investment in education to each economic entity it is appropriate to use marginal costs, the change in total variable costs per unit change in enrollment. Typically it is possible to ignore capital

costs, as fixed costs, in the calculation of marginal costs. In this case, however, that is not possible. Table VIII indicates falling marginal recurrent costs in terms of both the GOS subvention and also in terms of GOS sponsorship of students (in that case all university recurrent expenditure is allocated to the sponsored students on the grounds that they are the sole reason for GOS support to UCS). The falling unit costs, noted previously, are the consequence of marginal costs below unit costs, i.e. the capturing of economies of scale of output as the relatively fixed teaching faculty educates larger numbers of students. Such a decline can be, and is in this case, accompanied by rapidly rising short run marginal costs. The availability of hostel space has constrained the expansion of the UCS student body. Thus expansion of hostel space is necessary to admit more students and to capture economies in the utilization of faculty. In this case the costs of hostel expansion must be included in calculation of marginal costs (long run) and added to marginal recurrent costs.

Just as the three economic entities of student, government, and society may be differentially burdened by the costs of education they may also differentially benefit from its product. Typically the economic benefit may be represented by wages earned by a graduate in excess of those which would have been earned at a lower level of education. To value the benefits of education in this way is to assume that the graduate's wage reflects accurately the value of his work and that his increased productivity is the only valuable product of his education. Although the non economic benefits of education are recognized, only the economic benefits are easily quantified and only they will be included here. In the presence of substantial educated unemployment there might arise a divergence between the returns to an individual in the form of income and the returns to society (if a more educated person simply

replaces a less educated one rather than increasing the value of total output by the amount of his work). Such a possibility seems remote in the Swaziland context, at least at the university level. Indeed in the Swaziland case the wages received by a graduate may substantially underestimate the social value of his product.

The principle benefit to GOS and to the society of Swaziland of a graduate from UCS is the replacement of an expatriate, in fact or in effect, if rapid expansion of the economy continues to create a demand for educated labor faster than qualified Swazis can be educated. Although the locally recruited expatriate is paid, in government service at least, at the local salary scale, many expatriates are supported in whole or in part by foreign donors. If such technical assistance were made unnecessary by the availability of qualified Swazis both the Swaziland society and GOS could expect to continue to receive substantial foreign aid in other forms in lieu of technical assistance. Thus the benefits of a Swazi university graduate to his society and GOS might be valued at the donor cost of providing an expatriate to do the same work under the assumption that a similar foreign aid commitment would be forthcoming in another form if technical assistance were unnecessary. Although it costs U.S. AID \$ 50,000 - \$ 70,000 in salary, allowances, travel and overhead costs to provide an expatriate to Swaziland for technical assistance, other donors may have lower costs. It is also likely that a dollar for dollar matching of technical assistance spending reductions with increased spending on other forms of aid would not be forthcoming.

The value to Swaziland of replacing an expatriate with a qualified Swazi might be very conservatively valued at E10,000 (or \$ 11,558), for the sake of illustration. It would not be uncommon in the private sector to find expatriates earning such an income.

No claim is made here that an exact rate of return to education in Swaziland can be calculated. Rather the approach is taken of showing the responsiveness of the calculated rates of return to various assumptions, regarding the values of costs and benefits, which seem reasonable and which will establish the probable range of the returns to education in Swaziland. The rates of return to UCS degree programs and diploma programs offered in residence and part time through DEMS are all relevant to this project as is the economic value of other DEMS activities.

On the basis of the costs to each of three economic entities the internal rate of return to a UCS degree program has been calculated by valuing the benefits both at the civil service scale at which a graduate would enter with a degree (less that at which a non graduate would enter) and also at an assumed value, to GOS and the society of Swaziland, of replacement of an expatriate with a citizen doing the same work. Table XI reports the results of those calculations. The rate of return to investment in university education (degree programs) is approximately equal for the society of Swaziland and for the GOS. The value of the rate of return to those entities varies from 14% to 7% when benefits are valued at the differential earnings of a Swazi graduate. The range of the

rate of return varies from 14%, when no adjustment for university retention rates nor for life expectancy and labor force participation of graduates is made, to 7% when these admittedly imperfect adjustments are made.

The adjustments for life expectancy and labor force participation (all participants are assumed to be employed) are imperfect because they are based on data for the whole of the African population of Swaziland -- in the absence of the availability of data stratified by urban-rural domicile or by education level. It is likely that age specific life expectancy is substantially higher for university graduates than for the population as a whole and this could substantially raise the rates of return above the lower bound estimate. Also, the rates of return have been calculated on the basis of a twenty year time horizon since few developing countries find it possible to employ a planning period longer than that. Evaluating investment in education over a longer time horizon would raise the calculated rate of return.

When the benefits of training a university graduate are valued at E10,000, an assumed value of replacement of an expatriate, the range of rate of return to GOS is 34% to 45%; it is 36% to 48% for the society of Swaziland. Again, the range of estimates reflects adjustment (the lower return) or the lack of adjustment (the higher return) for retention rates at the university and for life expectancy and labor force participation rates. (At such high rates of return lengthening the time horizon would have a negligible impact on the calculated rate of return.) This range of rates of return is a better representation of the returns to university education for Swaziland and GOS than is that range presented

in the previous paragraph, since in this case a wide divergence between social benefits and private benefits is taken into account. A rate of return in excess of 34% compares very favorably with the returns to university education reported for other developing countries by Psachoropoulos and Hinchliffe in their comparisons of over thirty countries. These results are also consistent with their finding of generally higher returns to education the less developed is the country in question. In general the rate of return to investment in education has been found to exceed that to investment in more conventional investment projects and that result is also found here. A social rate of return to investment in university education in excess of 34% may be compared to World Bank estimates of a social rate of return of 26% for the Rural Development Area project in Swaziland.

In contrast to the frequent occurrence in developing countries of private rates of return to education substantially in excess of social ones, the calculated private rate of return to a university degree program in Swaziland falls well within the range of estimates of the social rate of return. The calculated private rate of return to acquiring a university degree varies from 20% to 24% (depending upon whether labor force participation and life expectancy adjustments are made to the benefit stream). Benefits in these cases are valued at the differential earnings of a Swazi degree holder versus those of the holder of a senior secondary certificate. (To lengthen the time horizon beyond twenty years could substantially raise the private rate of return to acquisition of a

university degree.) However, a student chooses not only between a senior secondary level of education and a university degree, but also between a university two year diploma program and a four year degree program.

Private and social rates of return to investment in the two year university diploma programs are reported in Table XVI. Using the same methodology, as described above for assessing the university degree program, yields a range of private rates of return to the two year, full time, diploma programs of 40% to 50%. The social rate of return varies from 18% to 24% for the same program when social benefits are valued by the graduate's earnings differential from the holder of a senior secondary certificate. Social benefits have not been valued at an estimate of expatriate replacement value since it is less likely that a diploma holder will replace an expatriate than it is that a degree holder will do so. Through DEMS it is possible to obtain a diploma through part time study over two years. This program avoids the opportunity cost of income foregone which is incurred during a residential program of study. Therefore both private and social costs of the part time diploma programs are reduced relative to those in residence. The social and private rates of return to these DEMS diploma programs are estimated at 85% and 90% respectively even when adjustment has been made for retention rates, labor force participation, and life expectancy of a generally older population of students than those enrolled in the full time residential diploma programs. Not only does investment in university education in Swaziland look attractive relative to the return on it elsewhere and relative to the return on other investment in Swaziland, but investment in university education through DEMS appears astoundingly attractive, also.

The extremely high rates of return calculated for the DEMS program should be approached with caution, however, since the DEMS diploma programs are relatively new and it is not yet clear how the quality of graduates of those programs and their earnings will compare to those from the residential programs. (The quality of the graduates will depend not only upon the credentials of the students and their motivation, but also upon the extent to which DEMS can recruit and retain qualified part time instructors -- one source of much lower costs than the residential diploma program.) It should be kept in mind that the great cost advantages of DEMS programs and thus the high rates of return are due to the avoidance of opportunity cost through lost income and also through the marginal cost nature of such programs which are dependent upon existing formal institutions, calling as they do, upon physical facilities (such as schools) which are provided for other purposes during the day and using them at night or during the week end, calling upon instructors already fully employed elsewhere - for some part time teaching, and not even adding to the costs of the UCS DEMS establishment of staff. Care must be taken in expanding DEMS activities that the basis of its low costs is not eroded by hiring full time tutors or establishing its own physical facilities or by allowing its administrative staff to expand more rapidly than its programs.

The major area of DEMS activity to date has been in the organization of the "0" level bridging courses for those who left senior secondary school without passing the COSC. In this area DEMS may be viewed as recapturing the products of the secondary school system which

fail to meet the manpower requirements associated with the "O" level exam or to enter the pool of potential university entrants. Against the costs of conducting these DEMS programs may be weighed the averted costs of obtaining output of qualified (at the "O" level) graduates through the senior secondary school system. Such an approach is justified since the national objectives of the Swaziland educational system do not include providing ever more education to an ever enlarging pool of students, but rather the restricting of senior secondary education to the minimum level necessary to meet manpower needs and to provide entrants for further training, also designed to meet manpower needs. Table XVIII shows the costs and benefits of the DEMS "O" level courses. When the retention rates and only direct costs of the DEMS and senior secondary school routes to obtaining an "O" level certificate holder are compared each "O" level passer produced through the DEMS program has a net value of E190 (in the form of secondary schooling costs averted) without applying a social discount rate. Since the DEMS program produces "O" level graduates sooner than the secondary educational system any positive social discount rate would raise the net present value of COSC passers through DEMS activities above E190 to, e.g. E200 at a discount rate of 36% (approximately the rate of return to society and to GOS of the UCS degree programs). To these benefits could be added the income foregone by employable junior certificate holders who are retained in the senior secondary school system.

The economic analysis of UCS and DEMS conducted in this section suggests that it is socially profitable, relative to alternative investments in education and in non education projects to expand UCS and in particular its DEMS activities. It is appropriate to consider also the income distributional aspects of such an expansion. Typically the private benefits of university education accrue disproportionately, if not exclusively, to urban, relatively high income groups in society. The social benefits as well are likely to be felt only in the modern sector of the economy. As has already been noted in the social analysis of this project the bulk of the population resides in rural areas with minimal contact with the modern sector of the economy. How the bulk of the population is to be affected by this project is of major concern.

