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INTERNATIONAL DEVELOPMENT COOPERATION AGENCY

AGENCY FOR INTERNATIONAL DEVELOPMENT

Washington, D.C. 20523

YEMEN: PROJECT 279-0053

BASIC EDUCATION DEVELOPMENT

GRANT

PRIMARY AND SCIENCE EDUCATION SUB-PROJECT PAPER

UNCLASSIFIED

AGENCY FOR INTERNATIONAL DEVELOPMENT SUB PROJECT DATA SHEET				1. TRANSACTION CODE A A = Add C = Change D = Delete		Amendment Number TWO		DOCUMENT CODE 3		
2. COUNTRY/ENTITY YEMEN ARAB REPUBLIC				3. PROJECT NUMBER 279-0053						
4. BUREAU/OFFICE NE				5. PROJECT TITLE (maximum 40 characters) BASIC ED. DEV. PROJ. Primary & Sci. Ed. Subproject						
6. PROJECT ASSISTANCE COMPLETION DATE (PACD) MM DD YY 09 30 86				7. ESTIMATED DATE OF OBLIGATION (Under 'B' below, enter 1, 2, 3, or 4) A. Initial FY 79 B. Quarter 4 C. Final FY 86						
8. COSTS (\$000 OR EQUIVALENT \$1 =)										
A. FUNDING SOURCE			FIRST FY 80			LIFE OF PROJECT				
			B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total		
AID Appropriated Total			712.2	154.3	866.5	6995.4	2145.8	9141.2		
(Grant)			(712.2)	(154.3)	(866.5)	(6995.4)	(2145.8)	(9141.2)		
(Loan)			()	()	()	()	()	()		
Other U.S.										
1.										
2.										
Host Country			277.0		277.0		5303.2		5303.2	
Other Donor(s)										
TOTALS			712.2	431.3	1143.5	6695.4	7449.0	14,444.4		
9. SCHEDULE OF AID FUNDING (\$000)										
A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		Prior submissions to date		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT		
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	
(1) EH	620	630		19,151.1		9,141.2		28,292.3		
(2)										
(3)										
(4)										
TOTALS				19,151.1		9,141.2		28,292.3		
10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)								11. SECONDARY PURPOSE CODE		
634		640		690				624		
12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)										
A. Code		BR		R/ED		TNG		PART		
B. Amount		1/4		1/4		1/4		1/4		
13. PROJECT PURPOSE (maximum 480 characters)										
<p>To develop within the Faculty of Education a new Department of Primary Education to support and provide leadership for all aspects of primary education, Gr. 1-6, in Yemen and to improve science education in preparatory and secondary schools in Yemen by providing higher quality teachers through a new program of science education at Sana'a University and through inservice education of existing teachers.</p>										
14. SCHEDULED EVALUATIONS					15. SOURCE/ORIGIN OF GOODS AND SERVICES					
Interim		MM YY		MM YY		Final		MM YY		
09 81		01 83		09 86						
					<input checked="" type="checkbox"/> 000 <input checked="" type="checkbox"/> 941 <input checked="" type="checkbox"/> Local <input type="checkbox"/> Other (Specify)					
16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a 27 page PPT/ANNEXURE)										
<p>The Primary and Science Education Subproject is Amendment Two of the Basic Education Development Project. The first subproject is the Primary Teacher Training Component Subproject; the second is the Core Subproject.</p> <p>PTT Subproject amount: \$10,023,000 Core Subproject amount: 9,128,100 Primary & Science Education Subproject amount: 9,141,200</p>										
17. APPROVED BY		Signature <i>Chester S. Bell, Jr.</i> Chester S. Bell, Jr.						18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION		
		Title Acting Director				Date Signed MM DD YY 05 03 80				
								MM DD YY 05 09 80		

UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523



THE ADMINISTRATOR

SECOND AMENDMENT
TO
PROJECT AUTHORIZATION

Name of Country: Yemen Name of Project: Basic Education
Development (Primary
and Science Education
Sub-Project)

Number of Project: 279-0053

1. Pursuant to Part I, Section 105 (Education and Human Resources Development) of the Foreign Assistance Act of 1961, as amended, the Basic Education Development Project for the Yemen Arab Republic (Y.A.R.) was authorized on August 23, 1979. That authorization, as amended, is hereby amended as follows:

a. In addition to the amount originally authorized for the Primary Teacher Training Sub-Project and the Core Sub-Project, not to exceed Nine Million One Hundred Forty One Thousand Two Hundred United States dollars (\$9,141,200) in grant funds shall be available for the Primary and Science Education Sub-Project described herein. These additional funds are to be made available over a six year period from the date of the second amendment to the authorization, subject to availability of funds in accordance with the A.I.D. OYE/allotment process, to finance the cost of goods and services required for the Sub-Project.

b. The definition of the Project is amended by adding the following Sub-Project activity:

The Primary and Science Education Sub-Project is designed to improve the economic and social conditions of the people of the Yemen Arab Republic by developing within the Faculty of Education of Sana'a University a new Department of Primary Education (DPE) to support and provide leadership for all aspects of primary education in preparatory and secondary schools. The Project will provide assistance through a new program of science education at Sana'a University and through in-service training of existing teachers.

Sub-Project elements will include:

- (1) A general planning component
- (2) Curriculum development within the DPE
- (3) Participant and on-the-job counterpart training
- (4) Establishment of a curriculum and instructional materials laboratory
- (5) Establishment and equipping science labs at Sana'a University, and
- (6) In-service training to teachers, administrators and supervisors.

2. I hereby authorize the initiation of negotiation and execution of an amendment to the Project Agreement by the officer to whom such authority has been delegated in accordance with A.I.D. regulations and delegations of authority subject to the following essential covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate:

a. Conditions Precedent to Disbursement For Primary and Science Education Sub-Project Activities

Prior to any disbursement or the issuance of commitment documents under the Project for Primary and Science Education Sub-Project activities, the Y.A.R. shall, except as A.I.D. may otherwise agree in writing, furnish in form and substance satisfactory to A.I.D.:

- (1) Names of persons who will act as the representatives of the Y.A.R. for this Sub-Project together with evidence of their authority and the specimen signature of each;
- (2) A list of program participants who begin participant training under this Sub-Project in 1980;
- (3) Evidence of availability of sufficient office and classroom space and facility necessary to carry out the Sub-Project activities;
- (4) Evidence of establishment of participant selection procedures, acceptable to A.I.D., which shall include final endorsement of program participants by both A.I.D. and Deans of the Faculty of Science and Faculty of Education at Sana'a University.

b. Special Covenants for Primary and Science Education
Sub-Project Activities

(1) The Cooperating Country, after consultation with A.I.D. shall agree to provide appropriate salary and professional incentives to encourage full participation of secondary school science teachers and inspectors participating in the planned in-service program.

(2) The Cooperating Country shall endeavor to complete a study of teacher retention problems at all educational levels in the Yemen Arab Republic.

(3) The Cooperating Country shall agree to provide salaries, school supplies, teaching materials, furniture, logistical support and other goods and services as required to meet the demands created by expansion of primary and science education as a result of project.

(4) The Y.A.R. shall agree to discuss with A.I.D. various additional alternatives and incentives for retaining program participants such as furnishing housing, bonuses for teaching in remote locations and accelerated promotion schedules.

(5) The Y.A.R. shall grant appropriate salary increases to program participants upon notification of successful completion of the graduate degree.

(6) The Y.A.R. shall continue full salaries and benefits to participants during all phases of the Project.

(7) The Y.A.R. shall require at least five years of service to Sana'a University following completion of the graduate degree program.

(8) The Y.A.R. shall hold all degree documents in order to guarantee that participants will complete the service agreement.

(9) A long range plan for development of the Faculty of Education acceptable to A.I.D. will be approved by Sana'a University within nine months from the date of the arrival of the long-term Faculty of Education advisor.

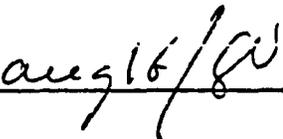
(10) The Y.A.R. shall agree to endeavor, to the maximum extent practicable, to increase the participation of women in every phase of the Sub-Project.

(11) Unless A.I.D. otherwise agrees in writing, the Grantee, within nine months from date of signing the project grant agreement making funds available for the Primary and Science Education Sub-Project, shall furnish a detailed equipment procurement plan with cost estimates based on procurement for lab facilities (life sciences, physical sciences, curriculum/instructional materials) in form and substance satisfactory to A.I.D.

Except as amended above, the authorization for A.I.D. Project 279-0053 shall remain fully effective.



Douglas S. Bennet, Jr.



Date

Clearances:
A-AA/NE:ADWhite  Date: 7-25-8
NE/DP:BLangmaid  Date: 7/24/80
GC/NE:NLHolmes  Date: 7/29/80
AA/PPC:AShadow  Date: 5/11/80

Drafter:GC/NE:TCarter:paj:7/17/80


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| 3. Harry Johnson | Program Officer |
| 4. Bruno Kosheleff | Deputy Program Officer |
| 5. Diane Ponasik | Behavioral Science Advisor |
| 6. Frank Pavich | Capital Development Advisor |
| 7. Basharat Ali | Capital Development (IDI) |
| 8. Ronald Hammersley | Accounting Financial Analyst |

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USAID/Y SUB-PROJECT APPROVAL OFFICER

Chester S. Bell, Jr.	Acting Director
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PRIMARY AND SCIENCE EDUCATION SUB-PROJECT

TABLE OF CONTENTS

	<u>Page</u>
I. RECOMMENDATION	1
II. SUB-PROJECT SUMMARY	2
A. Introduction	2
B. The Program	2
C. Sub-Project Inputs	3
III. DETAILED SUB-PROJECT DESCRIPTION	3
A. Background	3
B. Sub-Project Goal	8
C. Sub-Project Purpose	8
D. End of Sub-Project Status	9
E. Sub-Project Outputs	12
F. Inputs	12
IV. SUB-PROJECT IMPLEMENTATION	13
A. Implementation Strategy	13
B. Implementation Strategy by Output	14
V. ISSUES	16
A. The Availability of Suitable Trainees	16
B. Cooperation Between the Ministry of Education and Sanaa University	17
C. Sanaa University Recurring Budget Allocations	17
D. Incentives Necessary to Retain Personnel	18
VI. PROGRAM MONITORING AND EVALUATION	18
VII. SUB-PROJECT ANALYSES	19
A. Economic Analysis	19
B. Social Soundness	21
C. Administrative Feasibility	24
D. Technical Analysis	25
VIII. ANNEXES	
A. Financial Plan	1
B. Log Frame	15
C. Implementation Schedule	17
D. First Annual Workplan	20
E. YAR Government Letter of Request	26
F. Statutory Checklist	27
G. Approval Messages	35
H. Project Identification Document	40
I. Criteria for Selection	49
J. Social Soundness	50
K. Girls and Women in Education	57

	<u>Page</u>
L. Figures and Tables	65
M. Conditions Precedent and Covenants	76
N. Evaluation of the Three Year Development Program, 1973-1976	77
O. Education Sector: YAR First Five Year Plan, 1976-1981	82
P. Environmental Clearance	89

- IX. UNATTACHED ANNEXES
- Curriculum and Instructional Materials Laboratory
 - Physical Science Laboratory: Preliminary
Description
 - Life Sciences Laboratory: Preliminary
Description
 - Education Sector Study, July, 1979

PREFACE

Project 279-0053, Basic Education Development, is comprised of a series of subprojects. The Project Paper (PP) for the Project is, in turn, comprised of a series of Subproject Papers (SPP). The PP was initially established with the submission of the SPP for the Primary Teacher Training Subproject (PTTI) component of the Project. The SPP for the Core Subproject was added to the PP as Document Amendment One. This Subproject Paper for the Primary and Science Education Subproject is added to the PP as Document Amendment Two.

The purpose of this Amendment is to seek approval for the Primary and Science Education component of a comprehensive program in basic education development for the Yemen Arab Republic. The overall concept of this program is delineated in the SPP for the Core Subproject.

Although submitted as an Amendment to the PP, this document, as its predecessors, stands on its own as the Subproject Paper for the Primary and Science Education Subproject of the Basic Education Development Project.

PRIMARY AND SCIENCE EDUCATION SUB-PROJECT

I. Recommendation

AID/Yemen recommends that AID/W approve the Primary and Science Education Sub-project proposed in this paper, which is an amendment to the Basic Education Development Project (279-0053). A description of the overall project is contained in the Core Sub-project Paper. The sub-project described herein is one of several sub-projects which, together, make up the Basic Education Development Project (279-0053). This sub-project was designed in Yemen under the Collaborative Assistance Mode involving the Ministry of Education, Sanaa University, USAID/Y, and Eastern Michigan University.

This sub-project will provide assistance to the Faculties of Science and Education at Sanaa University to 1) develop, equip and staff a science education program capable of training science teachers appropriate for the preparatory, secondary and PTIIs of Yemen and 2) establish a Department of Primary Education with qualified staff offering courses in general primary education, PTII staff training and administration and supervision. Further, the faculties will have the capability to provide inservice training as required in primary education and science methods.

To support the activities of the staff, two laboratories for science education and a curriculum materials and research and development center will be established.

Through a combination of U.S. and on-the-job training, the sub-project will train eight science educators and six primary education personnel. Technical assistance will be provided for the development of science content and science methods courses as well as professional courses at the primary education level.

The sub-project will require six years to complete with a LOP cost of approximately \$14,500,000 of which AID will furnish \$9,141,000.

The project will be implemented through the Collaborative Assistance Mode as part of the Eastern Michigan University Contract for the Basic Education Development Project 279-0053.

II. Sub-Project Summary

A. Introduction

The Faculty of Education has responsibility for providing leadership and trained manpower for the education system of Yemen. However, as presently constituted, it cannot carry out this responsibility. Created in 1974, it has so far established and implemented programs to produce only preparatory and secondary level teachers. These programs in themselves are technically deficient and woefully understaffed. Currently, there is a faculty of only four expatriates for over 900 students. There is a total lack of programs or course offerings of any kind in primary education. The education methods courses in science are poorly developed and not suited to the needs of Yemen. The Faculty of Education cannot therefore fill Yemeni needs for teacher trainers for the Primary Teacher Training Institutes, supervisors of primary or science education, curriculum planners, primary school administrators or science teachers for preparatory and secondary schools. Consequences of the lack of an effective Faculty of Education have been the necessity to import expatriate primary level and science teachers, the necessity for a USAID project separate from the University, to meet the short term need for M.A. level primary teacher trainers and elevate a general shortage of trained staff for the Ministry of Education.

Until the Faculty of Education has a functioning department of primary education, it cannot fill the needs noted above nor provide necessary leadership for the development of the primary education system. Yemen will have to continue to rely on expatriates to fill many key posts and, by default, to take the lead in the development of the primary education system. Until the science education program is redesigned and adequately staffed, the University output of science teachers will be inadequate to the needs of Yemen.

B. The Program

The purpose of this sub-project is to assist Sanaa University to create and staff a new Department of Primary Education. The sub-project will do this by assisting the Faculty of Education to formulate short and long term plans, collaborating in the development of curricula for undergraduate and graduate programs in primary education, providing participant training to prepare Yemeni to staff the new department and program.

The sub-project will also assist the Faculties of Science and Education to redesign science education programs. New science content and science education methods courses will be designed and tested. Science labs for the new courses will be designed and equipped, and staff will be trained for the new program.

The principal in-country activity during the first year will be the provision of resident advisors and short term consultants to Sanaa University who will assist in the drafting of short and long term plans, formulation of programs for teacher training, and the design

of specific courses. Another product of the first year will be a detailed work plan for the remainder of the project. During this first year, staff needs will also be finalized, participants selected, and approximately half the required long term trainees will depart for training.

C. Sub-Project Inputs

The life of sub-project costs spread over six years is \$14,500,000. This activity is a sub-project of the Basic Education Development (279-0053) project and will be implemented using the Collaborative Assistance Mode through an existing contract with Eastern Michigan University.

III. Detailed Sub-Project Description

A. Background*

Colleges of Education play crucial roles in the development and operation of a nation's education system. The nature of the role varies from country to country and with the degree of development in particular countries. The role of providing trained manpower for the operation of the system and the leadership for its improvement are universal. Without an established university or huge numbers of citizens being trained in other countries, a nation must rely on expensive expatriates. Yemen finds itself in this position. Its only Faculty of Education is not meeting its needs, and not enough Yemenis are studying abroad. The result is that more than 5,500 expatriate educators at all levels of the education system are currently employed in Yemen.

The Faculty of Education as presently constituted cannot adequately meet the need for trained manpower for the Yemeni education system. Among the needs are teacher trainers for primary teacher training institutes, primary school administrators, primary education and other subject matter supervisors or "inspectors," inservice trainers, Ministry of Education staff in various areas, science and math teachers. This is true because the Faculty of Education lacks two of the main ingredients of a program: staff and well developed curricula. During the 1979-80 school year, there are four professors (two part-time and one, an Assistant Dean) for over 900 students. Curriculum and courses do not exist in, among other areas, primary education, administration and supervision, curriculum design and instructional materials. In the only area where the Faculty of Education trains teachers--for secondary education--students major in another college such as science, math or literature along with regular majors in those colleges. During the last year or two they receive a few courses in teaching methods --mostly taught by content specialists, not professors whose field is teaching methods.

*A general discussion of the education system of Yemen appears in the Core Sub-project Paper and in the Education Sector Study. Only that background specific to the establishment of a Primary Education Department in the College of Education and the redesign of the science education program will be included here.

If Yemen is to develop its basic education system--and in this specific instance we refer to the primary schools--, it must have a Faculty of Education capable of meeting its manpower needs in this area. This sub-project intends to assist in the building of such a faculty.

In some respects the building of a new department for primary education is an easier task than the one faced in science education. Here then is a program to train science teachers that is of relatively recent origin. However, for the ordinary citizen, science education, at all levels, has not escaped the boundaries of a classical orientation to learning. Science education has not developed along the lines of usable, practical, life-oriented knowledge and skills. Despite a reasonable level of income, quality-of-life indicators remain low. With the poor, both rural and urban, there is a lack of understanding of modern, scientific principles which touch directly upon issues related to the quality of life. Personal hygiene, health education, agriculture, nutrition, maternal health, and child care are notable among the areas of applied sciences which have remained largely neglected. The situation is little better for those who have attended school.

For the 12 percent of school age population who receive some type of formal education (almost all of them males), science education consists, in general, of the memorization of theoretical concepts with almost no experimental laboratory components which are needed to apply the basic sciences in daily life. A major part of the science education information is not presented in a way that can be a contributing factor to the improvement of the quality of life for the people of Yemen. Personnel with applied science capabilities are needed to permit advancement in areas which accelerate economic development such as agriculture, medicine and engineering.

Science education, therefore, is perceived by leaders as an essential component in the system of basic education at all levels. This is consistent with AID objectives to improve the QOL in rural Yemen. Providing basic science information to children in primary schools is a proven method of transmitting this information to the family and the broader community. However, few of the Yemeni science teachers and inspectors have specific backgrounds in science teaching techniques and curriculum development. Consequently, PTIIs, secondary schools, preparatory schools, and primary schools are currently staffed by teachers who have had little, if any, experience in science teaching methodology. Although there are schools in the country which have equipment and somewhat sophisticated teaching materials, they are either being misused, or neglected, because of the lack of trained science teachers who understand their value and use. Moreover, teachers receive only limited help or leadership from their inspectors, headmasters, or other Ministry of Education personnel.

This situation has developed for several reasons.

-- At Sanaa University, the Faculty of Science is devoted to teaching theoretical research-oriented aspects

of science, and graduates have difficulty translating their skills to meet the needs of the people.

- The Faculty of Education does not have a Science Education Department and hence is not producing graduates versed in science education methodology. Therefore, the University is not producing for the Primary Teacher Training Institutes the secondary, preparatory, or PTI staff who can present in appropriate ways the sort of information that is relevant to the understanding of basic concepts in health, nutrition, sanitation, and agriculture.

The Ministry has attempted to integrate this situation through the use of expatriate teachers and supervisors. Preparatory and secondary schools in Yemen presently rely on that alternative. However, the Ministry of Education has only partial control over the selection of those teachers, and their maximum length of service may not exceed four years. Because of their status, many are not responsive to supervision by principals and inspectors and do not involve themselves in programs of curriculum development.

Nevertheless, initial Ministry of Education efforts to develop science curricula have begun, but the lack of trained personnel at all levels has resulted in ineffective implementation, evaluation and refinement.

When examining the status of science education in the Yemen Arab Republic, it is important to keep in mind that the public education system has been in existence for only ten years. It began in 1970 following a major governmental change and eight years of civil war. Its administrators, who themselves are new, were asked to manage a new system and to plan and expedite its expansion. Indicators of the unevenness of expansion and general development are overcrowded classrooms in some areas, empty and teacherless schools in others, and the complete lack of schools in still other areas. Under those conditions, it is difficult to implement, monitor, and improve curriculum in any subject. It is especially difficult in a subject such as science which requires special materials and methodologies.

Yemen is at a period in its development where it feels the need to supplement traditional education with modern approaches and techniques. The low levels of development, public services and the quality of life, as indicated by a life expectancy of 37 years, a literacy rate of 12 percent, and a doctor/patient ratio of 1/26,000 in urban areas and 1/157,000 in rural areas illustrate the magnitude of the task facing the government. Skilled expatriates--engineers, doctors, teachers, architects, planners--have been brought in to assist in development, but in the final analysis Yemen must develop its own human resources to meet its own development needs. This sub-project addresses the improvement of basic science education which is essential to the establishment of self-sufficiency in this area and to serve as a base for further expansion.

A science curriculum has recently been developed for grades one to twelve. In grade one of the primary school, three forty-five minute periods a week are devoted to science. The sequence of topics as presented seem to be appropriate for this grade level. The program for all subsequent grades through grade twelve seems equally appropriate. However, it is recognized by MOE officials that this curriculum is not now effectively taught in the schools and cannot be effectively taught until Yemeni teachers are trained for all levels, and appropriate instructional materials and laboratory exercises are developed.

The Ministry of Education recognizes the need for additional training and assistance to implement the science education program successfully. The improvement in science education, especially in secondary level schools, will increase the numbers and quality of students entering Sanaa University in both the Faculty of Education and Faculty of Science. It necessitates the development of a modern and viable science education program in the Faculty of Education and the Faculty of Science at Sanaa University.

In keeping with those overall objectives, this sub-project will strengthen the Faculty of Science and the Faculty of Education of Sanaa University to better prepare science teachers at all levels. Preparation of science teachers for preparatory and secondary schools will be improved indirectly through better preparation of teacher trainers for the Primary Teacher Training Institutes.

Sanaa University has recently decided to open a branch campus in Taiz. Two faculties will be established--science and education. Although long range intentions are unclear, the Dean of the Faculty of Education may be in Taiz. Two of the reasons given for the Taiz location are that 80 percent of the students come from that area anyway and that many qualified women who are not able to come to Sanaa will be allowed to attend the branch in Taiz.

The program will start in October, 1980 with about 120 education majors in science, English as a foreign language, Arabic and Islamic studies. The number of science students in the first year is not known. Because the program is new, starting with the first year only and adding a class each year, and is in a new location, the University has the opportunity to try a completely new program structure. Sanaa University sees this as an opportunity to innovate and test new approaches. AID has been asked to provide the assistance of EMU in designing the new program. The major activity in Taiz will be assistance with the science education curriculum. Minor short term assistance will be given in teaching English as a foreign language by EMU English staff working on the PTTI sub-project.

1. Relationship to CDSS

USAID/Yemen, in its Country Development Strategy Statement FY 1981 lists the following as #1 under "Objectives and Programs:"

"Institutional development of the basic educational system (primary, secondary, and nonformal) to provide the skills needed for fulfillment of basic human needs and productive utilization of increased personal income."

Specific mention is also made in this CDSS of the need to strengthen the Faculty of Education, Sanaa University, especially as this pertains to its capacity to train primary teacher trainers.

U. S. efforts to assist the YARG in basic educational development are of high priority within the context of overall assistance. Further, this assistance is institution building in nature, intended to leave at the end of the project established institutions and systems which will be self-perpetuating.

2. Yemen Arab Republic Government Objectives in Education

The Yemen Arab Republic Government intends to pursue educational development for the next decade per the objectives identified in the first Five-Year Plan (1976-1981). These are stated as follows:

- a. The realization of social equity and justice by the implementation of universal education in the YAR.
- b. The development of human resources at all levels to meet the needs of the education sector and those of other sectors.
- c. The localization of the teaching staff at all levels, to attain self-sufficiency throughout the education system.
- d. The development and improvement in the standard of financial, administrative, and organizational efficiency in the Ministry of Education, the governorates and the educational and training institutions.
- e. The development and improvement of the University system in a manner which will result in more effective training in financial, organizational and administrative procedures.

3. Relationship to Yemen Arab Republic Government Strategy

To achieve the educational goals set forth in the Five-Year Plan (1975-76-1980-81) the Yemen Arab Republic Government proposes the following:

- a. Coordinate the resources of the Ministry of Education, the University, the training institutions and the departments under the Ministry and implement procedures to improve the capabilities of each of the above.

- b. Develop effective plans and implement projects on a timely basis designed to further national educational goals.
- c. Coordinate and monitor the implementation of projects financed by international organizations.
- d. Improve the financial, technical and administrative coordination with the various ministries and governmental organizations, especially in the implementation of projects related to training and technical education.
- e. Facilitate the implementation of education projects by providing appropriate financial and administrative support.
- f. Strengthen cooperation with international organizations in all fields within the framework of applicable laws and regulations.

The government emphasizes the development of a sound education infrastructure through the strengthening of its own institutions and administrative arrangements. Central to the development plans is the coordination of foreign donor assistance. In this regard, it is the policy of the government to cooperate with donor agencies and to facilitate the implementation of projects consistent with national goals.

B. Sub-Project Goal

The goal of this project is to improve the economic and social conditions of the people of Yemen through accelerating the development of the basic education sector by improving its quality, making it more efficient and increasing its availability.

The relationship between education and socio/economic levels is well established and understood. Those relationships are particularly apparent in nations where overall levels of development are low. Yemen is such a nation. The ultimate goal will be achieved when general quality of life indicators rise. Indicators of progress in basic education include higher participation rates, lower dropout rates, higher female participation rates, lower yearly cost per students, higher pass rates into preparatory schools, and lower illiteracy rates.