Within UCS DEMS is the agent of out reach, that is to say that it is the principal agent by which the population outside of the Manzini-Mbabane corridor will be affected by UCS activities. DEMS through its organization of courses in outlying areas of Swaziland promotes a more equitable distribution of educational opportunity between urban and rural areas. A more equitable distribution of economic opportunity is also implied by such a distribution of educational opportunity.

Of perhaps greater importance with respect to the distribution of income in the country are the impacts of UCS and particularly DEMS activities on the ability of Swaziland to localize rapidly without the, all too common, consequence of dramatic deterioration of social services provided, especially in outlying areas. Should the

government require localization by 1981 a pace which is currently being suggested by the Deputy Prime Minister (and which virtually no expatriates nor foreign technical assistance personnel to whom we have talked believes possible) and should as a consequence the quality of social services decline dramatically, albeit the level of services is already very low in outlying areas, it will be the outlying areas in which those services disappear. It is not likely to be the urban highways, schools, and medical facilities which will deteriorate most rapidly, but rather those few services provided to the rural areas. Thus the training by UCS and DEMS of local manpower capable of replacing or facilitating the replacement of expatriates may make an important contribution to maintaining the income of the rural population. DEMS activities appear to both reach a broader segment of the population and to be the most cost effective method for doing so, relative to the other activities of UCS.

For moderate expansion of its activities, DEMS offers an attractive rate of return for the GOS, society, and the private individual student, in part because it is an ancillary activity of UCS calling upon the latter's administrative establishment, the physical facilities of other educational establishments throughout the nation, and upon part-time lecturers who are principally sustained by their other work activities. Although the rate of return to DEMS appears very high, we might expect that rate of return to fall rapidly, if expansion is too vigorous, for a number of reasons. (See Figure 1)

First, the return to higher education, in general, will fall rapidly as localization is achieved (although it is argued above that this is not imminent) in those areas for which UCS can prepare graduates. This would apply to DEMS activities too, although it is more flexible in shifting its activities than are other divisions of UCS. Second, although there are adequate facilities in the form of schools, rural education centers, etc. throughout Swaziland in which DEMS classes may meet, too vigorous an expansion of DEMS might require the establishment of DEMS own physical facilities and full-time staff in outlying areas--negating much of the cost advantage DEMS activities now enjoy over other types of educational activities. Much of DEMS programs' high rate of return is due to increasing the utilization rate of resources already employed primarily in other activities.

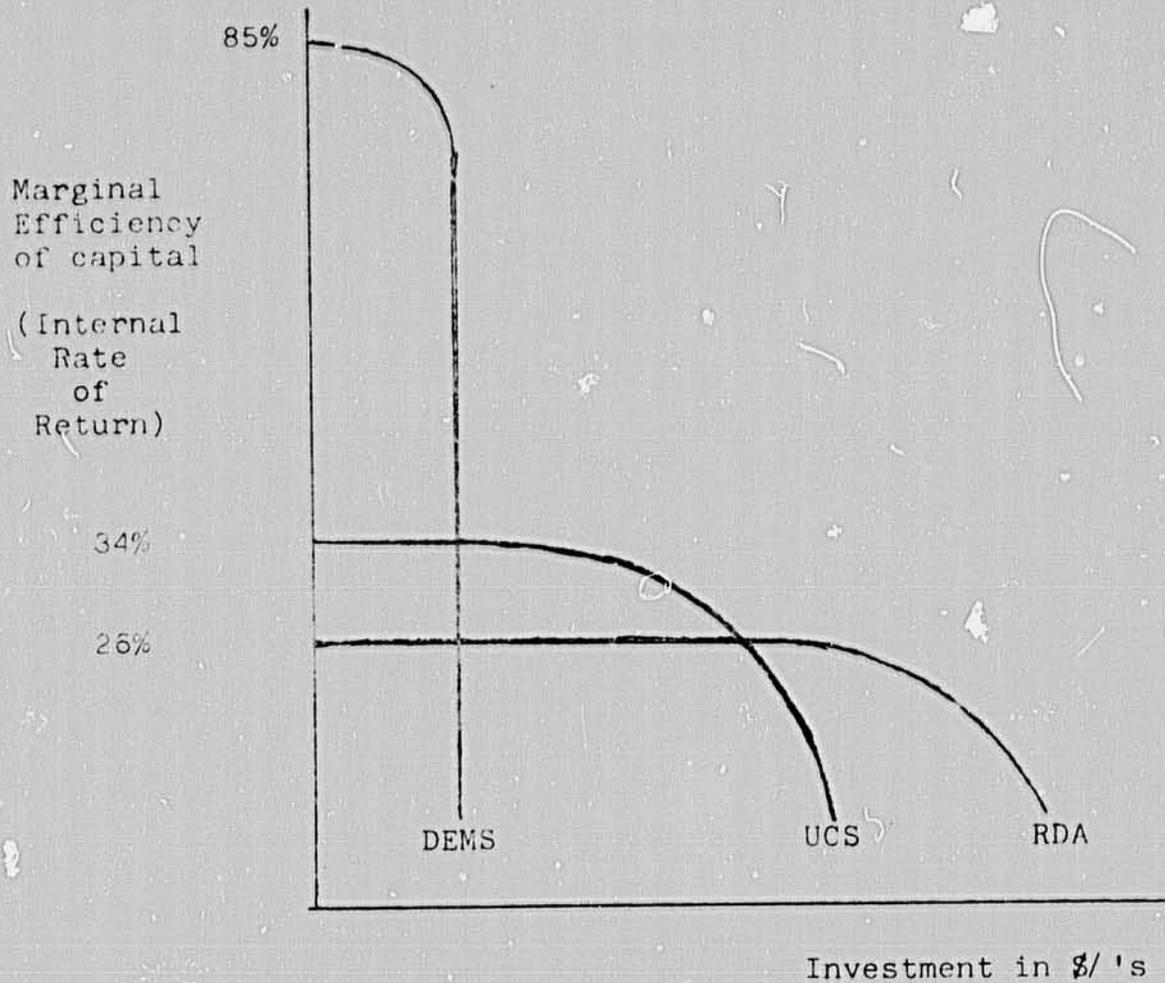
Third, maintaining a high quality of students entering DEMS programs while assuring sufficient numbers per course to cover direct costs would be difficult in the case of a larger DEMS program than is proposed here - threatening a decline in both the private and social value of its programs of instruction as well as a rise in per student direct costs.

Fourth, and the most important constraint on expansion of DEMS programs, the availability of qualified part-time lecturers for DEMS programs is limited. DEMS is finding it possible to be increasingly selective in the hiring of part-time lecturers. Too rapid an expansion of its activities may result in a decline in the quality of instruction and, in turn, in the social and private values of DEMS courses.

Although as noted above the rate of return to modest investment in UCS and DEMS appears to be high relative to alternatives, such as the Rural Development Areas, and as also noted the activities of DEMS may be an important force for increasing the equity of access to educational and economic opportunity, some caveats are in order. The present rapid growth of the modern sector of the economy, already accounting for 80% of GDP, while 80% of the population remains in the traditional sector, suggests that the degree of economic dualism is likely to substantially worsen over the next decade if present trends (of little growth in the traditional sector and employment creation in the modern sector which is low relative to population increase) continue. It is unlikely that higher education projects--DEMS included--will do anything to stem such a trend, rather they may accentuate it by fueling the growth of the modern sector.

Figure I

A Hueristic Comparison of DEMS,
UCS Generally, and the
Rural Development Project as an alternative.



Note: No scale is provided on the horizontal axis for this hueristic representation since the specific value of investment and the rate at which the rate of return falls cannot be identified.

APPENDIX E

TABLE I

REQUIRED ANNUAL NUMBER OF ENTRANTS INTO COURSES
FOR FURTHER EDUCATION AND TRAINING
(POST FOR FORM V ONLY)

<u>Field of Study and Institution</u>	<u>Required Annual Number of Entrants</u>
1. <u>UBS Degree</u>	
(a) <u>Arts Degrees</u>	
B.A. (General)	3 - 10
B.A. (Administration)	1 - 2
B.A. (Economics)	2 - 13
B.A. (Statistics)	1 - 3
B.A. (Education)	12
LL.B	1 - 12
(b) <u>Science Degrees</u>	
B.Sc. (General)	2 - 9
B.Sc. (Agriculture)	6 - 22
B.Sc. (Education)	25
2. <u>UBS Part I B.Sc. degree</u>	
<u>Plus Overseas Training</u>	
Hydrology and Geology	1 - 3
Civil Engineering	4 - 9
Electrical and Mechanical Engineering	2 - 12
Chemical Engineering	1 - 5
Metallurgical and Mining Engineering	1 - 5
Medicine	2 - 8
Dentistry	1 - 4

Veterinary Science	1
Pharmacy	1 - 3
Optometry	1
Silvicultural Science/Forestry	3 - 6

3. UBS Diplomas

Agriculture	14 - 42
Animal Health and Husbandry	6 - 8
Home Economics	7 - 10
Agricultural Education	8 - 13
Business Studies	15 - 20

4. Overseas Degree or Professional qualifications

Social Workers	1 - 3
Aircraft Pilot	4 - 6
Librarians/Archivists	4 - 9
Accountancy	11 - 21
Architects/Town Planners	3 - 8
Industrial Relations/Personnel Managers	3 - 7
Home Economics Teachers/Dieticians	2 - 5
Quantity Surveyors	1 - 5

5. Overseas Technician Training Qualifications

Physical and Life Science Technicians	5 - 11
Surveyors	2 - 8
Chemical Engineering Technicians	1
Metallurgical and Mining Technicians	1 - 2
Physiotherapists	1 - 2
Medical X-Ray Technicians	1 - 2
Sanitarians	1 - 2

Industrial Arts Teachers	5 - 12
Personnel and Occupational Specialist	2 - 6
Computer Programmers	2 - 4
6. <u>Swaziland College of Technology</u>	
Technicians	14 - 58
Stenographers	43 - 69
Book-keepers	12 - 41
Commercial/Secretarial Teachers	4 - 11
7. <u>Teacher Training Colleges</u>	
Diploma Teachers (General)	68
Technical Teachers	3 - 9
8. <u>Summary</u>	
Arts Degree UBS	20 - 52
Science Degree UBS	33 - 56
B.Sc. Part I UBS Plus Overseas Training	17 - 58
UBS Diplomas	<u>35 - 73</u>
Sub-Total	<u>105 - 239</u>
Overseas degrees and Professional Qualifications	25 - 58
Overseas Technicians Training	19 - 49
Swaziland College of Technology	73 - 179
Teacher Training Colleges	<u>71 - 78</u>
GRAND TOTAL	<u>324 - 632</u> =====

Source: Kingdom of Swaziland Report on High-Level
Manpower Requirements 1973-1982, Economic
Planning Office, 1974.