C. Sub-Project Purpose

The purpose of this sub-project is to support the development of basic education by assisting to create within the Faculty of Education a new Department of Primary Education (DPE) to support and provide leadership for all aspects of primary education (grades 1-6) in Yemen and to improve science education in schools in Yemen by providing higher

quality teachers through a new program of science education at Sanaa University and through inservice training of existing teachers. Science teaching in the Primary Teacher Training Institutes will also be improved through the same preservice and inservice programs.

Achieving the project purpose will make a major contribution to the improvement and expansion of the basic education effort in Yemen as noted in II above.

D. End of Sub-Project Status

At the end of this sub-project, a new Department of Primary Education (DPE) will be created, staffed and functioning in the Faculty of Education at Sanaa University. The DPE will be training instructors for the Primary Teacher Training Institutes, primary school administrators, professionals in curriculum development, supervision, etc., and will be providing leadership in the development of primary education. Also at the end of this project, a new program of science education, staffed by qualified people, will be providing leadership, developing science education programs for grades 1-12 and training teachers appropriate to Yemen's science education needs both at the preservice and inservice level. Specifically, the Science Education Department will be staffed with qualified Yemeni professors; science content courses designed specifically for science teachers will be in use in physical and life sciences; labs equipped for these courses will be in full use; science education methods courses will be offered in the Faculty of Science; science teachers, adequate to the needs of Yemen, will be receiving B.S. degrees, and existing science teachers will be receiving inservice training.

End of Sub-Project Status 1 - The New Department of Primary Education Functioning with an Undergraduate Program in General Primary Education and Three Graduate Programs in Specialized Primary Education Areas

The exact nature of the new DPE and its relation to other elements of the Faculty of Education have not as yet been made clear as sufficient planning has not taken place. The Dean of the Faculty of Education has requested assistance in this planning task. As this is the first task that must be completed, the project intends to provide technical assistance on a long term basis in this area from the outset. Technical assistance in other areas will be phased in at a later time, most likely at the end of year one. As the planning task is ongoing, the capability and capacity for continued planning must also be institutionalized into the Faculty of Education. It is estimated that the planning task will require initially up to 24 person-months of technical assistance and collaboration during the first year of the project.

Technical assistance will be provided in curriculum development. It is estimated at this time that four separate but related curricular programs must be developed within the DPE.

The first of these programs will be a general program in primary education at the undergraduate level. This program will train undergraduates in general primary education. For the immediate future, and conceivably for several years to come, it is anticipated that all graduates from this program will continue their training in more specialized graduate level programs at Sanaa University. At least three graduate level curricula will be developed to build upon this primary level teacher training base.

One curriculum will be developed in primary teacher training and will insure a continuing supply of teacher trainers for the PTTIs and for such other teacher training centers as may emerge within Yemen.

A second curriculum will be developed for the preparation of educational leaders in administration and supervision, both within the public schools and within the MOE.

A third curriculum will train specialists within the field of curriculum and instructional materials. Areas covered will include science, math, languages and history.

EOSPS 2 - Sciences Content Courses Offered by the Faculty of Science and Science Education Methods Courses Offered by the Faculty of Education Designed to Prepare Graduates to Teach Preparatory and Secondary Level Science Courses Will Be Offered by the Faculties of Science and Education and Be in Use to Train Science Teachers.

To train science teachers for the schools of Yemen, a curriculum must be designed and tested that is adequate to prepare future teachers in science content. The basis for those science content courses will be the science curriculum presently taught in preparatory and secondary schools. A first task will be to analyze that curriculum to ascertain what science content a teacher must know. Courses can then be designed around this content. Laboratory exercises will also be designed appropriate for the courses and the teaching situations most likely to be encountered in the schools of Yemen.

Project assistance for the curricular course design task will be in the form of technical assistance. Training, both in Yemen and the United States, and a resource bank of science curricula and materials from the United States and Middle East countries will be needed. Those will serve as raw materials and a source of ideas for the new courses.

Particular attention will be given to the effective use of modern methodologies and technologies of education at all levels of the science program. The use of appropriate methods and materials will lead to a more effective curriculum implementation and a qualitative improvement of education by focusing more responsibility for learning on the learner.

The design task in science education is particularly challenging because of the relative ease with which an innovative program will be accepted for the Taiz branch campus. Such a design task will be

the first activity of the technical assistance personnel and short term consultants in science education.

EOSPS-3 - The Department of Primary Education and the Science Education Program Are Staffed with Adequately Trained Yemeni Staff

The sub-project will provide long term participant training and on-the-job counterpart training to develop the needed Yemeni staff for the DPE and the science education program. The staff must ultimately be trained to the level needed to carry out adequately their professional duties in the DPE and to command the respect, prestige and rewards necessary to retain them in the positions for which they have been trained. At the same time, a strategy must be developed to provide the training in such a way as to provide staff for a reasonable (early) start-up date for the DPE and the science education program itself. It may require starting with people who already have M.A.s. It may further require initially sending only half the DPE trainees and allowing them to remain away only long enough to finish their course work for the Ph.D. They would select appropriate dissertation topics developed in reference to Yemeni education and complete the actual dissertation in Yemen, returning to the United States only to defend their dissertation.

Augmenting this post-M.A. degree graduate study abroad will be a minimum of one full year of counterpart training in-country. It will be carried out both at Sanaa University with technical assistance personnel and within the PTTI Sub-project with a regularly assigned professional staff.

The question of long term training must be further examined during the first six months of the project when a detailed training plan will be prepared in concert with the YARG and USAID/Sana.

EOSPS-4 - A Curriculum and Instructional Materials Laboratory in Primary Education Is Established and Supporting the DPE Instructional, Evaluation, Research and Development Program

A facility is needed to support the DPE that can serve as a library and resource center, a place where students can come to design and make low-cost instructional materials, an A-V resource to support instruction in the DPE and the Faculty of Education, and a support base for necessary R&D work in primary education to develop curricula, textbooks and other instructional materials appropriate to Yemen.

EOSPS-5 - Science Labs Designed Specifically for Teacher Education Science Courses and the Teaching Content in Yemen Are Equipped and Supporting Both Science Content and Science Education Courses

The present science labs in use at Sanaa University are designed for use with courses for science majors and are generally inappropriately equipped and organized for future teachers. The lab exercises use techniques and equipment far more sophisticated than possible in preparatory and secondary schools in Yemen. Lab layout, equipment and exercises will be developed to fit the new science content and methods courses.

EOSPS-6 - The Faculty of Education Staff Is Providing
Inservice Training as Required in Primary Education
and Science Education Methods

Inservice training must be made available to those teachers, administrators and supervisors who were already or will pass through the system before it is improved. Even after the DPE and science education programs are upgraded, some periodic upgrading will be required. Illustrative areas of probable need are science education methods for existing university laboratory demonstrators, Ministry of Education Inservice Department, PTI staff, secondary and preparatory science teachers, primary school inspectors and administrators. Inservice programs will initially be developed and implemented with the assistance of EMU project personnel.

E. Sub-Project Outputs

1. Long and short range plans for the Faculty of Education, Department of Primary Education and the science education program.
2. Trained staff for the DPE and science education program.
3. Curriculum and courses to prepare the following:
 - Physical science teachers (BA)
 - Life science teachers (BA)
 - General primary education (BA)
 - Primary teacher training (MA)
 - Primary education administrators (MA)
 - Curriculum and instructional materials (MA)
4. Science education lab equipment and program.
5. Primary education curriculum and instructional materials lab.
6. Tested inservice training programs in science education and primary education methods.

F. Inputs

1. USAID Inputs
 - a. Technical assistance

Long Term: AID will provide up to 30 person years of full time professional personnel over a six year period as required to implement the subproject. They will be responsible for developing new science content courses, developing science methods courses for teachers, both in the physical and life sciences, and providing support to the Faculty of Science administrators. This support will be in the form of both short range and long range planning for the Faculty of Science. (\$2,449,440)

Within the Faculty of Education, they will be responsible for developing courses and curricula for a new Department of Primary Education, developing a primary education materials resource center, and offering planning assistance for both short and long range goals.

Short Term: Short term consultants will be provided for a minimum of 24 person months as required. (\$232,620) It is anticipated that special assistance may be required to set up science laboratories and to offer short duration workshops in the utilization of equipment for these laboratories.

b. Training

Forty-two years of participant training - with an estimated cost of \$672,000.

c. Two science education laboratories: Life Science Laboratory (\$190,773), Physical Science Laboratory (\$120,200)

d. One primary education curriculum and instructional materials laboratory with the capability of assisting in a research and development effort for the Department of Primary Education. (\$294,132)

e. Transportation costs = \$693,000

f. One project vehicle shall be purchased and maintained. (\$25,000)

g. T.A. staff housing = \$1,012,560

2. Host Country Inputs

a. Professional staff - 14 participants = \$838,400

b. Student housing and other related logistical support = \$603,800

c. Other costs and contingencies = \$1,062,100

IV. Subproject Implementation

A. Implementation Strategy

The collaborative assistance approach is to be used to implement this subproject. It allows maximum participation of the U.S. contractor and host country institutions in the design implementation and evaluation of projects. It also allows flexibility in the design of programs and permits project designs to respond to changing requirements. Assisting in the accomplishment of the long term requirements of establishing

a DPE and improving the science education program will require creativity and innovation in philosophy, program approach and program design.

In accordance with the Collaborative Assistance Mode, this sub-project paper does not provide the same degree of detail as a PP for a project using another implementation mode. What is contained is a general life of project implementation plan and, in the Annex, a detailed annual work plan for the first year. At the annual evaluation/ review of all sub-projects, a detailed work plan for the coming year will be approved.

Under the Core Sub-project, a "Council on Basic Education Development" is to be created. This Council will serve for the YARG as the coordinating body of the Basic Education Development Project of which this is a sub-project. Its members will be drawn from the MOE, Sanaa University and the contract team. See the Core Sub-project Paper for further details concerning this Council.

The Science Consultant/Administrator will be designated as the team leader of the EMU group, working at Sanaa University. He/she will serve as a member of the Project Coordinating Council.

B. Implementation Strategy by Output

1. Short and Long Range Plans for the Faculty of Education, Department of Primary Education and Science Education Program

The major activity during the first year will be assisting the Sanaa University staff in formulating short and long term plans and initial course designs. The task will begin in May, 1980 when three consultants, funded by the Core Sub-project, will spend six weeks in Taiz and Sanaa assisting in the formulation of initial plans for the new branch campus in Taiz. Some assistance will also be given to the Faculty of Science, Sanaa campus, to revise and streamline its program.

In September, three consultants will arrive to carry on the planning task and to assist in building the capacity to plan. Draft plans for the DPE will be available for review in April and May, 1981 and will be finalized by July, 1981. These plans will provide detailed guidance for the preparation of the implementation plan for the remainder of the project. The plan will be reviewed and approved at the annual collaborative project review by the YARG, USAID/Y, and AID/W representatives.

2. Trained Staff for the DPE and the Science Education Program

- 5 in science education methods
- 6 in primary education methods
- 3 in science content for teachers

Participants will be identified by the fall of 1980. Half of each group will enter full time English classes immediately. It is anticipated that the science students will be able to go for training in January, 1981. The other half will study English part-time and work with the contract team on a counterpart/on-the-job training basis.

After two years' training, the first group of science participants will return to work on their dissertations; the contract team will work with them on a counterpart basis. The group that has been in Sanaa will begin their course work in the United States. At the end of another two years, January, 1984, they will again switch places, the first group to return to the United States to complete their degree and the second to return to Sanaa to work and do their research.

The same pattern will be followed by the education participants, but the cycle will not begin until June or July, 1981.

3. Curriculum and Courses for the following:

a. Science education teacher training (B.S.)

- (1) Science content courses
- (2) Science methods courses

b. Primary education

- (1) General primary education (B.A.)
- (2) Primary teacher training (M.A.)
- (3) Primary education administration and supervision (M.A.)
- (4) Curriculum and instructional materials (M.A.)

Two consultants will arrive in Yemen in early June to begin work on the general program structure for the science education program in Taiz. Sufficiently detailed courses for the first year will be designed to allow a fall, 1980 start-up. The two-person team will work with Sanaa University staff throughout the summer.

Beginning in September, 1980, the permanent team will arrive and begin work on Output 1. As the general outline of the required programs becomes clearer, work on the specific program for the courses will begin. To supplement the permanent team, short term consultants in specific areas will participate in the design of specific programs and courses.

Throughout, the team will be working with the Yemeni and expatriate contract staff.

Each sub-output above will require extensive review within Sanaa University before final approval.

4. Science Education Laboratories

Detailed planning for the science education laboratories must be done in conjunction with the science content and science methods

course design. A survey of existing laboratory facilities in preparatory and secondary schools will be required. The physical aspects of the laboratories and their equipment will then be designed to optimize laboratory experiences in science education consistent with what is possible in Yemen at this time and likely to be attainable in the future.

The equipment and materials list for this facility will be drawn up during the 1980-81 school year. Those will be approved during the annual YARG/EMU/USAID annual review evaluation and planning exercise in May-June, 1981.

Estimated costs for those facilities have been based on an "average" cost for equipment and supplies for middle and high school laboratories for general science, plus packing and shipping.

5. Primary Education Curriculum and Instructional Materials Laboratory

Specific planning for the laboratory cannot begin until the new DPE general program has been approved and specific course design well underway. The nature of the laboratory will very much depend upon the areas of emphasis in the new program.

Cost estimates are based on those for a typical curriculum and materials laboratory in the United States with the addition of a small professional library in a range of primary education areas.

The plan and equipment/materials list will be reviewed at the 1981 annual review/evaluation.

6. Tested Inservice Training Models in Science and Primary Education

Development of training models will be preceded by a needs assessment conducted jointly by Sanaa University and the MOE. Models will be jointly developed by the contractor team and Sanaa University staff during the second and third years of the sub-project. After testing, the University staff will train the MOE inservice training department which is responsible for training school personnel in grades 1-12. Approximately four inservice programs will be developed for science teachers at the preparatory and second level and six programs for primary school teachers.

In all areas throughout the program, the participant trainees who are in Yemen will work on a daily basis with the contract team consultants. That activity will begin as a counterpart/on-the-job training relationship; then, as the project and their training progresses, the relationship will evolve into a full collegial one.

V. Issues

A. The Availability of Suitable Trainees

This sub-project is designed to provide graduate level training to a total of fourteen Yemeni program participants. They will receive training in specific areas of specialization and for specifically defined assignments within Sanaa University. Five will be trained in methods of teaching science; three will be trained in science content methods appropriate for secondary level teaching, and the remaining six will be trained in methods related to primary education.

It is essential to the long range success of the project that these trainees be capable learners, and that they fully understand and endorse the objectives of the sub-project. They will not be typical scholarship recipients.

Typical scholarship programs which are offered to Yemeni students for study abroad allow recipients more latitude than will be true of this training program. First, one half of these trainees will need to work with the project for two years prior to leaving for advanced study in the United States. Second, the remaining one half will need to be incorporated into the project immediately following their return to Yemen. In all cases, they will return to Yemen and to their project assignments, lacking the dissertation for the Ph.D. This final degree requirement will have to be met in Yemen.

For all of these reasons, great care must be taken in the identification and selection of the trainees.

B. Cooperation Between the Ministry of Education and Sanaa University

This sub-project will call for a high degree of cooperation between the Ministry of Education and Sanaa University. Examples of that are to be found in (1) the transfer of responsibility for preparing primary teacher trainers from the PTTI Sub-project to the Department of Primary Education, (2) provisions for providing inservice training for Yemeni teachers, and (3) the utilization of administrators for primary education in the country.

To date, Sanaa University has trained only secondary school teachers. The Ministry of Education has been responsible for inservice education, for the assignment of teachers throughout the education sector, and for providing school inspectors. It is assumed that the last two of those responsibilities (MOE placement and supervision of primary teachers) will continue. It will be necessary that the Ministry of Education delineate its priorities and needs to Sanaa University and that the University reflect those needs and priorities in its program planning.

C. Sanaa University Recurring Budget Allocations

To sustain the programs and the personnel developed under this program, the University will need to commit a greater share of its overall budget to teacher training than it does at present. Otherwise, the programs are not likely to outlast donor expenditures. Long range planning for such post sub-project costs will need to be made.

D. Incentives Necessary to Retain Personnel

Although the trainees in this sub-project will be prepared to assume well defined roles in the Department of Primary Education and in the Faculty of Science, they will require incentives sufficient to hold them in those positions. The private sector of Yemen will offer attractive possibilities to highly trained persons.

Both economic incentives and attractive working conditions will be required if participants are to be held in the positions for which they are trained.

VI. Program Monitoring and Evaluation

The Collaborative Assistance Mode of project design and implementation will be used in the BED program. This approach provides for closer relationships between host country leadership, AID and the contractor in the planning and implementation of technical assistance projects. While that approach places greater responsibility upon the contractor and permits flexibility in project day-to-day implementation, it does not diminish the monitoring responsibility of AID. Its basic objective is to maximize and make optimum use of the particular skills and resources of the host country, contractor and AID in achieving project goals.

Central to that effort is the requirement for continuous assessment and evaluation of the program. Under this program, assessment and evaluation of project goals, the strategies and accomplishments will be ongoing throughout the seven years of the program. The overall scheme is based on three separate levels of evaluation which will be employed within two-year increments during the life of the program. These approaches are as follows:

A. Quarterly review and assessment of project (BED) progress by the Eastern Michigan University Team, the Ministry of Education, the Yemen Arab Republic Government, and the United States Agency for International Development. Those evaluation activities will be conducted every quarter, except for the fourth and the eighth quarters when annual and biennial reviews will take place. The purpose of those review and assessment sessions will be to identify both strengths and weaknesses in operational approaches and to examine the need for changes in strategies in those areas observed to be weak or deficient.

B. An annual review and assessment will be made of the project accomplishments with reference to the overall project goals. Again, the parties involved in this review will include the project team, designated representatives of the Ministry of Education, and the United States Agency for International Development personnel.

Project implementation strategies, work plans and budgets will be carefully reviewed, and modifications will be made where the need

for such becomes evident. The need for new inputs in the form of personnel, materials, and resources will also be reviewed at that time.

C. At the end of the first eighteen months of the program's operation, the project team, the Ministry of Education, and the United States Agency for International Development will again review and evaluate the project implementation strategies, work plans and budgets.

D. At the conclusion of the third year of the program and every second year thereafter an in-depth evaluation will be carried out. That evaluation will be undertaken by external evaluators from the United States.

The continuous assessment and evaluation activities will be coordinated by the Chief-of-Party through the EMU management element. Each of the sub-projects will be evaluated with respect to stated specific purposes, outputs and inputs as they relate to the objectives of that activity and as modified during the annual review. Additionally, the independent evaluation of the total program will place particular emphasis on the progress made toward goal and purpose achievement and the effectiveness of overall program management.

VII. Sub-Project Analyses

A. Economic Analysis

A conventional economic analysis measuring the rate of return or project benefit cost ratio is not always an appropriate method for demonstrating the economic viability of a project. It is so in this case because the primary education outputs in the Faculty of Education and the science education outputs cannot easily be described in conventional economic terms. The measurable benefits that will ultimately accrue to the country from more and better primary and science education programs are far downstream and are greatly subject to the influence of other variables. Further, it must be recognized that both primary and science education are also social investments which lead to non-economic benefits that cannot be quantified at all.

With a reported per capita Gross National Product of about \$390, the poverty of Yemen appears to be a poverty of trained human resources. The country does not lack the capital needed for economic and social development; it lacks the technical expertise. While it is difficult to calculate in exact terms the contribution of education to economic development, its value to employment, income distribution and national cohesion is generally accepted. (Further, it is evident that the educational systems of the developed countries are among the most crucial supports for the continuing existence of those nations as developed societies.) This sub-project proposes that improving and expanding Yemen's primary education system is one of the most effective and least-cost avenues to assisting in the development of its human resources and establishing a base for more equitable social and economic opportunities.

When viewed within the larger context of the total basic education development plan for Yemen as posited by USAID, the science education aspect of the sub-project may indeed be seen as a cost effective means of reducing Yemen's "poverty" of human resources. This sub-project has direct and indirect ties with the overall development of the Faculty of Education and Faculty of Science at Sanaa University, with the sub-project involved with the improvement of teacher training institutes through the training of primary teacher trainers, and with the sub-project intended to establish a center for the preparation and utilization of teaching materials and instructional aids. Also, through its emphasis on working with science inspectors from the Ministry of Education, ties will be established with the sub-project which will deal with management aspects of institutional development.

1. Return of Investment in Primary Education

Rates of return of investment in education have been studied in the developing world for some years. The studies consistently show that there is a higher return on investment in primary education than for other levels of education. The possible explanations for this fairly well-established relationship are many, including the vast difference in cost between primary and higher levels of education.

The goal of this sub-project is to increase the quality and availability of primary education. By providing greater access to education and insuring a more equitable distribution of education opportunities throughout the country, the "smaller" investment required per student year in primary education will result in a higher rate of return.

2. Impact of Primary Education

UNESCO has maintained for years that four to five years of primary education are required to insure permanent literacy and numeracy skills. Studies conducted by the World Bank now seem to indicate that four years of schooling are also a threshold level of education associated with increased agricultural productivity. Those studies are based on data from 20 different developing countries. Subsequent studies suggest that the link lies in increased mathematical and logical skills (cause and effect) acquired during the first four years of schooling. Those findings, although tenuous, suggest that, if modern teaching techniques can be introduced and implemented in Yemen and elsewhere in the developing world, increased benefits to primary education would accrue.

Every study of non-formal education has shown that people with some formal education are more likely to participate in non-formal education activities than those who have had no non-formal education. This indicates that non-formal activities need to be specially designed to foster participation by non-schooled people. It also indicates the complementary and supplementary relationship between formal and non-formal education. It can be expected that expansion and improvement

of primary education will have a positive impact on participation in and benefits from non-formal education of all types, including agriculture extension, health programs and community/rural development efforts.

3. Least Cost vs. Time vs. Effectiveness

It is felt that the project strategy of combining technical assistance, on-the-job counterpart training and phased long term U.S. training is the least cost alternative consistent with the desire for an early start-up time and the limited Yemeni ability to staff the program. The new programs could be started sooner by bringing in larger numbers of U.S. professionals to design programs and teach. The cost, however, would be prohibitive, and in the long run little institutionization through Yemeni staffing would result. The project costs could be reduced by including only long term training for Yemeni staff and let them set up the desired programs on their return. Such an arrangement, however, would delay the establishment of the programs by several years. The University has in the past relied upon contract teachers from Middle Eastern countries. That approach has not resulted in adequate programs to meet Yemen's needs.

4. Recurring Cost

A major unresolved question is whether the YARG can meet the increased operating costs for an expanded science education program and a new department of primary education. At the present time virtually all the operating costs of Sanaa University are met by the Kuwait Fund. It is expected that this will continue until the YARG develops resources through which it can meet the costs itself.

B. Social Soundness*

The Science and Primary Education Sub-project is designed with the ultimate aim of improving primary and science education in the Yemen Arab Republic. Although the immediate beneficiaries of this project will be the Sanaa University staff, new teachers and new teacher trainers, the ultimate beneficiaries will be the Yemeni primary teachers and the primary school students.

To obtain information regarding the direct and indirect beneficiaries, the Eastern Michigan University (EMU) Team designed a questionnaire which sought to elicit beneficiary attitudes toward the present educational system and how that system might be improved. Interviews and discussions with teachers and teacher trainers were also used in order to obtain background information regarding the beneficiary groups. The team visited five Teacher Training Institutes, nine primary and secondary schools, two Local development Associations (LDAs), and

*Note: In the Annexes are two reports that serve as a partial base for this section. They are Annex K, "Girls and Women in Education," and Annex J, "Social Soundness: Report of a Brief Field Study."

numerous government education personnel in the Governorates of Sanaa, Hodeidah and Taiz. The following information is based on the results of the questionnaires and interviews as well as from various published sources:

1. Immediate Beneficiaries

The immediate beneficiaries will be the staff of the Faculties of Education and Science, Sanaa University, who will be selected to be project participants. There are no data regarding socio-economic backgrounds of those people. The fact that they have taken degrees in education could indicate that they are dedicated to the education of their fellow Yemenis; the most that we can know for sure about them is that they will have at least one year of teaching experience before starting in the program. Of the 1977-78 enrollees in the Faculty of education, 87.2 percent were men and 12.8 percent were women. The ages of recent graduates have ranged from 24 to 29 years. Most would not have the opportunity for postgraduate training but for this sub-project.

The Faculty of Education is just completing its sixth year which accounts for the lack of any visible number of Yemeni with Ph.D.s qualified to teach at the University. Those who started in 1974 are just beginning to return with M.A. degrees. Ph.D.s from the first classes will not be returning to Yemen for another two to three years.

2. Intermediate Beneficiaries

The intermediate beneficiaries of this sub-project will be the students who receive a more relevant, higher quality education at Sanaa University.

3. Ultimate Beneficiaries

The ultimate beneficiaries of this sub-project are the children of Yemen who will have access to more and better primary education because the DPE will be preparing increasing numbers of better and more appropriately trained Yemenis to staff the PTTIs (and hence produce more and better primary school teachers), to supervise teachers and administer schools (and hence result in more effective teachers and schools), to design curriculum and instructional materials more suited to Yemeni needs, and to provide leadership for the future development of the Yemeni primary education system. The sub-project achieves a multiplier-spreader effect by making its input to the institution that will be at the apex of the system.

4. Problems Facing Primary School Teachers

Primary teachers presently in service are underqualified as shown by the fact that 39 percent are primary school dropouts themselves. Primary teacher salaries are low; depending on their qualifications, those teachers earn from 120 TR to 600 YR a month (U.S. \$26 to \$133).

Local Development Associations normally supplement those salaries with free housing and a 150 to 200 YR (U.S. \$33 to \$44) monthly cash allowance but such remunerations are still minimal in comparison to other public sectors. Additionally, the social status of the group is low, in part, because they are known to be minimally qualified and poorly paid. A related development is the decline in enrollment in the PTTIs in recent years caused partly by poor pay but also because other opportunities are now available to young people seeking higher education.

In the process of designing the Sanaa University education programs, the project team will undertake more research to determine the problems facing primary school teachers and ways in which preservice and inservice programs can address them.

An assumption of the sub-project is that by increasing the quality and quantity of Yemeni science teachers and teacher trainers, the present primary school teacher situation will be improved. More students will then be attracted to the teaching profession. Since the project will place strong emphasis on recruiting women trainers and since primary teaching is one of the few acceptable fields for women, the sub-project should have a positive effect on the employment of women in Yemen.