TABLE II

	(SWAZILAND)
	<u>UBS ANNUAL ENTRANT REQUIREMENTS</u>
Arts degree	20 - 52
Science degree	33 - 56
B. Sc. Part I UBS plus Overseas training	17 - 58
UBS Diplomas	35 - 73
	<u>105 - 230</u>
	=====

It should be remembered that these estimates are at a 1973 base and the upper and lower points of the range reflect optimistic and pessimistic assumptions respectively on growth of job opportunities and the rate of localization.

University of Botswana and Swaziland Development Plan 1976/7 - 1985/6, University Council, 1976, p.38

TABLE III

UBS ACTUAL AND PLANNED INTAKE 1985/6 BY
MAIN FACULTIES

	<u>ACTUAL</u>	<u>PLANNED</u>	<u>DIFFERENCE</u>
BA General	29	15	+ 14
B.Sc.	32	60	- 28
FESS	43	22	+ 21
	<u>104</u>	<u>97</u>	<u>+ 7</u>

UBS Development Plan 1976/7 - 1985/6, University Council, 1976, p. 38.

TABLE IV

SCIENCE FIRST YEAR ENROLMENT:
MANPOWER NEEDS AND CANDIDATE SUPPLY

	<u>Need Planned</u>	<u>Estimate of Available Supply</u>
1975	60	32 (Actual)
1976	73	60
1977	87	70
1978	99	80
1979	112	90
1980	124	100

Note: The planned enrolments in first year science are higher than those based on Table 5.1 for the following reasons:

1. the optimistic growth and localization targets are assumed
2. a more pessimistic allowance for "wastage" in science courses is made. It is estimated that approximately 60% who start the science course will complete (Some of those who do not complete, transfer out of UBS to take up specialised courses, e.g. Medicine).

This situation will be amended using a combination of the following policy measures:

- a. Reduction of the level of drop-out during the science courses. (Students who fail Part I Science should transfer to technical courses in UBS or other institutions).
- b. Concentration of secondary school curriculum development on maths and science.

TABLE V

Non Science First Year Enrollments: Manpower
Needs and Candidate Supply

	<u>Need (Planned)</u>	<u>Estimate of Available Supply (Actual)</u>	
1976	45	270	(210)
1977	54	315	(245)
1978	63	380	(300)
1979	71	470	(375)
1980	75	500	(400)

Note: The estimate of available supply is the total number achieving a first or second class pass -- the figure in brackets gives this number net of those who qualify in science.

Source: UBS Development Plan 1976/77 - 1985/86, University Council, June 1976, p. 40.

Table VI
Qualified Output from Secondary Schools

1973 - 1980

	<u>COSC Candidates</u>	<u>Leavers with COSC 1 and 2</u>	<u>Leavers with COSC 3</u>	<u>Qualifying for Science</u>
1973	812	128	197	17
1974	1,018	164	228	34
1975*	1,130 (1,138)	200 (167)	305 (248)	45 (34)
1976	1,350	270	430	60
1977	1,420	315	530	70
1978	1,600	380	670	80
1979	1,880	470	850	95
1980	1,980	500	890	100

Note: The rapid expansion in candidates taking COSC (the number increased more than twofold since 1970) has been complemented by an equally rapid fall in percentage obtaining a first or second class pass (dropping from 33% in 1970 to 16% in 1974).

* (Actual) and estimated examination results.

Source: UBS Development Plan 1976/77 - 1985/86, University Council, June, 1976, p. 47, A Financial and Statistical Analysis and of Swaziland's Educational System with Projections to 1985, Ministry of Education, 1977.

TABLE VII

ENROLLMENTS, SWAZILAND CAMPUS 1976/7 - 1985/6

	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>	<u>1982/83</u>	<u>1983/84</u>	<u>1984/85</u>	<u>1985/86</u>
Commerce	78	89	126	148	139	129	118	105	116	126
Law	19	20	32	44	49	53	56	56	56	56
SESS	52	36	38	40	60	81	85	79	93	97
FESS Degree	149	145	196	232	248	263	253	250	265	279
	25	48	48	48	48	48	48	48	48	48
Humanities	101	92	89	87	95	101	105	107	107	107
Science +	117	148	172	196	234	265	285	307	312	314
Agriculture Degree	16	19	22	26	31	35	32	29	33	35
Diploma & Cert.	170	192	192	212	230	230	230	230	230	230
Total Degree	383	404	479	541	608	664	681	693	717	735
Diploma	195	240	240	260	260	278	278	278	278	278
Total	578	644	719	801	886	942	959	971	995	1013

Note: 1. Swaziland phases in the Part II BA Econ./Admin degree and Biological science between 1980/81 and 1981/82
Botswana phases in the B. Comm (4 years) between 1980/81 and 1983/84

2. Include a nominal 5 - 7% for foreign student enrollment

+ Includes Science Part I for Agriculture.

Source: UBS Development
Plan 1976/77-1985/86, Uni-
versity Council, June, 1976,
Page 54.

TABLE VIII

University Education Costs to Government of Swaziland

(1976 prices)

	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>
Total Recurrent Costs (Government Subvention) E millions	1.19	1.7	1.77	1.86	2.0
Additional Government Costs (Fees and Allowances of Sponsored Students) E millions	.43	.47	.50	.54	n.a.
Total Government Costs E millions	1.62	2.17	2.27	2.4	n.a.
Sponsored Students	500	543	579	626	n.a.
Total Full Time Enrollment UCS	578	644	719	801	886
UCS Recurrent Unit Cost	2059	2639	2461	2322	2257
GOS Unit Cost of Sponsored Students	3240	3996	3921	3834	n.a.
Marginal Recurrent Cost		7727	933	1097	1647
		(1978/79 - 1979/80 Average = 1015)			
Marginal GOS Recurrent Cost of Sponsored Students (All costs Allocated to Sponsored Students Only)		12791	2778	2766	
		(1978/79 - 1979/80 Average = 2772)			

Source: Tables IX and X and
A Financial and Statistical Analysis of Swaziland's Educational
 System with Projections to 1985, Swaziland Government, Ministry of
 Education, 1977; The University of Botswana and Swaziland Development
 Plan 1976/7 - 1985/6, University Council, 1976; and University College
 of Swaziland Bulletin of Statistics 1975/76, 1976, UCS Development
 Planning Unit.

TABLE IX

Fees and Allowances of GOS Sponsored Students

1975/76

Swazi Students in Swaziland		Swazi Students in Botswana	
Tuition Fee	181		181
Residence Fee	450		450
Book Allowance	100		100
*Other Fees	<u>129</u>		<u>180</u>
	860		911

*Excludes E100 field work fee for agricultural students.

Source: UBS Development Plan 1976/77 - 1985/86, P.69

TABLE X

A. Calculation of Marginal Cost

MC - marginal cost N - number of
TC - total cost students
TVC - total variable cost

$$MC = \Delta TC / \Delta N = \Delta TVC / \Delta N$$

Marginal GOS Recurrent Cost of Sponsored Students

(All Costs Allocated to Sponsored Students Only)

Plus Marginal Capital Cost:

$$MC = (TVC_{1977/78} - TVC_{1976/77}) / (N_{1977/78} - N_{1976/77})$$

$$\left. \begin{array}{l} SRMC_{1977/78} = 550,000/43 = 12,791 \\ SRMC_{1978/79} = 100,000/36 = 2,778 \\ SRMC_{1979/80} = 130,000/47 = 2,766 \end{array} \right\} + \left\{ \begin{array}{l} \text{Marginal Capital Costs:} \\ 216 \text{ hostel beds at} \\ E540,000 = 2,500/\text{bed} \\ 20 \text{ yr.st.Indep} = 125/\text{yr} \end{array} \right.$$

$MC = 2,772 + 125 = 2,897$

Source: UBS Development Plan
1976/77-
1985/86
p. 69

TABLE XI

Internal Rates of Return:
(DCS Degree Program)

(1) Year	(2) Marginal COS Recurrent Cost/sponsored student	(3) Marginal Recurrent Cost/student	(4) Tuition	(5) 9 th Level Income Earned	(6) Marginal Capital Cost/student	(7) Diploma Income Earned	(8) (Attu) Degree Income Earned	(9) Net Benefits COS	(10) Net Benefits Social	(11) Net Benefits Private	(12) Net Benefits COS	(13) Net Benefits Social
	1	2112	1015	101	960	125			2097	2201	960	2097
2	2112	1015	101	1000	125			2097	2129	1000	2097	2129
3	2112	1015	101	1056	125	2064		2097	2305	2064	2097	2305
4	2112	1015	101	1104	125	2104		2097	2505	2104	2097	2505
5				1152		2104	2760		1600		1000	
6				1200		2424	2904		1704		"	
7				1248		2544	3048		1800		"	
8						2664	3192		1944		"	
9						2784	3336		2000		"	
10						2904	3480		2212		"	
11						3024	3624		2176		"	
12						3164	3768		2520		"	
13						3264	3912		2664		"	
14							4056		2800		"	
15							4200		2952		"	
16							4344		3096		"	
17							4500		3252		"	
18							4656		3408		"	
19							4812		3564		"	
20							4968		3720		"	

7%	8%	20%	34%	36%	
(14) Net Benefits GOS	(15) Net Benefits Social	(16) Net Benefits Private	(17) Net Benefits GOS	(18) Net Benefits Social	Year
- 4116	- 3241	- 960	- 4116	- 3241	1
- 3705	- 2978	-1008	- 3705	- 2978	2
- 3149	- 3679	-2064	- 3149	- 3679	3
- 2897	- 3505	-2184	- 2897	- 3505	4
	1463		9100		5
	1482		8700		6
	1494		8300		7
	1555		8000		8
	1587		7600		9
	1629		7300		10
	1663		7000		11
	1688		6700		12
	1758		6600		13
	1797		6400		14
	1860		6300		15
	1889		6100		16
	1919		5900		17
	1977		5800		18
	1924		5400		19
	1897		5100		20

Notes: All values are expressed in Emalangeni; salaries are based on civil service scales.