5. Problems Facing Primary Schools

It is reported that in 1976-77, there were 455 primary schools in Yemen that either closed or failed to open. The main reason for the failure of the schools to operate was the lack of qualified primary teachers or teachers of any sort. The estimated number of students who could have been served by those closed schools is 415,000.

In 1977-78, the number of female students attending primary schools was 6.0 percent of the estimated primary school age (6-11 years) female population. In addition, the percentage of female primary school students who dropped out after grade 1 was 36.1 percent (in contrast to 28.1 percent for boys). The low percentage of female school attendance and the relatively high rate of female school dropouts seem to be related to the fact that there are very few female primary teachers who are Yemeni and qualified. Interviews with Yemeni families (especially in rural areas) point out the need for more interaction between parents of prospective female students and Yemeni female teachers, as well as interaction between female students themselves and Yemeni female teachers. Without support and encouragement from qualified Yemeni female teachers, the percentage of females who would go to school cannot expand, and the female student dropout rate will remain high. With the greater number of qualified Yemeni female teachers resulting from the preservice and inservice training program, the above problem should become less severe.

6. Recruitment and Retention in Education

This problem has been discussed at length, and the MOE understands the importance of workable solutions. The PTTI Sub-project called for certain covenants and CP to improve recruitment and retention. The major one was an agreement to raise salaries. That was done, and

another major increase is due this coming year. Other recent actions taken to make teaching more attractive have been to increase student stipends while attending PTIs or the University and to exempt teachers from the recently enacted universal military service law.

The opening of a new program in education in Taiz will also result in more teachers trained and a larger number of women participating.

7. Access to Project Training Program

The usual practice, which will be followed in this sub-project, is for the MOE or University to make public the fact that candidates are being sought for a program. Announcements are made on radio, TV, in the paper and posted at educational institutions. Applications are accepted and reviewed. The criteria for selection proposed for this sub-project are found in Annex I.

C. Administrative Feasibility

1. Implementation

This sub-project will be implemented directly with Sanaa University through the Faculty of Education and Faculty of Science. Communication will be maintained with the Ministry of Education through the Deputy Minister of Education for Technical Affairs.

The primary coordination and management instruments are the sub-project's Logical Framework, Implementation Schedule, and the Contractor's Annual Work Plans. The Contractor's Annual Work Plans will spell in detail the tasks which will lead to the objectives of the project. The Work Plan will be developed each sub-project year in collaboration with the Faculty of Education, Faculty of Science and USAID. A draft plan for the first year is contained in the Annexes.

2. Institutional Analysis

Two Faculties at Sanaa University will be involved in this activity, the Faculty of Education and the Faculty of Science. Both Deans have participated in the preparation of the sub-project.

The University will physically house the activity in the new Faculty of Education buildings. Eventually, the activities of this sub-project will be melded into the Faculty of Education at Sanaa University. This arrangement is not now possible as the Faculty has a Dean but no Yemeni staff. Three part-time UNDP-funded UNESCO professors are presently trying to supply all the teaching methods courses for over 900 students.

Assistance to the administrative units of the Faculties of Education and Science is recognized as an important input in this sub-project. Such assistance will have as its objective the building of adequate administrative mechanisms for the project.

USAID Monitoring Responsibilities

Collaborative assistance contracting and implementing procedures place less responsibility on the USAID for day-to-day monitoring of project activities. More emphasis is placed on annual evaluations and subsequent plan revisions with the contractor and the host-country. The spirit of the process is that of a three-way collaborative effort involving the USAID, the Contractor and the YARG.

D. Technical Analysis

Various technical issues were examined in the development of this sub-project. The principal ones were as follows:

- The English language ability of the participants.
- The amount of training required for Sanaa University staff.
- The availability of participants.
- The adequacy of science curriculum in grades 1-12.
- The timing of phasing of PTTI Sub-project into the Primary and Science Education Sub-project.

i. English Language Ability

A crucial problem addressed in the design of the sub-project is the level of English required for graduate study in the United States. As it is desirable to start both the DPE and the science education program as soon as possible, the length of time required to bring the participants' English up to an acceptable level is crucial. Experience in the PTTI Sub-project has shown that science education graduates have much better English than other Faculty of Education graduates, the reason being that they have studied all science subjects in English. It is estimated that they will require one summer and one term of English instruction to reach an acceptable level to enter graduate school in the U.S. Participants from the Faculty of Education in other areas will probably require another half year of English.

The above English study requirements will not retard the sub-project. The participants for the DPE should not depart for study until the development plan for the DPE is at least approved in draft by Sanaa University. It is anticipated that this task will require up to one year. Participants sent for the science program should not leave until the plans for the Taiz campus are complete through the second year. As work on that task will begin during the summer of 1980, participants should be able to depart in January, 1981.

2. Level of Training Required

Two factors must be considered in determining the level of training required. The first is that Sanaa University requires its staff to have Ph.D.s before they are granted full faculty status. This requirement is to insure retention of staff after training and acceptance sufficient to influence program direction.

Training level requirements defined by knowledge and skill required to take leadership roles in primary and science education in Yemen are more difficult to define. However, it is the best judgment of the project designers, including Sanaa University, that, given the starting level of participants, the job requirements are such that a Ph.D. is indicated.

To allow quicker start-up time and more relevant training, counterpart/on-the job training with the TA team in Yemen, course work in the United States, data gathering and writing in Yemen and dissertation defense in the United States will be phased and sandwiched in, as per description in Section III.

3. Availability of Participants

Preference will be given to M.A. holders. However, it is not expected that all 14 required positions will be filled with M.A. holders. The remainder will be taken from B.S. holders presently teaching, from junior Sanaa University staff or, as a last resort, from recent graduates. It is unlikely that the last group will have to be tapped.

4. Adequacy of Science Curriculum

For the last several years, a team of university experts has been working with Yemen officials to improve and restructure the curricula in general and science in particular. The results of those efforts have been reviewed and found to be satisfactory. Additional teaching materials, based upon the present curriculum in line with the needs of science teachers, will be studied/designed by the project team and consideration given to supplying such aids, laboratory exercises and library materials necessary for a more modern, relevant program.

5. Timing of PTI Project Phase Out

It is hoped that the DPE will be established and operating at least by the time the last cycle of the PTI program begins. At that time, Sanaa University will completely assume responsibility for the program, with some continued assistance from the project contractors. The long range plans to be formulated during the first year of the project will provide more definitive projections.

6. Working Relationships with Other Donors

Numerous educational activities have been and are currently being sponsored by foreign donors and international agencies. Major contributions provided by these donors pertaining to the Primary and Science Education Sub-Project are related to the following:

- a. The construction and equipping of one preparatory school and three secondary schools by the IDA/World Bank.
- b. The UNESCO technical projects which included the expansion and diversification of secondary education; the establishment of the Faculty of Education within Sanaa University; and the sponsorship of eighteen fellowships, some of which were related to teaching science. Some of these programs were sharply curtailed and/or not implemented due to the shortfall of the UNDP funds.
- c. The contribution made by the Government of Kuwait in financing most of the capital and operational expenditures of the present campus of Sanaa University. In addition, the Government of Kuwait has financed the construction of expanded university facilities, including science laboratories, at a new campus of Sanaa University.

Activities related to the Primary and Science Education Sub-Project are designed to supplement and interface with the previous and current efforts of these other donors. This will be achieved through the collaborative approach among the EMU Sub-Project Team Leader, the Dean of the Faculty of Science, the Dean of the Faculty of Education, and the Council for Basic Education Development.

Annex A
Financial Plan

BUDGET SUMMARY BY COST COMPONENT

1. Technical Assistance	\$2,682,060
2. Participant Training	672,000
3. Travel and Transportatio .	693,000
4. Allowances	402,000
5. Commodities and Vehicle	767,505
6. Local Costs including Housing	1,084,560
7. Inflation Factor - Local Costs	959,018
8. Inflation Factor - U.S. Costs	1,445,771
9. Contingency	435,296

Total \$9,141,210

BUDGET SUMMARY BY COST COMPONENT

1. Technical Assistance	\$2,682,060
2. Participant Training	\$ 672,000
3. Travel/Transportation	\$ 693,000
4. Allowances	\$ 402,000
5. Commodities/Vehicles	\$ 767,505
6. Local Costs/Housing	\$1,084,560
7. Inflation factor-Local Costs	\$ 959,018
8. Inflation factor-U.S. Costs	\$1,445,771
9. Contingency	<u>\$ 435,296</u>
Total	\$9,141,210

YEMEN BASIC EDUCATION DEVELOPMENT PROJECT - PRIMARY AND SCIENCE EDUCATION SUB-PROJECT LOP COSTS ANALYSIS

Cost Items	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7*	Total
1. Technical Assistance	326,592	489,888	408,240	408,240	408,240	408,240		2,449,440
2. Short-Term Advisers	38,770	38,770	38,770	38,770	38,770	38,770		232,620
3. Travel and Transportation	92,500	138,500	115,500	115,500	115,500	115,500		693,000
4. Allowances	53,800	80,200	67,000	67,000	67,000	67,000		402,000
5. Equipment and Other Direct Costs	89,600	469,373	49,633	49,633	49,633	49,633		757,505
6. Vehicle	10,000							10,000
7. Participant Training	67,000	112,000	112,000	112,000	112,000	112,000	45,000	672,000
Sub-Total Current Prices	678,262	1,328,731	791,143	791,143	791,143	791,143	45,000	5,216,565
Sub-Total Plus 10% Inflation	678,262	1,461,604	957,283	1,053,011	1,158,312	1,274,144	79,720	6,662,336
<hr/>								
1. Maintenance	135,008	202,512	168,760	168,760	168,760	168,760		1,012,560
2. In-Country Travel	7,500	7,500	7,500	7,500	7,500	7,500		45,000
3. Vehicle Maintenance	2,500	2,500	2,500	2,500	2,500	2,500		15,000
4. Other Costs	2,000	2,000	2,000	2,000	2,000	2,000		12,000
Sub-Total Current Prices	147,008	214,512	180,760	180,760	180,760	180,760		1,084,560
Sub-Total Plus 25% Inflation	147,008	268,140	282,438	353,047	441,309	551,636		2,043,578
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Grand Total	825,270	1,729,744	1,239,721	1,406,058	1,599,621	1,825,780	79,720	8,705,914
Grand Total Plus 5% Contingency	866,231	1,816,231	1,301,707	1,476,361	1,679,602	1,917,069	83,706	9,141,210

UNITED STATES COSTS

LOCAL COSTS

*Participant Training Only.

YEMEN BASIC EDUCATION DEVELOPMENT PROJECT
 PRIMARY AND SCIENCE EDUCATION SUB-PROJECT
 LOP COST ANALYSIS

YEAR ONE

I. U. S. Costs \$326,592

1. U. S. Personnel - Field Based

Salary Analysis: base salary (academic) \$25,000 x
 1.44 (annualization) x 1.35 (.25 post differential,
 .05 C.O.L.A., .05 Sunday) = \$48,600
 Fringe Benefits (.25 x salaries) =

\$12,150

Indirect Costs (.43 x
 salaries) = \$20,898

Estimated Cost Per Person
 Per Year \$81,648

- a. Science Consultant/Administrator (Team Leader)
- b. Science Educator - Life Sciences
- c. Science Educator - Physical Sciences
- d. Education Planning Specialist

2. Short-Term Advisers - 4 months per year \$ 38,770

Total Costs: Salaries; including fringe benefits,
 idc.

Travel: 6 round-trips \$1,600 @

Per diem: 365 days x \$109

Visas, Passports, Exams, Etc.

Approximate cost per two month TDY, \$19,385

3. Travel and Transportation

- 3.a. U. S. Travel, Misc. \$ 500
- 3.b. International Travel \$ 38,400

4 Households:

Personnel and 3 dependents

Household costs: U.S.-Yemen 4 x 800 = \$3,200

R & R 4 x \$1,600 = 6,400

- 3.c. Transportation and storage of Household \$ 14,000
 Effects

- 1. Personal effects and household goods
 Employee with dependents (2500 pounds)

4.

2. Unaccompanied baggage (4) Employee 250, 1st dependent, 200 2nd dependent 150, 3rd dependent, 100 Total 700 pounds shipped air freight	\$ 10,000
3. Excess baggage allowance (4) Employee + 3 dependent \$150	\$ 2,400
4. One time consumables freight allowance per employee (2500 pounds) (4) Prorated over 2 years	\$ 7,200
5. Transportation charges of one privately- owned vehicle per employee (4)	\$ 10,000
6. Storage of household effects and vehicles Storage - transportation charges in U.S. 1 year, employee and dependents (4)	\$ 10,000
	<u>\$ 92,500</u>

4. Allowances

4.a. Education - Travel and Tuition 4 In-Country - \$3,900 each 4 Out-of-Country \$9,300 each	\$ 52,800
4.b. Per diem - Orientation/Misc.	\$ 1,000
	<u>\$ 53,800</u>

5. Equipment and Other Direct Costs

5.a. Educational Equipment and Materials	\$ 2,500
5.b. Household: x 4	\$ 85,600
Furniture: \$10,000	
Appliances: \$ 1,400	
Freight: <u>\$10,000</u>	
	\$21,400
5.c. Sub-Project vehicle	\$ 10,000
5.d. Other: Communication, Visas, Etc.	\$ 1,500
	<u>\$ 99,600</u>

6. Participant Training

6.a. U.S. Training - 4 participants, per student/per year \$15,000	\$ 60,000
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6.b. Inservice	\$ 7,000
	<u>\$ 67,000</u>

Total U.S. Costs	<u>\$678,262</u>
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YEMEN BASIC EDUCATION DEVELOPMENT PROJECT
 PRIMARY AND SCIENCE EDUCATION SUB-PROJECT
 LOP COST ANALYSIS

YEAR TWO

I. U. S. Costs \$489,888

1. U. S. Personnel - Field Based

Salary Analysis; base salary (academic) \$25,000 x
 1.44 (annualization) x 1.35 (.25 post differential,
 .05 C.O.L.A., .05 Sunday) = \$48,600
 Fringe Benefits (.25 x salaries) =

\$12,150

Indirect Costs (.43 x
 salaries) - \$20,898
 Estimated Cost Per Person
 Per Year \$81,648

- a. Science Consultant/Administrator (Team Leader)
- b. Science Educator - Life Sciences
- c. Science Educator - Physical Sciences
- d. Education Planning Specialist
- e. Primary Education Resources Specialist
- f. Primary Teacher Education Specialist

2. Short-Term Advisers - 4 months per year \$ 38,770

Total Costs: Salaries; including fringe
 benefits, idc.
 Travel: 6 round-trips \$1,600 @
 Per diem: 365 days x \$109
 Visas, Passports, Exams, Etc.

Approximate cost per two month TDY, \$19,385

3. Travel and Transportation

3.a. U.S. Travel, Misc. \$ 500
 3.b. International Travel \$ 57,600

6 Households:
 Personnel and 3 dependents
 Household costs: U.S.-Yemen 4 x 800 \$3,200
 R & R - 4 x \$1,600 = \$6,400

3.c. Transportation and storage of \$ 21,000
 Household Effects Baggage &
 Vehicles, per household (6)

1. Personal effects and household goods Employee with dependents (2500 pounds)	
2. Unaccompanied baggage (6) Employee 250, 1st dependent, 200 2nd dependent 150, 3rd dependent, 100 Total 700 pounds shipped air freight	\$ 15,000
3. Excess baggage allowance (6) Employee + 3 dependents \$150	\$ 3,600
4. One time consumables freight allowance per employee (2500 pounds) (6) Prorated over 2 years	\$ 10,800
5. Transportation charges of one privately- owned vehicle per employee (6)	\$ 15,000
6. Storage of household effects and vehicles Storage - transportation charges in U.S. 1 year, employee and dependents (6)	\$ 15,000
	<u>\$138,500</u>
4. <u>Allowances</u>	
4.a. Education - Travel and Tuition	\$ 79,200
6 In-Country - \$3,900	
6 Out-of-Country - \$9,300 each	
4.b. Per diem - Orientation/Misc.	\$ 1,000
	<u>\$ 80,200</u>
5. <u>Equipment and Other Direct Costs</u>	
5.a. Educational Equipment and Materials	\$ 2,500
(1) Primary Education Curriculum & Instructional Materials - Laboratory - See p. 16	\$157,200
(2) Life Science Education Laboratory, see p. 15	\$157,173
(3) Physical Science Education Laboratory, see pg. 15	\$108,200
5.b. Household: x 2	\$ 42,800
Furniture: \$10,000	
Appliances: \$ 1,400	
Freight: \$10,000	
	<u>\$21,400</u>
5.c. Other: Communication, Visas, Etc.	\$ 1,500

Total #5 \$469,373

6. Participant Training

a. U.S. Training \$105,000
7 Participants

per student/per year \$15,000

b. Inservice \$ 7,000

\$112,000

Total U.S. Costs \$1,328,731

Year Two Inflation Factor \$1,461,604

YEMEN BASIC EDUCATION DEVELOPMENT PROJECT
 PRIMARY AND SCIENCE EDUCATION SUB-PROJECT
 LOP COST ANALYSIS

YEAR THREE-SIX

I. U.S. Costs

1. U.S. Personnel - Field Based \$408,240

Salary Analysis: base salary (academic) \$25,000
 x 1.44 (annualization) x 1.35 (.25 post differential,
 .05 C.O.L.A., .05 Sunday) - \$48,600
 Fringe Benefits (.25 x salaries) -

\$12,150

Indirect Costs (.43 x
 salaries) = \$20,898

Estimated Cost Per Person
 Per Year \$81,648

- a. Education Planner/Team Leader
- b. Science Educator - Life Sciences
- c. Science Educator - Physical Sciences
- d. Primary Education Resources Specialist
- e. Primary Teacher Education Specialist

2. Short-Term Advisors - 4 months per year \$38,770

Total Costs: Salaries; including fringe
 benefits, idc.
 Travel: 6 round-trips \$1,600 @
 Per diem: 365 days x \$109
 Visas, Passports, Exams, Etc.

Approximate cost per two month TDY, \$19,385

3. Travel and Transportation

3.a. U.S. Travel, Misc. \$ 500
 3.b. International Travel \$48,000

5 Households:
 Personnel and 3 dependents
 Per Household costs: (U.S. - Yemen 4 x 800)
\$3,200
 R & R - 4 x \$1,600 = \$6,400

3.c. Transportation and storage of Household
 Effects - Baggage & Vehicles, per
 household (5)

1. Personal effects and household goods
 Employee with dependents (2500 pounds) \$17,500

2. Unaccompanied baggage (5) Employee 250, 1st dependent, 200 2nd dependent, 150, 3rd dependent, 100 Total 700 pounds shipped air freight	\$ 12,500
3. Excess baggage allowance (5) Employee + 3 dependents \$150	\$ 3,000
4. One time consumables freight allowance per employee (2500 pounds) (5) Prorated over 2 years	\$ 9,000
5. Transportation charges of one privately- owned vehicle per employee (5)	\$ 12,500
6. Storage of household effects and vehicles Storage - transportation charges in U.S. 1 year, employee and dependents (5)	\$ 12,500
	<u>\$115,500</u>
4. <u>Allowances</u>	
4.a. Education - Travel and Tuition	\$ 66,000
5 In-Country - \$3,900 each	
5 Out-of-Country - \$9,300 each	
4.b. Per diem - Orientation/Misc.	\$ 1,000
	<u>\$ 67,000</u>
5. <u>Equipment and Other Direct Costs</u>	
5.a. Educational Equipment and Materials	\$ 2,500
(1) Primary Education Curriculum & Instructional Materials Laboratory	\$ 34,233
(2) Life Science Education Laboratory	\$ 8,400
(3) Physical Science Education Laboratory	\$ 3,000
5.c. Other: Communication, Visas, Etc.	\$ 1,500
	<u>\$ 49,633</u>
6. <u>Participant Training</u>	
6.a. U.S. Training 7 participants	\$105,000
per student/per year \$15,000	

b. Inservice

\$ 7,000

\$112,000

Total U.S. Costs

\$791,143

Inflation:

Year Three \$957,283

Year Four \$1,053,011

Year Five \$1,158,312

Year Six \$1,274,144

YEMEN BASIC EDUCATION DEVELOPMENT PROJECT
PRIMARY AND SCIENCE EDUCATION SUB-PROJECT

YEAR SEVEN

I. U. S. Costs

Participant Training	<u>\$45,000</u>
3 participants	
per student/per year \$15,000	

II. Local Costs

1. Housing: U.S. Technicians	\$135,008
Rent:	\$25,000
Utilities:	\$ 5,000
Guard:	<u>\$ 3,752</u>
	<u>\$33,752</u>
Year 1:4, year 2:6, year 3-6:5	
2. In-Country Travel	\$ 7,500
3. Vehicle Maintenance	\$ 2,500
4. Other Costs	\$ 2,000
YEAR ONE TOTAL	<u>\$147,008</u>

Adding 25% Local Inflation:

Year Two	\$268,140
Year Three	\$282,438
Year Four	\$353,047
Year Five	\$441,309
Year Six	\$551,636
Total:	\$2,043,578

LOP - Equipment and Other Direct Costs

1.	Education Equipment and Materials \$2,500 per year	<u>\$ 15,000</u>
2.	Household Appliances, Furniture and Freight (Six Households)	<u>\$128,400</u>
3.	Educational Laboratories	<u>\$605,105</u>
A.	<u>Primary Education Curriculum and Instructional Materials Laboratory</u>	
	Year Two Installation of Center	\$157,200
	Year Three-Six Annual Operational Costs	\$ 34,233/yr.
	Total Cost:	\$294,132
B.	<u>Life Science Education Laboratory</u>	
	Year Two Installation and Establishment	\$157,173
	Year Three-Six Annual Operational Costs	8,400/yr.
	Total Cost:	\$190,773
C.	<u>Physical Science Education Laboratory</u>	
	Year Two Installation and Establishment	\$108,200
	Year Three-Six Annual Operational Costs	\$ 3,000/yr.
	Total Cost:	\$120,200
4.	Other: Communications, Visas, Etc.	<u>\$ 9,000</u>
	Current Price Total	<u>\$757,505</u>
	10% Annual Inflation Factor:	\$127,125
	Sub-total	\$884,630
	Contingency 5%	\$ 44,232
	Grand Total:	<u>\$928,862</u>

Primary Education
Curriculum and Instruction Materials Laboratory

The center will contain a broad selection of primary education and related preparatory and secondary texts from the U.S., the Middle East and other countries. All materials will be selected in consultation with Sana'a University faculty. Annual development, 4 years, will provide for the continual updating and expansion of the facility.

1. <u>Textbooks</u> - Initial set-up 1000 books \$20,000	
Annual additions 350 books \$7,000/yr	\$48,000
2. <u>Reading Units</u> and courses of study on topical areas	\$ 4,300
Initial set-up \$1,500	
Annual additions \$ 700	
3. <u>Media Kits</u> : filmstrips, recordings, guide books	\$ 4,300
Initial set-up \$1,500	
Annual additions \$ 700	
4. Exhibits: games, maps, posters, graphics	\$ 4,300
initial set-up \$2,500	
Annual additions \$ 450	
5. <u>Reference Materials</u> : encyclopedias, dictionaries, etc.	\$ 6,000
Initial set-up \$2,500	
Annual additions \$ 875	
6. <u>Journals</u> - 250 titles	\$40,200
Annual subscriptions \$8,040	
7. <u>Children's Literature</u> - Magazines, picture books	\$47,000
fiction and non-fiction	
Initial set-up 5,000 books \$35,000	
Annual additions \$ 3,000	
8. <u>Audio-Visual Aids</u> - films, slides, video-tapes,	\$13,000
recordings	
Initial set-up \$5,000	
Annual additions \$2,000	
9. <u>Audio-visual Equipment</u> - Dry mount press, bulletin typewriter	\$55,072
thermo jax, slide projectors, movie projectors, video-tape equipment, 35mm camera, film strip projectors, sign making equipment, projector screens, carts, overhead projectors, record player, tape recorder	
Initial set-up \$26,000	
Annual additions \$ 7,268	

10. <u>Information file</u> - pamphlets and newspapers	\$1,300
Initial set-up \$500	
Annual additions \$200	
11. <u>Equipment</u> - shelving, file and storage cabinets	\$36,660
Initial set-up \$34,660	
Annual additions \$ 500	
12. <u>General Education and Research Materials</u>	\$34,000
Initial set-up 1,000 books, \$20,000	
Annual additions \$ 3,500	
Total Initial set-up Cost	\$157,200
Total Annual addition Cost	\$ 34,233
Grand Total	<u>\$294,132</u>

Science Education Laboratories

The present physics, chemistry, geology and biology labs at Sanaa University are designed for use with courses for science majors and are, therefore, inappropriate for training future science teachers. The lab exercises employ techniques and equipment that are far too sophisticated for teachers to use in the secondary schools of Yemen. In order to remedy this situation, a physical science education laboratory and a life science education laboratory will be designed and equipped specifically for methodology instruction. The physical aspects of the two laboratories and their equipment will be based on pedagogical approaches that have been thoroughly tested in the United States and overseas, and which optimize laboratory experiences in science education consistent with what is possible in Yemen at this time and likely to be attainable in the near future.

A. Life Science Education Laboratory

The layout and equipment of the Life Science Education Lab will utilize the best of the Blue, Green, and Yellow versions of the Biological Sciences Curriculum Study, a National Science Foundation funded secondary school curriculum project that has experienced wide success in many countries over the past several years. Although detailed planning for the Life Science Education Laboratory must be done in conjunction with the University science content and science methods course design and must also reflect the existing laboratory facilities in the YAR secondary schools, the BSCS offers an appropriate model for initial layout and equipment. It is a laboratory-centered approach that incorporates time-tested and proven techniques of instruction.