- (1) A 20 year time horizon is employed.
- (2) From Table VIII.
- (3) From Table VIII.
- (4) From Table IX.
- (5) From Table XII; this is income foregone for a degree student in years 1 and 2.
- (6) From Table X.
- (7) From Table XII; this is income foregone for a degree student in years 3 and 4.
- (8) From Table XII; income earned by an "Arts" degree holder, higher for science degree.
- (9) Costs: columns (2) + (6). Benefits: columns (8) through (5)
- (10) Costs: columns (3) + (4) + (6) + [(5) for years 1 and 2 or (7) for years 3 and 4]. Benefits as above.
- (11) Costs: student is assumed to be sponsored, columns (5) and (7).
- (12) and (13) Costs: as for (9) and (10). Benefits: replacement value assumed for an expatriate.
- (14), (15), (16), (17), and (18) Costs and benefits as for columns (9) through (13) but adjusted for retention rates at UCS, labor force participation, and life expectancy; see Tables XV and XVI.

TABLE XII

Salary by Civil Service

Entry Grade by Education Level and Years of Service

	Junior Certificate Assistant Clerical Officer	"O" Level Clerical Officer	Diploma -2 Year- Exect. Officer	Degree -4 Year- Admin. Asst. Secy	Degree -4 Year-	Degree -4 Year-
	(Civil Year Service 4)	(Civil Service 6)	(Civil Service 9)	(Civil Service 10)	(Civil Service 11)	(Civil Serv.12)
1	792	960	2064	2760	3720	4560
2	816	1008	2184	2904	3876	4740
3	840	1056	2304	3048	4032	4920
4	864	1104	2424	3192	4180	5100
5	888	1152	2544	3336	4344	5280
6		1200	2664	3480	4500	5460
7		1248	2784	3624	4656	5640
8			2904	3768	4812	5820
9			3024	3912	4968	6000
10			3144	4056	5124	6180
11			3264	4200	5280	6360
12				4344		6540
13				4500	with	6720
14				4656	promotion	
15				4812	to Grade	
16				4968	11	
17				5124		
18				5280		

Notes: Degree holders enter the civil service at Grade 10 with an "Arts" degree, at Grade 12 with a science degree (salary is also influenced by age for Grade 12), and at Grade 10 thence to Grade 12 after four years for economics graduates. Promotion from Grade 10 to Grade 11 would be nearly automatic for degree holders.

TABLE XIII

Labor Force Participation and Life Expectancy

Source: Report on the First Round Demographic Survey Abdul Gani

Swaziland 1975 p.52 and Table 14.

Age Specific Economic Activity Rates by Sex and Component (African)
(African)

<u>Age</u>	<u>Male</u>	<u>Female</u>
15-19	41.31	24.33
20-24	75.31	33.63
25-34	94.30	36.98
35-44	95.86	34.87
45-54	96.71	28.46
55-64	91.60	17.78
65+	70.03	7.85

Age Specific Death Rates (African)

<u>Age Group</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Probability of Surviving a year</u>
15-19	5.03	1.86	3.42	.9658
20-24	7.84	1.11	4.26	.9574
25-29	1.67	1.34	1.50	.9850
30-34	4.69	.77	2.73	.9727
35-39	7.08	4.92	6.04	.9396
40-44	11.37	3.06	7.24	.9276
45-49	5.67	1.14	3.49	.9651
50-54	28.05	8.63	17.59	.8241
55-59	27.80	7.04	17.08	.8292
60-64	22.65	11.72	17.25	.8275
65+	30.83	23.64	26.79	.7321

TABLE XIV

Age	Economic Activity Rate	Probability of Earning Income			Conditional Probability of Survival:		Conditional Probability of Earning Income:	
		Age Specific Survival Rates:			At age 21	At age 28	At age 21	At age 28
		Male	Female	All				
21	.95	.9216	.9889	.9574		.91		
22		"	"	.9166		.87		
23		"	"	.8776		.83		
24		"	"	.8402		.80		
25		.9833	.9866	.9580	.8049	.76		
26		"	"	"	.7710	.73		
27		"	"	"	.7387	.70		
28		"	"	"	.7076	.9580	.91	
29		"	"	"	.6971	.9178	.87	
30		.9711	.9923	.9727	.6780	.8927	.85	
31		"	"	"	.6595	.8684	.82	
32		"	"	"	.6415	.8447	.80	
33		"	"	"	.6240	.8216	.78	
34		"	"	"	.6070	.7992	.76	
35		.9292	.9508	.9396	.5703	.7509	.71	
36		"	"	"	.5459	.7056	.67	
37		"	"	"	.5035	.6630	.63	
38		"	"	"	.4731	.6230	.59	
39		"	"	"	.4445	.5851	.56	
40		.8863	.9694	.9276	.4123	.5430	.52	
41		"	"	"	.3825	.5036	.48	
42		"	"	"	.3548	.4672	.44	
43		"	"	"	.3291	.4334	.41	
44		"	"	"	.3053	.4020	.38	
45		.9433	.9886	.9651	.2946	.3729	.35	

TABLE XIV

Cont'd ...

Age	Economic Activity Rate	Age Specific Survival Rates:			Conditional Probability of Survival:		Conditional Probability of Earning Income:	
		Male	Femela	All	At age 21	At age 28	At age 21	At age 28
46	↓	"	"	"	.2843	.3599	.27	.34
47		"	"	"	.2744	.3473	.26	.33

Note: The economy wide economic activity rate for men is used for all university graduates in spite of the substantial enrollment of women (Table XIX). Conditional probability of earning income is the conditional probability of survival, at age 21 or 28, to a specific age, times the economic activity rate.

Source: Table XIII.

TABLE XV

UCS Cost Adjustment

Degree

<u>Year</u>	<u>Retention Rate</u>	<u>Adjustment Factor</u>
1	.9	1.4209
2	.85	1.2788
3	.92	1.0870
4	1.0	1.0

Diploma (Full Time)

<u>Year</u>	<u>Retention Rate</u>	<u>Adjustment Factor</u>
1	.95	1.1
2	.95	1.05

Diploma Part Time)

<u>Year</u>	<u>Retention Rate</u>	<u>Adjustment Factor</u>
1	.65	1.81
2	.85	1.18

Sources:

UCS Bulletin of Statistics, 1975/76, Development Planning Unit, 1976; and the Faculty of Professional Studies unpublished data on the business studies program).

TABLE XVI

Internal Rates of Return for UCS
Diploma Programs

Year	<u>Residential Program</u>				<u>Part Time (DEMS)</u>	
	24%	50%	18%	40%	85%	90%
	Social	Private	Social	Private	Social	Private
	(Net Benefits)				(Net Benefits)	
	(1)	(2)	(3)	(4)	(5)	(6)
1	-2281	- 960	-2395	- 960	-454	-265
2	-2329	-1008	-2445	-1008	-296	-265
3	1008		917		917	
4	1080		940		940	
5	1152		956		979	
6	1224		980		1004	
7	1296		985		1036	
8	1416		1034		1104	
9	1536		1075		1167	
10	1656		1110		1176	
11	1776		1172		1190	
12	1896		1213		1194	
13	2016		1270		1189	
14	↓		1230		1129	
15			1189		1048	
16			1089		967	

Table XVI
Cont.'d ...

17		1028	887
18		968	827
19		907	766
20	↓	847	706

Notes: (1), (2), (3), and (4) Costs: Table column, assuming the student is sponsored

(1), (2), (3), (4), (5), and (6) Benefits from Table column.

(3), (4), (5), and (6) Benefit streams are adjusted for life expectancy and labor force participation. Average age at graduation is 21 for students in the residential program and 28 for students in the DEMS program. Social costs have been adjusted to reflect retention and pass rates in the diploma programs, while private costs reflect the assumption that students successfully complete their program of studies on schedule. Adjustment factors from Table

TABLE XVII

D E M S Diploma Programs: Calculation of Costs

Direct Instructional Costs	{	(1) 3 Weekly contact hrs / Subject x 3 subjects x E6/contact hr. x 36 weeks/course= E1944	
		(2) 3 Instructors x 16 km (General driving x 12/km distance of instructors) x 36 weeks/course= 207	
Student Expenses	{	(3) 1.80/wk traveling cost (average per student) x 36 weeks/course= 65	
		(4) student's book expenditure = 100	
		(5) student's fee = 100	

$$\text{Marginal Social Cost at capacity (25)} = \frac{(1)+(2)}{25} + (3)+(4) = 86+65+100 = 251$$

$$\text{Marginal Private Cost} = (3) + (4) + (5) = 65+100+100 = 265$$

at capacity : D E M S Marginal revenue = 100

(D E M S shut down point at 22 students)

D E M S Marginal cost = 86

Total variable cost to D E M S = (1) + (2) + directly allocatable administrative costs (assumed at zero)

TABLE XVIII

Evaluation of DEMS "O" Level Courses

Cost Calculation

(1)	(36 week course) for 1 "O" Level Class	
(2)	local coordinator: E12/week x 36 weeks =	E 432
(3)	Lecturer fees: E6/hr x 2 hours x 4 lecturers x 36 wks=	1,728
(4)	Travel Allowance : 12¢/km x 16 km (av. distance) x 2 lec- turers x 36 weeks =	<u>69</u>
	TOTAL DEMS Direct Cost	E2,229
(5)	"O" Pass/Class= Ave. Class size x Competition rate x "O" Level Pass Rate	
	20 x .8 x .75 =	12
	(Evaluated at capacity) unit cost of DEMS "O" Level Pass =	
	= DEMS Direct Cost - "O" Level Passers	
	= 2,229 - 12 = 185.75 (unit direct cost)	
(6)	+ <u>35.00</u> travel cost/student	
	221.75 Social Cost	
	=====	

Benefits: (Cost Avoided of Training "O" Level
Passer Through Senior Secondary School)

(7)	Senior Secondary unit costs: E140/yr	
	Adjustment factors reflecting repetition, retention, pass rates:	
(8)	Senior Secondary) 1st year :	1.614
(9)	School) 2nd year :	1.219

TABLE XVIII
Cont'd

Cost Avoided, i.e. Cost of Obtaining "O" Level
Passer Through

Senior Secondary

School : Year 0-E140 x 1.614 = 225.96

Year 1-E140 x 1.218 = 186.06

Net Benefits to GOS of DEMS "O" Level Pass

Year 0 E225.96 - 0.00 = E225.96

Year 1 E186.06 - 221.75 = -35.69

E190.27

Present Value of 0 discount rate = E190.27

Present Value of 36% discount rate

(Note benefits are received, in effect, before
costs are incurred.)