B. Life Science Education Laboratory Cost Breakdown Initial Installation and Establishment

1. Laboratory Equipment - Student and demonstration microscopes, prepared microscope slides, storage cabinets, safety, etc.	\$65,300
2. Laboratory Supplies - Glassware, chemicals, live animal and plant maintenance, preserved specimens, and miscellaneous.	\$15,280
3. Audio - Visual - A-V equipment, charts, models, and reference library.	\$10,235
4. Student stations, benches, desks, storage cabinets, refrigerator, chalkboard, sinks, shelving, demonstration table, cases, etc.	\$66,358
	\$157,173
Annual Operational Cost(four years)	\$ 8,400/Yr.
Total:	\$190,773

-2-

C. Physical Science Education Laboratory

The lab layout and equipment of the Physical Science Education Laboratory will be patterned after the best aspects of the EMU Physics Course for Prospective Teachers, the Earth Science Curriculum Project, and the Intermediate Science Curriculum Study. The latter two projects, national in scope, were funded by the National Science Foundation. They were chosen as models because of their success in conveying geologic principles and chemical concepts. As with the Life Science Education Laboratory, detailed planning will be done in conjunction with the science content and science methods course design, and must reflect existing lab facilities in the YAR secondary schools. All three of the physical science curricula models are student - centered and employ pedagogically sound "hands - on" experiences.

D. Physical Science Education Laboratory Cost Breakdown Initial Installation and Establishment

1. Laboratory Equipment - Student kits, balance scales, hot plates, galvanometers, optics materials, transformers, master equipment package, safety, etc.	\$10,500
2. Laboratory Supplies - Glassware, chemicals, rocks, minerals, wire, beads, streak plates, bulbs, and miscellaneous.	\$ 3,230
3. Audio - Visual - Demonstration equipment, models, electroscope, transparency gratings, maps, work-books, and reference library.	\$ 900
4. Furniture - Student work stations (12) with acid resistant tops, benches, sinks(6), bunsen burner equipment, demonstration table with acid resistant top, storage cabinets, cases, exhaust system, power outlets(240V), chalkboard, etc.	\$93,570
	<hr/> \$108,200
Annual Operational Cost(four years)	\$ 3,000/Yr.
Total:	<hr/> \$120,200

PRIMARY AND SCIENCE EDUCATION SUB-PROJECT

YARG COST ESTIMATES

NARRATIVE

1. The counterpart salaries are derived from the Sanaa University salary schedule and reflects adjustments made as the counterparts complete their studies for the Master's and Doctorate degrees.

Salaries for Instructors are	B.A./S	\$ 7,022
	M.A./S	\$14,068
	Ph.D.	\$20,088

2. An estimation of office and classroom costs.
3. YARG support staff.
4. Each participant is provided with housing during their training in Yemen.
5. Books and materials provided to supplement project activities.
6. In-country travel for participants.
7. A 25 percent local inflation rate is added each year.

BASIC EDUCATION DEVELOPMENT PROJECT NO. 279-0053
 PRIMARY AND SCIENCE EDUCATION SUB-PROJECT
 YARG COST ESTIMATES
 BY FY YEAR (\$ X 000)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
1. Professional Staff (Counterparts - 14)	56.0	98.0	126.0	147.6	175.8	235.0	838.4
2. Offices, Classrooms, Supplies & Services	15.0	20.0	20.0	20.0	20.0	20.0	115.0
3. Secretarial/Clerk Typist	3.8	5.0	5.0	5.0	5.0	5.0	28.8
4. Staff Housing (Participants)	78.8	105.0	105.0	105.0	105.0	105.0	603.8
5. Textbooks and Materials	2.2	3.0	3.0	3.0	3.0	3.0	17.2
6. Other Expenditures (Travel)	108.1	144.1	144.1	162.2	162.2	180.4	901.1
Sub-Total/Current Prices	263.9	375.1	403.1	442.8	471.0	548.4	2504.3
Sub-Total Plus 25% Inflation Cmp.	263.9	468.8	629.8	864.8	1149.9	1673.5	5050.7
Grand TOTAL Plus 5% Contingency	277.0	492.3	661.3	908.0	1207.4	1757.2	5303.2

Annex B
Log Frame

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 80 to FY 86
Total U.S. Funding \$9,141,210
Date Prepared: May 2, 1980

Project Title & Number: 279-0053 Sub-Project: Primary and Science Education

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p><u>Program or Sector Goal:</u> The broader objective to which this project contributes: Project or Sector Goal: The broader objective to which this project contributes: Improve economic and social conditions of people of YAR through accelerating the development of the basic education sector by improving its quality, making it more efficient and increasing its availability.</p>	<p><u>Measures of Goal Achievement:</u> 1. General level of quality of life indicators. 2. Basic education indicators Enrollment ratios Retention rates Female participation General literacy rates</p>	<p>1. General Socio-economic studies by CPO, University and donors. 2. Routinely collected school statistics.</p>	<p><u>Assumptions for achieving goal targets:</u> 1. Foreign donor agencies continue to provide subsidies to YARG at current levels. 2. Yemeni traditions and culture are not antagonistic to the introduction and assimilation of applied sciences and health education. 3. Yemeni leaders and citizens will remain committed to the development and utilization of basic education.</p>
<p><u>Project Purpose:</u> To develop within the Faculty of Education a new Department of Primary Education to support and provide leadership for all aspects of primary education (grades 1-6) in Yemen and to improve science education in preparatory and secondary schools in Yemen by providing higher quality teachers through a new program of science education at Sana's University and through inservice education of existing teachers.</p>	<p><u>Conditions that will indicate purpose has been achieved: End of project status</u> Department of Primary Education and Science Education Program functioning and staffed by qualified Yemeni. The staff providing inservice training in science and primary education methods. Graduate and undergraduate primary education courses being offered to students in general primary and three graduate programs. Science methods and content course being offered. A curriculum materials and R&D center established and functioning in DPE. Science labs established and functioning.</p>	<p>1. Sanaa University records. 2. Project review and analysis, on-site inspection. 3. MOE records and learning exam results. 4. Contractor reports. 5. Enrollment reports and exam results from Faculty of Science and Faculty of Education.</p>	<p><u>Assumptions for achieving purpose:</u> 1. Economic incentives for Yemeni teachers sufficient to stay in teaching. 2. University and MOE maintains credibility by equal treatment of all. 3. University and MOE maintains high level of project support</p>

INITIATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	EVIDENCE OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Outputs:</p> <ol style="list-style-type: none"> Short and long range plans for Faculty of Education, Department of Primary Education, and Science Education Program. Trained staff for DPE and Science Education Program. Curriculum and courses for primary and science education. Science education labs. Curriculum and Instructional Materials Lab. Inservice programs in primary and science education, 	<p>Magnitude of Outputs:</p> <ol style="list-style-type: none"> Long range plus annual plans. 5 in Science Education Methods; 6 in Science Content. Science methods and content courses General Primary Education (B.A.), Primary Teacher Trainers (M.A.), Primary Education Supervisors and Administration. One Physical Science; One Life Science One center in Faculty of Education Four inservice science programs; Six programs for primary school teachers. 	<ol style="list-style-type: none"> Published documents and Sanaa University records. Contractor reports. Annual project reviews and analysis. Participant training transcripts. Site visitations. 	<p>Assumptions for achieving outputs:</p> <ol style="list-style-type: none"> Personnel available with appropriate qualifications. Effective implementations of YARG conditions of service. Male and female teachers will participate in in-service programs
<p>Inputs:</p> <p>V. U.S. Inputs Total: \$9,141,210</p> <p>a. Tech Asst. 2,682,060</p> <ol style="list-style-type: none"> Science Consultant 4 P/Y Life Sci. Specialist 6 P/Y Phys. Sci. Specialist 6 P/Y Faculty of Ed. Consul. 6 P/Y Primary Teach. Ed. Sp. 4 P/Y Primary Curr Spec. 2 P/Y Instruct. Materials Sp. 2 P/Y Short-term Consultant 2 P/Y <p>b. Partic. Training \$ 672,000</p> <ol style="list-style-type: none"> Doctoral Level 42 P/Y <p>c. Commod/Equip \$ 782,505</p> <ol style="list-style-type: none"> Two Science Laboratories Instructional Mat. Laboratories One vehicle & maintenance Furniture/appliances Supplies <p>d. Trans. Costs \$ 738,000</p> <ol style="list-style-type: none"> International (693,000) In-country (45,000) <p>e. T.A. Housing Yemen \$1,012,560</p> <p>f. Other Costs 12,000</p> <p>g. TA Staff Allowance 402,000</p> <p>h. Infl. Factor U.S. 1,445,771</p> <ol style="list-style-type: none"> Infl. Factor Yemen 959,018 <p>j. Contingency (.05) 435,296</p> <p>II. YARG Inputs Total: \$5,303,200</p> <p>a. Professional Staff 838,400</p> <p>b. Logistical Support 603,800</p> <p>c. Other Costs & Cont 1,067,100</p> <p>d. Infl. Factor 2,926,400</p> <p>e. Contingency 252,500</p>	<p>Implementation Target (Type & Quantity)</p> <ol style="list-style-type: none"> Implementation targets, time frame are included in PP section on US inputs and implementation. Graduate trng. in science education curriculum and eval, Pri. Teacher Trng. Lab. equip., materials, library supplies and texts. 1 vehicle Internal & external eval. per PP. <p>YARG—as provided in PP discuss.</p>	<ol style="list-style-type: none"> AID PAR report Contractor reports On-site monitoring. External evaluation report. 	<p>Assumption for providing inputs:</p> <p>USAID</p> <ol style="list-style-type: none"> Procurement of commodities expeditious and on schedule. <p>YARG</p> <ol style="list-style-type: none"> MOE and University assigns qualified persons and makes financial and logistical resources available on a timely basis.

Annex C
Implementation Schedule

ANNEX CBASIC EDUCATION DEVELOPMENT PROJECT 279-0053
PRIMARY AND SCIENCE EDUCATION SUBPROJECT

IMPLEMENTATION SCHEDULE

<u>ACTION</u>	<u>TIME FRAME</u>	<u>RESPONSIBLE AGENCY</u>
1. P. P. Mission Approval	2 May 1980	AID/Y
2. Project Review	15 May 1980	AID/W
3. NEAC Review	22 May 1980	AID/W
4. Short Term Advisers (Taiz-Sanaa)	25 May 1980	EMU
5. Authorization	1 June 1980	AID/W
6. Contract Amendment	30 June 1980	AID/Contracts
7. Preliminary Design Science Program - Taiz	30 June 1980	EMU/SU
8. Science Program Revision - Sanaa	30 July 1980	EMU/SU
9. Preliminary Design Faculty of Education Plan	30 June 1980	EMU/SU
10. Annual Program Review	30 July 1980	EMU/AID/SU
11. Faculty of Science Group I Participants Selected (4)	30 July 1980	EMU/SU
12. Four Long-Term Technical Advisers Arrive	1 Sept 1980	EMU
13. Science Participants (Group I) Begin Intensive English	1 Sept 1980	EMU
14. Faculty of Science Participants (4) Group II Part-time English and Counterpart Training Begins	30 Sept 1980	EMU/SU
15. Science Participants Begin U. S. Academic Study	1 Jan 1981	EMU
16. Faculty of Education Draft Plan Completed	28 Feb 1981	EMU/SU

<u>ACTION</u>	<u>TIME FRAME</u>	<u>RESPONSIBLE AGENCY</u>
17. Faculty of Education Plan Sanaa University Review	30 March 1981	SU
18. Science Education Labs (2) Plan & Design Completed	30 May 1981	EMU/SU
19. Faculty of Education Plan Final Plan Approved	30 May 1981	SU
20. Science Education Program Curriculum Design Years 1 and 2	30 June 1981	EMU/SU
21. Sanaa Science Program Revisions	30 June 1981	EMU/SU
22. Faculty of Science-Education Administrative Development Program Begins	30 June 1981	EMU/SU
23. Science Education Labs (2) Equipment Ordered	30 June 1981	EMU
24. Curriculum Materials Center Faculty of Education Plan Design	30 June 1981	EMU/SU
25. Science Education Program Final Approval	30 July 1981	SU
26. Science Program Approval - Sanaa	30 July 1981	SU
27. Annual Program Review	30 July 1981	EMU/AID/SU
28. Science Labs (2) Equipment Installed	30 Sept 1981	EMU/SU
29. Curriculum Materials Center Equipment Ordered	30 June 1981	EMU
30. Curriculum Materials Center Installed	30 Dec 1981	EMU/SU
31. Faculty of Education Participants Selected (3)	30 June 1981	EMU/SU
32. Faculty of Education Participants Intensive English	1 Sept 1981	EMU

<u>ACTION</u>	<u>TIME FRAME</u>	<u>RESPONSIBLE AGENCY</u>
33. Faculty of Education Participants Begin U. S. Training	1 Jan 1982	EMU
34. Annual Project Review	30 July 1982	EMU/AID/SU
35. Science Education Program Curriculum Years 3 and 4	30 Aug 1982	EMU/SU
36. Faculty of Science Participants (4) Group I Return to Sanaa	30 Dec 1982	EMU
37. Faculty of Science Participants (4) Group II Depart for U. S. Study	1 Jan 1982	EMU

Annex D
First Annual Workplan

ANNEX D

FIRST ANNUAL WORKPLAN

MAY 25, 1980--JUNE 30, 1981

A. Introduction

The Primary and Science Education Sub-project is one of four sub-projects being designed and implemented under the Basic Education Development Project 279-0053. The overall objectives of the BEDP is to assist the YARG in establishing a viable infrastructure supporting basic education in Yemen's formal primary education system, grades one through six. A key element in the infrastructure is a Faculty of Education and Faculty of Science capable of providing the leadership, programs and manpower needs for the basic education sector. During the first year of implementation, efforts of the Primary and Science Education Sub-project will be devoted to analysis, planning and program development in the Faculties of Science and Education at Sanaa University. In addition, participant training programs will be designed and implemented. Section B of this workplan identifies the progress to be achieved during the first 12 months in meeting the 6-year sub-project goals. Section C contains a description of tasks to be accomplished during the period. Section D lists the inputs required in the first year and Section E contains the job description for key personnel. The Implementation Schedule is found in Annex C of this document, and the budget for the first year of operation is found in the Financial Plan Annex A. Reports will be coordinated for the Basic Education Development Project through the centralized management of the sub-project.