Sources: (1), (2), (3), (4), (5), and (6) : DEMS
(7), Calculated from: "Secondary Recurrent
Expenditures And Enrollement Projections"

Year	1975	1976	1977	1978	1979	1980	1981	1982
Expenditure E(000's)	2,101	2,287	2,517	2,770	3,035	3,269	2,535	3,797
Student Population	16,197	17,743	19,081	20,555	21,772	22,747	23,555	24,422
Unit Cost	130	129	132	135	140	144	150	155

Financial and Statistical Analysis of Swaziland's
Educational System with Projections to 1985, page 4,
page 53.

(8) and (9) Retention rates from Financial and
Statistical Analysis, page 40.

+ These are broad estimates and may be subjected to a
substantial margin of error.

TABLE XIX

Composition of UCS Student Body

New Intake for the Academic Year 1976/77 (XIXa)

<u>Course of Study</u>	<u>F.</u>	<u>M.</u>	<u>TOTAL.</u>
1. Humanities I	18.	16.	34.
2. Humanities II	1.	1.	2.
3. B.A. Administration I	5.	4.	9.
4. B.A. Administration II	-	1.	1.
5. B.A. Economics I	6	4.	10.
6. B.A. Economics II	-	3.	3.
7. B.A. II (FESS)	-	1.	1.
8. B.A. 4th. Year (Law/Admin)	2	3.	5.
9. Law (LLB) I	6	7.	13.
10. Law (LLB) II	-	2.	2.
11. Law (LLB) Final V	-	6.	6.
12. Bachelor of Commerce I	-	5.	5.
13. DBS/B. Com I	15	5.	20.
14. Dipl. in Business Studies I	11	10.	21.
15. " " " II	8	10.	18.
16. Bachelor of Science I	16	29.	45.
17. Bachelor of Science (Agric) III.	-	4.	4.
18. Dipl. in Gen. Agriculture I	7	23.	30.
17. " " AN. Health & M. I	7	18.	25.
18. " " Agric. Educ. I	2	16.	18.
19. " " Home Economics I	24	-	24.
	<u>128.</u>	<u>168.</u>	<u>296.</u>

Enrollments (By Sex) (XIXb)

	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>
Male	158	204	244	251	308
Female	57	70	143	182	253
Total	215	274	387	433	561

Enrollment for Academic Year 1976/7. (XIXc)

<u>Course of Study</u>	<u>F.</u>	<u>M.</u>	<u>Swazi</u>	<u>Foreign</u>	<u>Botswana</u>	<u>Total</u>
1. Dipl. in Business Studies I	11.	10.	21.			21.
2. " " " " II	8.	10.	18.			18.
3. Bachelor of Commerce I	-	5.			5.	5.
4. Bachelor of Com/DBS I	15.	5.	19.	1.		20.
5. Bachelor of Commerce II	3.	8.	1.	1.	9.	11.
6. Bachelor of Commerce III	4.	6.	6.	1.	3.	10.
7. Law (LLB) I	6.	7.	7.	1.	5.	13.
8. Law (LLB) II	4.	5.	3.	2.	4.	9.
9. Law (LLB) III	-	2.	1		1.	2.
10. B.A. 4th Year (Law/ADM)	2.	3.	1.		4.	5.
11. Law (LLB) Final V.	-	6.	2.		4.	6.
12. B.A. Administration I	5.	4.	0.	3.		9.
13. " " II	5.	9.	11.	3.		14.
14. B.A. Economics I	6.	4.	8.	2.		10.
15. " " II	5.	14.	17.	2.		19.
16. B.A. II (F E S S)	5.	2.	6.	1.		7.
17. Bachelor of Science I	16.	29.	32.	13.		45.
18. Bachelor of Science II	10.	18.	26.	2.		28.
19. " " (Agric) III	5.	13.	6.	2.	10.	18.
20. " " (Agric) IV	4.	5.	6.		3.	9.
21. B.A. Humanities I	18.	16.	29.	5.		34.
22. " " II	21	9.	24.	5.	1.	30.
23. " " III	15.	9.	23.	1.		24.
24. " " IV	17.	11.	21.	7.		28.
25. Dipl. in Gen. Agriculture I	7.	23.	23.	1.	6.	30.
26. " " " II	2.	18.	8.	1.	11.	20.
27. Dipl. in AN. Health & M. I	7.	18.	17.	1.	7.	25.
28. " " " II	3.	12.	7.	1.	7.	15.
29. Dipl. in Agric. Education I	2.	16.	13.	1.	4.	18.
30. " " Home " II	6.	11.	10.	1.	6.	17.
31. " in/Economics I	24.	-	14.		10.	24.
32. " " " " II	17.	-	10.		7.	17.
	253.	308.	396.	58.	107.	561.

Table XIX, Cont'd ..

a.	Male students in University College	=	55%	
b.	Female " " "	=	<u>45%</u>	
c.	Swazi " " "	=		70%
d.	Botswana " " "	=		19%
e.	Foreign " " "	=		11%

TABLE XX

UCS Division of Extra Rural Studies
 Recurrent Revenue and Expenditure

Source: Bursars Office, UCS

	1975/76		1976/77 (Reflects a shift in Fiscal Year)			1977/78
	Est.	Act.	Est.	Est. (9 mo.)	Act. (9 mo.)	Est.
Salary						
Academic	15,763	13,407	12,000	9,000	6,374	14,000
Non Academic	3,400	260	800	600	381	900
Allowances	4,700	1,694	4,500	3,375	3,049	2,300
Departmental Expenses:						
Consumable Materials			1,000	750	1,059	1,000
Equipment			500	375	--	500
Courses			} 6,000	} 4,500	} 20,224	11,000
Conferences						500
Travel Expenses			2,500	1,875	824	3,000
Less Revenue and Fees:						
Ministry of Education			2,000	2,000	2,000	2,000
Other			4,000	3,000	4,299	6,000
Departmental Expenses Net of Fees	2,500	4,090	4,000	2,500	15,808	8,000

TABLE XXI

TOTAL RECURRENT COSTS - ESTIMATED AND ACTUAL 1972/3-1976/7

E'000	1972/3		1973/4		1974/5 ⁽²⁾		1975/6		1976/7		1977/8	
	EST.	ACT.	EST.	ACT.	EST.	ACT.	EST.	ACT.	EST.	ACT.	EST.	ACT.
Academic Departments	538.6	483.5	591.5	555.1	647.6	750.1	880.9	871.9	1199.7		1340.1	
% of Total	76.1%	77.0%	71.1%	65.6%	76.6%	64.9%	67.8%	63.4%	69.5%		66.0%	
Library	23.9	21.5	27.6	35.1	41.6	47.3	55.0	60.4	93.8		91.6	
% of Total	3.4%	3.4%	3.3%	4.2%	4.9%	4.1%	4.2%	4.4%	5.4%	NOT AVAILABLE	4.5%	NOT AVAILABLE
Administration (1)	85.9	81.7	125.1	141.3	130.4	190.9	206.7	267.1	280.9	NOT AVAILABLE	378.8	NOT AVAILABLE
% of Total	12.1%	13.0%	15.0%	16.7%	15.4%	16.5%	15.9%	18.5%	16.3%	NOT AVAILABLE	18.7%	NOT AVAILABLE
Maintenance	59.2	41.4	83.2	114.1	76.5	167.9	156.3	180.6	152.0		220.0	
% of Total	8.4%	6.6%	10.5%	13.5%	9.1%	14.5%	12.1%	13.0%	8.8%		10.8%	
TOTAL (3)	707.6	628.1	832.4	845.6	896.1	1156.2	1298.9	1387.2	1726.4		2030.5	

NOTES: (1) Excludes UBLS Central Administration.

(2) Salaries Commission recommendations affected expenditures in 1974/5.

(3) Revenues from Sponsored Posts etc. excluded.

SOURCES: UCS Bulletin of Statistics 1975/76, UCS Recurrent Estimates of Revenue and Expenditure for 1977/8, and UCS Statement of Revenue and Expenditure

TABLE XXII

REVENUES UCS

Sources: As for Tables XX & XX

	<u>1975/76</u>	<u>1976/77</u>		<u>1977/78</u>	
	ACT.	EST.	ACT.	EST.	ACT.
Student Tuition and Fees	123.8	126.5		169.0	
Staff Rents and University Charges	63.2	50.0		55.0	
Sponsored Posts		161.8		147.2	
Recurrent GOS Sbvntion Less UBLS Exams Council	1122.3	1130.8 (13.8) 1117.0		1706.7	
Additional Subventions	--	286.5			
Miscellaneous Revenue	.1				
Total Revenue	1309.4	1741.8		2077.9	
Recurrent Cost	(1387.2)	1726.4		2030.5	
Surplus (Deficit)	(77.8) =====	15.4 =====		47.4 =====	

APPENDIX F

JOB DESCRIPTION FOR
U.S. TECHNICAL SPECIALIST

The project will entail 8 - man/years of full time U.S. technical assistance. These will be broken down into three positions:

- (1) an adult education design and management specialist. (2 years)
- (2) a materials development and production specialist (4 years)
- (3) a management training specialist (2 years)

The primary responsibilities of each technician are as follows:

- (1) Adult Education design and management specialist:
 - (a) plan and supervise the re-orientation and expansion of DEMS from a traditional continuing-education function to a resource institution for adult-educators and in-service training of development project employees;
 - (b) design and manage a variety of in-service training programs for adult educators and extension workers, including the Diploma of Adult Education courses;
 - (c) augment and maintain DEMS' links with the university community, government agencies, other clientele and cooperation organizations, especially those in rural development projects;

- d) supervise the design of curricula for DEMS programs and affiliated adult education programs;
- e) recruit, train and support a fluctuating cadre of part-time instructors, many of whom work in rural areas;
- f) teach some university courses in adult education, and supervise practicum;
- g) train Swazis on the DEMS staff to take over responsibility for all of the above.

(2) Material Development specialist:

- a) supervise preparation and production of materials, especially self-instructional packages, for DEMS courses in adult education;
- b) enlist participation of learners in the preparation and testing of those materials;
- c) supervise field-testing and revision of materials;
- d) assist affiliated adult education organizations in the preparation of materials;
- e) teach some university courses and supervise practicum in adult education materials production;
- f) train Swazis on the DEMS staff to take over responsibility for all of the above.

(3) Management Training specialist:

- a) design and implement in-service training courses in management skills in Swazi industries;

- b) Cooperate with Swazi Federation of Employers in training a cadre of industrial trainers;
- c) establish in outlying industrial areas of Swaziland network of DEMS courses leading to Diploma in Management;
- d) teach university courses in management and administration of adult education/in-service training;
- e) train Swazis on the DEMS staff to take over responsibility for all of the above.

The qualifications of each of these technicians should be such that they have demonstrated the ability to carry out their responsibilities and the academic standing to meet university expectations (probably M. A. degrees). In addition, each technician should have:

- a) successful experience working in adult education/extension/ in-service training in developing countries;
- b) successful experience in teaching other to assume responsibility for his/her assignment;
- c) sufficient familiarity with agricultural production in developing countries to communicate with Swazi farmers.

The project will also entail up to 10 months of short-term technical assistance, the specifics of which will depend on the direction of DEMS programs and "gaps" in skills of the long-term technical assistance. Probable short-term assistance needs will be in:

- 1) Educational radio programming;
- 2) Formative evaluation.

APPENDIX G

THE UNIVERSITY COLLEGE OF SWAZILAND DIVISION OF EXTRA-MURAL SERVICES (DEMS)

DIPLOMA IN ADULT EDUCATION

1. Course Objectives and Strategies

1.1 Objectives

This course is designed to give an intensive professional training to personnel already engaged in the field of adult education in one form or another in Swaziland. It is in response to expressed needs of various adult educators who lack appropriate training and qualifications in this profession, and in whose hands national development plans are placed for effective implementation. These range from agricultural extension educators to functional adult literacy personnel in the rural areas.

In consequence, the curriculum and syllabus of this course is aimed at providing the student with practical knowledge, skills and attitudes in the following branches of Adult Education:

- (a) Philosophies and Practices of Adult Education;
- (b) Adult Psychology;
- (c) Methods and Materials in Adult Education;
- (d) Planning, Organization and Administration of Adult Education;
- (e) Adult Education and Rural Development;
- (f) Subject Studies;
- (g) Field Projects.

1.2 Duration and learning strategies

This course will be covered in two years through programmes of part-time studies in evening classes and supervised field projects during vacations.

1.3 Study Centers and teaching strategies

Strategically, this course will be taught in Kwaluseni Campus and Mbabane (Sebenta National Institute) during evening hours (17:45 to 18:15 hours) when students are relatively free to attend class. Selected tutors for the course (to be drawn from the University and related institutions in the country) will then move to and fro to perform their duties.

1.4 Sponsorship

Successful applicants will be sponsored by their respective employers to ensure utilization of knowledge and askills gained from training, as this is essentially an in-service/up-grading course. However, other deserving cases who can pay for themselves will equally be allowed to attend the course.

1.5 Administration of the Course

This course will be organized and taught jointly by the Division's Extra-Mural Services and the Faculty of Education of the University.

2. Course Outlines

2.1 Overall Objectives:

This course emphasizes on practical aspects of adult education, and so, it covers adult education studies, rural development, and community studies.

It aims at producing adult educators with both knowledge and skills which they can readily and competently apply in their respective job situations to enhance efficiency, productivity and satisfactory performance.

2.2 Contents:

(i) AE 101/2-6 units Philosophies and Practicies of Adult Education

Nature, Aims and Scope of Adult Education;
Form of Adult Education; Adult Education
in Swaziland; Comparative Adult Education;

Methods: Lectures, Discussions, Case Studies,
Assignment;

Assessments: 50% for continuous assessment and
50% for final examination;

(ii) AE 201/2-6 units Adult Phychology

Introduction to Psychology, Human Growth,
Development and Aging;

Human Abilities and their developments;

Adult learning psychology;

Adult Personality;

Psychological Measurement and Assessment.

Methods: Lectures, Discussions, Experiments,
Observations, Assignments;

Assessments: 50% for continuous assessment and
50% for final examination;

(iii) AE 301/1-6 units Methods and Materials in Adult Education

Teaching methods and Techniques in Adult
Education;

Basic Class Teaching Procedures;
Distant Teaching Methods;
Adult Literacy Method;
Practice Teaching and Assessment;

Methods: Lectures, Discussions, Demonstrations,
Workshops, Field Studies, Assignments;
Assessments: 50% for continuous assessments and
50% for final examinations;

(iv) AE 401/2-6 units Planning, Administration and
Evaluation of Adult Education Programs

Nature of organization;
Adult Education organizations in Swaziland;
A systems approach to planning an Adult
Education program;
Educational administration and supervision;
Research; methodology and evaluation in adult
education;

Methods: Lectures, Workshops, Experiments,
Observations, Assignments;

Assessments: 50% for continuous assessment and
50% for final examination;

(ii) AE 501/1-6 units Adult Education and Rural
Development

Nature of the problem of rural development;
Socio-economic foundations of rural development;
Adult education and rural development in
Swaziland;
Development Administration and adult education
efforts in Swaziland;

Methods: Lectures, Observations, Discussions,
Field studies; Assignments;

Assessments: 50% for continuous assessment, and
50% for final examination;

(i) AE 601/1-6 units \ Subject Studies

Based on the subjects that course participants need to utilize at their respective places of work, e.g. home economics;

Methods: Lectures, Discussions, Demonstrations, Assignments;

Assessments: 50% for continuous assessment, and 50% for final examination;

(i) AE 701/2 Field Projects

Method: Supervised field work during the vacations;

Assessment: 50% work satisfactorily completed.

APPENDIX H
THE UNIVERSITY COLLEGE OF SWAZILAND
DIVISION OF EXTRA-MURAL SERVICES (DEMS)
DIPLOMA IN MANAGEMENT

1. Course Objectives and Strategies

1.1 Objectives

The course is for practising managers-for the chief executive, managing directors, heads of departments and individual entrepreneurs. Professional managers expecting promotions to top management posts are likewise encouraged to take this course.

1.2 Duration and Learning Strategies

This course will be offered in two years through programs of part-time studies in evening schools or by correspondence supervised workshops during vacations.

1.3 Study Centers and Teaching Strategies

Strategically, the course will be taught in MANZINI (Salesian High School) and MBABANE (Staff Training Institute) during evening hours (17:45 to 18-15) when students are relatively free to attend class. Selected tutors for the course (who will be drawn from the University and related institutions in the country) will drive up every evening to these centers to perform their duties, this excludes correspondence methods, which will be operated to cater for students up-country.

1.4 Sponsorship

Successful applicants will be sponsored by their

respective employers to ensure utilization of knowledge and skills gained from training, as this is essentially an in-service /up-grading course. However, other deserving cases who can pay for themselves will equally be allowed to attend the course.

2.1 Overall objectives

The overall objective of this course is to provide a sound framework of concepts and analytical methods and techniques which will enable the participant to comprehend and assimilate on-the-job training which will be offered also as part of this course, and equip him, on successful completion of the course, to execute effectively the usual duties of "Assistant General Manager" or "Functional Manager".

2.2 Contents

(i) GM 101/102-6 units

General Management

Nature of organization;

Organization Structure;

Approaches to the study of organizations;

The nature of dynamic processes;

Role of a Manager;

Development Administration;

Modern Management Approaches;

Quantitative Approaches in Management

Organization Change.

Methods: Lectures, Discussions, Role-Plays, Games;

Assessment: 50% for continuous assessment and 50% for final examination.

(ii) BM 201/202-6 units

Business Mathematics

The number system and numerical skills;

Applied Maths;

Simple Algebra;

Sequence and Series;

Elementary Presentational Statistics;

Applied Statistics;

Business Statistics;

Elementary Probability Theory;

Calculus;

Differentiation;

Application of Integration.

Methods: Lectures, Discussions, Practicals;

Assessments: 50% for continuous assessments and
50% for final examinations.

(iii) HBO 301/302- 6 units

Human Behaviour in Organizations

Interpersonal Relationships;

Finding and keeping people;

Appraisals; Job Flexibility;

Providing People with material rewards;

Non-monetary rewards;

Satisfying people at work.

Methods: Lectures; Discussions, Case-Study;
Role-Plays; Sensitivity Training.

Assessments: 50% for continuous assessments and
50% for final examinations.

(iv) PM 401/402-6 units

Production Management

Introduction to production management and
production functions;

Analytical methods in production management;
Aggregate-materials planning;
The "Aspro Co";
Process and product design;
Forecasting;
Lay-out of physical facilities;
Plant capacity;
Quality control and maintenance.

Methods: Lectures; Demonstrations; Case-studies; Projects; Work-Study.

Assessments: 50% for continuous assessments and 50% for final examination.

(v) MM 501/502-6 units

Marketing Management

The marketing concept;
The marketing system;
Analysing Marketing Opportunities;
Planning the marketing Program;
Controlling the marketing effort;
Export Marketing.

Methods: Lectures; Demonstrations; Case-Studies; Simulations.

Assessments: 50% for continuous assessments and 50% for final examination.

(vi) FM 601/602-6 units Financial Management

Double Entry;
Organization of Accounting Data;
Balance Sheet and Profit and Loss Accounts;
Capital and Revenue;

Depreciation;
Sole Trade; Partnership; Limited Companies;
Company Accounts; Share Capital; Debentures;
Groups of Companies; Accounts; Stock Exchange;
Investments; Auditing and Internal Control;
Indexation; Capital Gearing.

Methods: Lectures, Discussions, Case-Studies.

Assessments: 50% for continuous assessments and
50% for final examinations.

(vii) BW - 4 units Business Workshops

Specialized projects to be done during
vacations.

APPENDIX I

UNIVERSITY COLLEGE OF SWAZILAND (UCS)
DIVISION OF EXTRA-MURAL SERVICES (DEMS)

PROJECT BUDGETS (1978-83)

<u>ITEMS</u>	<u>EXPENDITURES/SALARIES</u>				
	<u>1978-79</u>	<u>1979-80</u>	<u>1980-81</u>	<u>1981-82</u>	<u>1982-83</u>
<u>01: SALARIES:</u>					
<u>Academic Staff:</u>					
Professor/Director	(1) 7,200	(1) 7,400	(1) 7,600	(2) 15,000	(2) 15,500
Senior Lecturers/ Assist. Director	(1) 6,500	(1) 6,700	(1) 7,000	(3) 20,000	(3) 21,000
Lecturer/Adult Ed.	(4) 20,000	(5) 26,000	(6) 32,000	(4) 26,000	(7) 36,000
<u>Non-Academic Staff:</u>					
Copy Typist	(1) 900	(2) 2,000	(2) 2,100	(3) 2,700	(3) 3,200
Secretary	(1) 2,000	(1) 2,000	(1) 2,100	(1) 2,500	(2) 3,000
Driver	(1) 800	(1) 900	(1) 1,000	(2) 2,200	(2) 2,700
<u>Allowances:</u>	2,500	3,500	4,200	4,500	6,000
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	(9) 39,900	(11) 47,500	(12) 57,100	(15) 72,900	(19) 88,400
 <u>02: DEPARTMENTAL EXPENSES</u>					
Consumable Materials, Stationary & Audio-					
Visual aids:	500	1,500	2,000	2,500	3,500
Courses & Tutor Fees:	14,000	19,000	22,000	20,000	15,000
Conferences & Non- credit courses:	500	1,200	1,300	1,500	2,000
Travel:	1,000	1,200	1,500	2,000	3,000
Evaluation:	500	1,500	1,800	2,000	2,500
Educ. Broadcasting:	400	1,000	1,500	800	500
Student Projects:	400	1,000	1,500	2,000	2,500
Maint. of Office Equip.	400	800	500	800	1,000
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	17,700	27,200	32,100	31,600	30,000
 TOTAL	 57,600	 74,700	 89,200	 104,500	 118,400
	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>

APPENDIX J

STATUTORY CHECKLIST

6C(1) - COUNTRY CHECKLIST

Listed below are, first, statutory criteria applicable generally to FAA funds, and then criteria applicable to individual fund sources: Development Assistance and Security Supporting Assistance funds.

A. GENERAL CRITERIA FOR COUNTRY

1. FAA Sec. 116. Can it be demonstrated that contemplated assistance will directly benefit the needy? If not, has the Department of State determined that this government has engaged in consistent pattern of gross violations of internationally recognized human rights?
 - a) This project will only indirectly benefit needy.
 - b) No such determination.

2. FAA Sec. 481. Has it been determined that the government of recipient country has failed to take adequate steps to prevent narcotics drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from
 - No such determination has been made

being sold illegally within the jurisdiction of such country to U. S. Government personnel or their dependents, or from entering the U.S. unlawfully?

3. FAA Sec. 620 (a). Does recipient country furnish assistance to Cuba or fail to take appropriate steps to prevent ships or aircraft under its flag from carrying cargoes to or from Cuba? **No.**
4. FAA Sec. 620(b). If assistance is to a government, has the Secretary of State determined that it is not controlled by the international Communists movement? **Yes.**
5. FAA Sec. 620(c). If assistance is to a government, is the government liable as debtor or unconditional guarantor on any debt to a U. S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies **No.**

and (b) debt is not denied or contested by such government?

6. FAA Sec. 620(e) (1). If If No.

assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U. S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities?

7. FAA Sec. 620(f); App. Sec. 180.

Is recipient country a Communist country? Will assistance be provided to the Democratic Republic of Vietnam (North Vietnam), South Vietnam, Cambodia, or Laos? No.

8. FAA Sec. 620(i). Is No.

recipient country in any way involved in (a) subversion of, or military aggression against, the United States or any country receiving U. S.

assistance or (b) the planning of such subversion or aggression?

9. FAA Sec. 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction, by mob action, of U. S. property? Security and protection measures appear to be adequate and reasonable.
10. FAA Sec. 620(1). If the country has failed to institute the investment guaranty program for the specific risks of expropriation, inconvertibility or confiscation, has the AID Administrator within the past year considered denying assistance to such government for this reason? No such denial has been considered.
11. FAA Sec. 620(o): Fishermen's Protective Act, Sec. 5. If country has seized, or imposed any penalty or sanction against, any U. S. fishing activities in international waters,
- a. has any deduction required by Fishermen's Protective Act been made? No such actions.

b. has complete denial of assistance been considered by AID Administrator?

12. FAA SEC. 620(q); App. Sec. 504. No.

a) Is the Government of the recipient country in default on interest or principal of any AID loan to the country?

b) Is country in default exceeding one yuear on interest or principal on U. S. loan under program for which App. Act. appropriates funds, unless debt was earlier disputed, or appropriate steps taken to cure default? No.

13. FAA Sec. 620(s). What percentage of country budget is for military expenditures? How much of foreign exchange resources spent on military equipment? How much spent for the purchase of sophisticated weapons systems?
(Consideration of these points is to be coordinated with the

For 1976/77, defense related expenditures represented 2.3 per cent of the GOS budget expenditures. No money has been spent on sophisticated weapons systems.

Bureau for Program and
Policy Coordination,
Regional Coordinators and
Military Assistance Staff
(PPC/RC).)

14. FAA Sec. 620(t). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumptions? **No, not applicable.**
15. FAA Sec. 620(u). What is the payment status of the country's U. N. obligations? If the country is in arrears, were such arrearages taken into account by the AID Administrator in determining the current AID Operational Year Budget? **There is no indication of any arrears.**
16. FAA Sec. 620(A). Has the country granted sanctuary from prosecution to any individual or group which has committed an act of international terrorism? **We have no knowledge of any such action.**

17. FAA Sec. 666. Does the country object, on basis of race, religion, national origin or sex, to the presence of any officer or employee of the U. S. there to carry out economic development program under FAA? No.

18. FAA Sec. 669. Has the country delivered or received nuclear reprocessing or enrichment equipment, materials or technology, without specified arrangements on safeguards, etc.? We have no knowledge of any such delivery or receipt.

B. FUNDING CRITERIA FOR COUNTRY.

2. Security Supporting Assistance Country Criteria.

a. FAA Sec. 502B. Has the country engaged in a consistent pattern of gross violations of internationally recognized human rights? Is program in accordance with policy of this Section? No. Yes.

b. FAA Sec. 531. Is the Assistance to be furnished to a friendly country, Yes

organization, or body eligible to receive assistance?

c. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?

No Grant Commodities will be sold and thus no sale proceeds will be generated.

6C(2) - PROJECT CHECKLIST.

Listed below are, first, statutory criteria applicable generally to projects with FAA funds, and then project criteria applicable to individual fund sources: Development Assistance (with a sub-category for criteria applicable only to loans): and Security Supporting Assistance funds:

A. GENERAL CRITERIA FOR PROJECT.

1. App. Unnumbered; FAA Sec. 653(b).

(a) Describe how Committees on Appropriations of Senate and House have been or will be notified concerning the project;

(b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that figure plus 10%)?

This project was not included in the most recent Congressional Presentation. Notification will be made in standard procedures.

2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$100,000, will there be
- (a) engineering, financial and other plans necessary to carry out the assistance and
- (b) a reasonably firm estimate of the cost to the U. S. of the assistance?
- (a) Yes.
- (b) Yes.
3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?
- No further legislative action is required.
4. FAA Sec. 611(b); App. Sec. 101. If for water or water-related land resource construction, has project met the standards and criteria as per Memorandum of the President dated Sept. 5, 1973, (replaces Memorandum of May 15, 1962; see Fed. Register, Vol. 38, No. 174, Part III, Sept. 10, 1973)?
- This is not a water or water-related land resource construction project.

5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U. S. assistance for it will exceed \$1 million, has Mission Director certified the country's capability effectively to maintain and utilize the project? Yes.
6. FAA Sec. 209, 619. Is project susceptible of execution as part of regional or multilateral project? If so why is project not so executed? Information and conclusion whether assistance will encourage regional development programs. If assistance is for newly independent country, is it furnished through multi-lateral organizations or plans to the maximum extent appropriate? No.
7. FAA Sec. 601(a); (and Sec. 201(f) for development loans). Information and conclusions whether project will encourage efforts of the country to: The project will improve GOS training capability for middle level personnel. This will

- (a) .increase the flow of international trade;
 - (b) foster private initiative and competition;
 - (c) encourage development and use of cooperatives, credit unions, and savings and loan associations;
 - (d) discourage monopolistic practices;
 - (e) improve technical efficiency of industry, agriculture and commerce; and
 - (f) strengthen free labor unions.
8. FAA Sec. 601(b). Information and conclusion on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).
9. FAA Sec. 612(b). Sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services.
- improve the capacity of Swazi citizens to participate effectively in the development of both public and private sectors.
- The project will fund U.S. source technical assistance, U.S. university training and some U.S. commodities.
- GOS will contribute approximately 26 percent of project costs.

10. FAA Sec. 612(d). Does the U. S. own excess foreign currency and, if so, what arrangements have been made for its release? Not an excess foreign currency country.

3. PROJECT CRITERIA SOLELY FOR ASSISTANCE.

FAA Sec. 531. How will this assistance support/promote economic or political stability?

The project will improve the ability of Swazi citizens to participate effectively in the public and private sectors of Swaziland. Upgrading of skills of Swazi citizens should improve the economic status of those participating in training courses provided under this project, thus improving the economic and political stability of the country.

The Standard Item Checklist has been reviewed for this paper.

APPENDIX K
DRAFT PAF II
PROJECT AUTHORIZATION AND REQUEST FOR
ALLOTMENT OF FUNDS
PART II

Name of Country: Swaziland
Name of Project: University College of Swaziland
Number of Project: 690-008

Pursuant to Part II, Chapter 4, Section 531 of the Foreign Assistance Act of 1961, as amended, I hereby authorize a Grant to Swaziland, the "Cooperating Country", of not to exceed nine hundred and ninety six thousand United States Dollars, (\$996,000) to help in financing certain foreign exchange and local currency costs of goods and services required for the project as described in the following paragraph.

The project consist of assisting Swaziland to strengthen the Division of Extra-Mural Studies (DEMS) of the University College of Swaziland thus enabling the University to meet adult education needs of Swazis in both the public and private sectors. To achieve this objective AID will help finance the cost of technical assistance personnel to provide the training, participant and in-service training, related commodities, and construction.

I approve the total level of AID appropriated grant funding planned for this project during the period FY-1978 through FY-1983 of not to exceed two million, fifty eight thousand, five hundred United States Dollars (\$2,058,500), including the FY-1978 funding as authorized above and increments during this period of Grant funding up to one million sixty two thousand, five hundred United States Dollars (\$1,062,500) subject to the availability of funds and in accordance with AID allotment procedures.

I hereby authorize the initiation of negotiation and execution of the Project Agreement by the officer to whom such authority has been delegated in accordance with AID regulations and Delegations of Authority subject to the following essential terms and covenants and major conditions; together with such other terms and conditions as AID may deem appropriate:

a. Source and Origin of Goods and Services

Except for ocean shipping and as provided under paragraph d, goods and service financed by AID under the project shall have their source and origin in Swaziland and in

countries included in AID Geographic Code 941, except as AID may otherwise agree in writing. Ocean shipping financed under the grant shall be procured in any eligible source country except Swaziland.

B. Condition Precedent to Disbursement

Prior to any disbursement, on the issuance of any commitment documents under the Project Agreement, for the purpose of financing construction costs, the Grantee shall furnish in form and substance satisfactory to AID an executed contract(s) for construction services with a firm(s) acceptable to AID.

C. Covenants

The Grantee shall covenant to provide all required training and counterpart personnel on a timely basis and in accordance with a schedule to be specified in Project Implementation Letters. The Grantee shall also covenant to establish positions for personnel undergoing U.S. long-term training no later than the date on which they return to Swaziland.

d. Waivers

Based upon the justification set forth in annex C of the Project Paper, the following waivers are hereby approved:

- (1) The requirement under Handbook 15 that commodities procured with grant funds have their source and origin in the U.S. (AID Geographic Code 000) is waived to permit procurement of approximately \$535,000 of construction materials which have their source and origin in countries included in AID Geographic Code 935 (Special Free World). Exclusion of procurement of construction materials from Code 935 countries would seriously impede attainment of U.S. foreign policy objectives and the objectives of the foreign assistance program;
- (2) The requirement under Handbook 15 that commodities procured with grant funds have their source and origin in the U.S. (AID Geographic Code 000) is waived to permit procurement of nine project vehicles, at an approximate cost of \$81,000, which have as their source and origin countries included in AID Geographic Code 935 (Special Free World). Exclusion of procurement of the project vehicles from countries included in Code 935 would seriously impede attainment of U.S. foreign policy objectives and the objectives of the foreign assistance program. Special circumstances exist which justify waiver of the requirement of Section 636(i) of the Act;
- (3) The policy set forth in Handbook 11 limiting employment of Third Country Nationals for AID-financed construction projects to 20% of the non-local work force is waived.

APPENDIX L

INITIAL ENVIRONMENTAL EXAMINATION

PROJECT LOCATION: SWAZILAND

PROJECT TITLE: UNIVERSITY COLLEGE, SWAZILAND

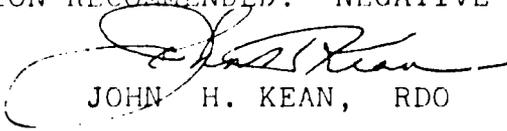
FUNDING: \$2,058,500

LIFE OF PROJECT: FY 1978 - FY 1982

IEE PREPARED BY: REDSO/OSARAC

ENVIRONMENTAL ACTION RECOMMENDED: NEGATIVE DETERMINATION

CONCURRENCE:


JOHN H. KEAN, RDO

DATE January 5, 1978

ASSISTANT ADMINISTRATORS DECISION

DATE _____

I. Project Description

The project is designed to link the University College of Swaziland to rural development through, (1) strengthening existing institutions in rural adult education and integrate development, (2) helping to provide in-service training in management, administration and business skills to employees in the public and private sectors whose performance affects rural development, and (3) making the University student body more aware of and involved in problems of rural development. The Division of Extra-Mural Studies (DEMS) will be the institutional link between the University resources and the manpower training activities.

The project will provide, (1) three U.S. technicians to assist the Division in developing its programs, (2) participant training to future staff members, (3) in-service training to current staff members and part-time tutors, (4) one classroom/laboratory block with three multi-purpose classrooms and two storage and preparation rooms, (5) one 96 bed student hostel, (6) three senior staff houses, (7) seven project vehicles, and (8) commodities such as audio-visual equipment, office supplies, etc.

The site selected for the construction is located on the present campus of the University in Kwaluseni; the campus is located 34 km south of the capital, Mbabane, and 9 km west of Swaziland's largest town, Manzini. There are presently some 700 students enrolled in the University, majority living on campus. There are presently numerous staff houses on the campus, and space has been reserved for the additional houses to be constructed as part of this project.

Construction methods will be standard for Swaziland. Buildings will be single or doubled story, of hollow concrete block construction. The roof structures will consist of standard structural steel trusses, supporting low pitched

corrugated metal roofing. Floors will be reinforced concrete slabs, covered with vinyl floor tiles.

II. Discussion of Impacts

A. Direct Impacts

1. Construction Activities

a. Land use: All building sites are presently undeveloped, overgrown with grass and some shrubs, on university owned land. The buildings will be erected within the present campus boundary, in accord with campus development plans. Landscaping will be carried out by the University after building construction is completed. The project will therefore not conflict with any present or future land use plans.

b. Water Supply: The campus is presently supplied with water from the Matsapa Reservoir. While supplies are adequate for the next two to three years, the need for expansion is seen. Plans are therefore underway for construction of an additional water supply system by the European Development Fund (EDF), using the Natanuma River as the source. The system, which will include treatment, will be in operation by the time existing supplies are inadequate to meet the demand. Therefore, domestic water supply to the proposed buildings will be adequate upon completion of construction and for continued operation.

c. Waste Disposal: Domestic wastewater from the hostels and houses will be conveyed to the existing campus sewer system to the Manzini sewage treatment plant. The laboratory will be equipped with a separate disposal system for corrosive and hazardous wastes; all other liquid wastes will be conveyed to the domestic sewerage system. The capacity of the Manzini sewage treatment plant is adequate to handle the additional flow and organic loadings.

Solid waste collection and disposal will be handled by the

Manzini Cleansing Department, which presently serves the campus.

d. Support Facilities: Food, recreation and guest lodging facilities are already available on campus. The additional consumers of these services brought about by the new buildings can be catered for by these existing facilities.

e. Safety: The design of the buildings will include the normal fire escapes and locations for fire fighting equipment. EDF funding will provide fire fighting equipment and sprinkler systems.

2. Training Activities

a. Cultural Change: The development of the DEMS programs will have little, if any impact on the socio-cultural system. Changes in traditional and cultural patterns are already underway in Swaziland through the desire to be self-sufficient and independent. Course participants will have had extensive contact with the substance and structure of formal "Western" education. Thus, the additional schooling and training in the DEMS programs will involve only incremental changes in the modernizing of the participant's orientation and life style.

b. Changes in Economic/Employment patterns: Virtually all participants in the DEMS programs are currently involved in the cash economy and live in or near urban areas. The completion of a DEMS course may provide the graduate with opportunities such as a job promotion, salary increase or a different career. The overall impact of the training will therefore be very positive by providing qualified Swazi personnel to the public and private sectors of the modernizing economy.

B. Short-term Impacts

Short-term impacts are related to the construction activities to be undertaken in the project. Impacts such as

dust and noise will obviously create nuisances, but are unavoidable. These short-term impacts, however, are not viewed as significant within the overall context of the project.

III. Recommendation

On the basis of the information supplied herein, it is clearly indicated that the project will not have significant negative impacts on the environment, and that the beneficial impacts are numerous. The proposed construction will relieve serious overcrowding of both students and faculty in terms of housing, which presently exists at the University. The training activities are in accordance with the manpower development plan of Swaziland, promoting both rural and urban development. It is therefore recommended that a Negative Determination be made for this project.

IMPACT IDENTIFICATION AND EVALUATION FORM

Impact Identification and Evaluation 2/

Impact Areas and Sub-areas 1/

A. LAND USE

1. Changing the character of the land through:

- a. Increasing the population ----- L
- b. Extracting natural resources ----- L
- c. Land clearing ----- L
- d. Changing soil character ----- N

2. Altering natural defenses ----- N

3. Foreclosing important uses ----- N

4. Jeopardizing man or his works ----- N

5. Traffic Access ----- N

6. Land Use Planning ----- L

7. Squatter, other development ----- N

B. WATER QUALITY

1. Physical state of water ----- N

2. Chemical and biological states ----- N

3. Ecological balance ----- N

4. Other factors -----

1/ See Explanatory Notes for this form.

2/ Use the following symbols:

- N - No environmental impact
- L - Little environmental impact
- M - Moderate environmental impact
- H - High environmental impact
- U - Unknown environmental impact

IMPACT IDENTIFICATION AND EVALUATION FORM

C. ATMOSPHERIC

- 1. Air additives ----- N
- 2. Air pollution ----- L
- 3. Noise pollution ----- L
- 4. _____
- _____
- _____

D. NATURAL RESOURCES

- 1. Diversion, altered use of water ----- N
- 2. Irreversible, inefficient commitments ----- N
- 3. Wildlife ----- N
- _____
- _____

E. CULTURAL

- 1. Altering physical symbols ----- N
- 2. Dilution of cultural traditions ----- L
- _____
- _____

F. SOCIOECONOMIC

- 1. Changes in economic/employment patterns ----- L
- 2. Changes in population ----- N
- 3. Changes in cultural patterns ----- L
- _____
- _____

IMPACT IDENTIFICATION AND EVALUATION FORM

G. HEALTH

- 1. Changing a natural environment ----- N
- 2. Eliminating an ecosystem element ----- N
- 3. New pathways for disease vectors ----- N
- 4. Safety provisions ----- N
- N
- N

H. GENERAL

- 1. International impacts ----- N
- 2. Controversial impacts ----- N
- 3. Larger program impacts ----- N
- 4. Aesthetics ----- L
-
-

I. OTHER POSSIBLE IMPACTS (not listed above)

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-
-

See attached Discussion of Impacts.