B. Outputs

During the period covered by this first annual workplan, the contractor is scheduled to make the following progress toward achieving the 6 year output goals of the sub-project.

1. Long and Short Range Plans for the Faculty of Education

A Faculty of Education development plan will be designed and approved by Sanaa University. The plan will include a statement of the Faculty's mission and responsibilities in the education sector. Program areas will be identified with projected staff and support facilities required for implementation. The development plan will give particular attention to the creation of a new Department of Primary Education with strategies for program and staff development.

2. Science Education Curriculum and Courses Designed for the First 2 Years of University Programs

The science education curriculum and content and methods courses will be designed and approved for the first two years of the four year university program for science education teacher trainees at the Taiz branch of Sanaa University. Initial work on the new experimental science education program in life and physical sciences will have been completed by the Faculty of Science staff and the sub-project short term consultants during the period May-July 1980.

3. Science Program Revisions at Sanaa University

The science curriculum and course content at Sanaa University will be analyzed and revised. New patterns of major and minor areas of science study designed and approved. Appropriate credit hour allocations to discrete science courses approved and recording

procedures established.

4. Science Education Laboratories Planned and Designed

Detailed plans for the physical and life science education laboratories developed in conjunction with the science content and science education methods courses approved by Sanaa University, AID and EMU. Orders for equipment and materials placed.

5. Counterpart Training

Eight persons will have been selected and appointed by Sanaa University as counterparts to the Primary and Science Education Sub-project. Four of the participants will have completed initial English language training in Sanaa and started the two year academic training in the U.S. The second four will have started part-time English language training in Sanaa and taken up counterpart positions at Sanaa University.

C. Scope of Work

Eastern Michigan University shall undertake, but not be limited to, performance of the following tasks during the period 25 May 1980 to 30 June 1981.

1. Prepare a Life-of-Sub-project Workplan, Providing For Periodic Updates, Including Preparation of the Second Annual Workplan

The technical assistance team, the counterparts and Sanaa University administrators will, in concert, prepare a more detailed life-of-sub-project workplan. Particular attention will be given to those elements that interface with other sub-projects of the BEDP. The

second annual workplan will be prepared by the team leader and presented for review May 1981.

2. Technical, Administrative and Logistic Support for the Sub-project

The technical, administrative and logistic support for this sub-project will be provided through the CORE Sub-project under the direction of the Eastern Michigan University Project Manager/ Principal Investigator.

3. Design and Manage Training Programs for Sub-project Participants

This sub-project is a combined technical assistance, institutional program and staff development activity. In addition to the on-the-job training component, academic training will be provided to the Ph.D. level for the program counterparts to prepare them to take up professional positions at Sanaa University. The contractor will be responsible for program design and appropriate placement in institutions of higher education in the U.S. Monitoring and logistic support for the participants will be administered through the EMU Campus Training Coordinator office.

4. English Language Training

English language training for program participants will be provided in Sanaa through the English language training unit of the Primary Teacher Training Sub-Project of the BEDP.

5. Administration Improvement and Development

The sub-project team leader in cooperation with Sanaa University administrators will carry out an analysis of the

administrative structure of the Faculties of Science and Education. Model systems will be designed and submitted to the university for testing and approval.

D. Inputs

Four long term technical assistance personnel will be required during the first 12 months of this sub-project. The team will consist of a Science Consultant/Administrator who will serve as the team leader; one science educator (life sciences); one science educator (physical sciences) and one education planning specialist.

Short-term advisers will be utilized each year in this sub-project. Anticipated areas requiring consultant services include, laboratory design (2), laboratory manual preparation and specialized course design. Consultants will be selected from EMU faculty whenever possible to provide for continuity within the program.

As a part of the detailed Life-of-Sub-Project Workplan, to be completed during the first year of sub-project, specific areas of need and times of input will be scheduled.

Other inputs required during this period include support for four participants for the first six months of U. S. academic training.

E. Job Description

1. Science Consultant/Administrator (Team Leader)

The science consultant/administrator will conduct a general review and evaluation of the science program at Sanaa University.

This person will prepare a full report of findings with recommendations for program, administration, evaluations and planning improvements necessary to modernize the science programs and make them more responsive to manpower and development needs of the YAR. As the sub-project team leader, he will coordinate the work of the other team members and establish the necessary linkages between the Faculties of Science and Education. All activities will be carried out with the counterparts and in cooperation with Sanaa University officials, particularly the Deans of the Faculty of Science and Education.

Qualifications: An advanced degree in science. Administrative experience in university/college science area with expertise in program development.

The science consultant/administrator will report to and be responsible to the EMU Chief-of-Party, BEDP 279-0053.

2. Science Education Adviser (Life Sciences and Science Education Adviser (Physical Sciences))

The two science education advisers will be responsible for developing the curriculum and courses for the science teacher education programs at the Taiz branch of Sanaa University. These activities will be carried out with the participation of the university appointed counterpart. Qualifications: An advanced degree in Science Education or equivalent experience or training. University/College experience in science teacher education. Experience in program and course development, primary and/or secondary teaching, and directing inservice education programs.

These two science advisers will report to and be responsible

to the sub-project team leader.

3. Education Planning Specialist

To assist Sanaa University develop its short and long range plans for the Faculty of Education, a professional educator with extensive experience in College of Education teaching and administration will be assigned to this sub-project. In addition to formulating the development plan for the Faculty of Education, the specialist will assist in the design of program areas, particularly those for the new Department of Primary Education. Qualification: An advanced degree in teacher education. Administrative experience at the dean and/or department head level of a college of education. This person will be responsible to and report to the sub-project team leader.

ANNEX E

YAR GOVERNMENT LETTER OF REQUEST

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



YEMEN ARAB REPUBLIC
MINISTRY OF EDUCATION
MINISTER OFFICE

الجمهورية العربية اليمنية

وزارة التربية والتعليم

مكتب الوزير

تحريراً في 29/6/1976
 بشأن

رقم القيد 5010
 رقم الملف 3
 عدد المرات

Mr. Chester S. Bell, Jr.
 Acting Director
 USAID/Yemen

Subject: AID Project 279-0053
Primary and Science
Education Subproject

Dear Mr. Bell:

We have reviewed the draft Primary and Science Education Subproject Paper and are in agreement with the objectives and goals of the proposed project. We request, therefore, that the U.S. Government, through the Agency for International Development (USAID), provide technical and commodity assistance, as well as participant training, pursuant to the project design.

The Government of the Yemen Arab Republic (YARG) for its part will furnish the usual assistance in customs clearance, rights of access, security of personnel, and equipment/commodities. Furthermore, the YARG will assign to the project the personnel called for and will make available the financial contribution as detailed in the draft project paper.

Handwritten signature and stamp in Arabic script, including the name "محمد بن عبد الله" (Mohamed bin Abdullah).

Sincerely yours,

Mohamed al-Khadem
 Minister of Education



ANNEX F

STATUTORY CHECKLIST

PRIMARY AND SCIENCE EDUCATION SUBPROJECTPROJECT CHECKLISTA. GENERAL CRITERIA FOR PROJECT

1. FY 79 App. Act Unnumbered; FAA Sec. 634A; Sec. 653(b). (a) Describe how authorizing and appropriations Committees 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)?
 - (a) Appropriate notification has taken place.
 - (b) Yes.
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 action is required.
4. FAA Sec. 611 (b); FY 79 App. Act Sec. 101. If for water or water-related land resource construction, has project met the standards and criteria as per the Principles and Standards for Planning Water and Related Land Resources dated October 25, 1973?

N/A
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 and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project?

N/A
6. FAA Sec. 209. Is project susceptible of execution as part of regional or multi-lateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.

No.

7. FAA Sec. 601 (a). Information and conclusions whether project will encourage efforts of the country to: (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.

N/A Subproject is not susceptible to encouraging such efforts.
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).

Large commodity component of subproject will be procured primarily from 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, and foreign currencies owned by the U.S. are utilized to meet the cost of contractual and other services.

Yemen will provide a substantial amount of local currency for subproject purposes.
10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?

No.
11. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?

Yes.
12. FY 79 App. Act Sec. 7608 7. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity?

N/A

B. FUNDING CRITERIA FOR PROJECT1. Development Assistance Project Criteriaa. FAA Sec. 102 (b); 111; 113; 281a.

Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions: (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries?

(a) The subproject is directed to primary and science education, by setting up a Department of Education to support and provide leadership for all aspects of primary education and for secondary science education, including inservice teacher education.

(b) N/A

(c) The subproject is to help Sana'a University and the Ministry of Education.

(d) Yes. Women will participate.

(e) No

b. FAA Sec. 103, 103A, 104, 105, 106, 107.

Is assistance being made available: (include only applicable paragraph which corresponds to source of funds used. If more than one fund source is used for project, include relevant paragraph for each fund source.)

(1) 103 for agriculture, rural development or nutrition; if so (a) extent to which activity is specifically designed to increase productivity and income of rural poor; 103A if for agricultural research, full account shall be taken of the needs of small farmers, and extensive use of field testing to adapt basic research to local conditions shall be made; (b) extent to which assistance is used in coordination with programs carried out under Sec. 104 to help improve nutrition of the people of developing countries through encouragement of increased production of crops with greater nutritional value, improvement of planning, research, and education with respect to nutrition, particularly with reference to improvement and expanded use of indigenously produced foodstuffs; and the undertaking of pilot or demonstration programs explicitly addressing the problem of malnutrition of poor and vulnerable people, and (c) extent to which

N/A

-4-

activity increases national food security by improving food policies and management and by strengthening national food reserves, with particular concern for the needs of the poor, through measures encouraging domestic production, building national food reserves, expanding available storage facilities, reducing post harvest food losses, and improving food distribution.

- (2) / 104 / for population planning under Sec. 104(b) or health under Sec. 104(c); if so, (a) extent to which activity emphasizes low-cost, integrated delivery systems for health, nutrition and family planning for the poorest people, with particular attention to the needs of mothers and young children, using paramedical and auxiliary medical personnel, clinics and health posts, commercial distribution systems and other modes of community research.
- (3) / 105 / for education, public administration, or human resources development; if so, extent to which activity strengthens nonformal education, makes formal education more relevant, especially for rural families and urban poor, or strengthens management capability of institutions enabling the poor to participate in development; and (b) extent to which assistance provides advanced education and training of people in developing countries in such disciplines as are required for planning and implementation of public and private development activities.
- (4) / 106 / for technical assistance, energy, research, reconstruction, and selected development problems; if so, extent activity is: (i) (a) concerned with data collection and analysis, the training of skilled personnel, research on and development of suitable energy sources, and pilot projects to test new methods of energy production; and (b) facilitative of geological and geophysical survey work to locate potential oil, natural gas, and coal reserves and to encourage exploration for potential oil, natural gas, and coal reserves.

N/A

Yes. Subproject will develop within the Faculty of Education a new Department of Primary Education to support and provide leadership for all aspects of primary education, grades 1-6, and to improve the science education in preparatory and secondary schools by providing higher quality teachers through a new program of science education.

N/A

-5-

(ii) technical cooperation and development, especially with U.S. private and voluntary, or regional and international organizations;

(iii) research into, and evaluation of, economic development processes and techniques;

(iv) reconstruction after natural or manmade disaster;

(v) for special development problems, and to enable proper utilization of earlier U.S. infrastructure, etc., assistance;

(vi) for programs of urban development, especially small labor-intensive enterprises, marketing systems, and financial or other institutions to help urban poor participate in economic and social development.

c. 107 is appropriate effort placed on use of appropriate technology? (relatively smaller, cost-saving, labor using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor.)

N/A

d. FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or has the latter cost-sharing requirement been waived for a "relatively least developed" country)?

Yes.

e. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing, or is the recipient country "relatively least developed"?

Yes, "relatively least developed."

f. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in governmental processes essential to self-government.

The subproject will assist the Yemenis to develop and institutionalize more modern primary education and science education programs specifically designed to meet the special needs of the country at its present stage of development.

g. FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?

The subproject provides support for an extensive education sector development effort which is expected, in the long run, to positively influence the development of all of Yemen's economic resources and contribute to economic growth of the country.

-6-

2. Development Assistance Project Criteria
(Loans Only)

a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan, at a reasonable rate of interest.

N/A

b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan?

N/A

3. Project Criteria Solely for Economic Support Fund

a. FAA Sec. 531(a). Will this assistance promote economic or political stability? To the extent possible, does it reflect the policy directions of section 102?

N/A

b. FAA Sec. 531(c). Will assistance under this chapter be used for military, or paramilitary activities?

N/A

BASIC EDUCATION DEVELOPMENT (298-0053)

PRIMARY AND SCIENCE EDUCATION SUBPROJECT

A. Procurement

1. FAA Sec. 602. Are there arrangements to permit U.S. small business to participate equitably in the furnishing of goods and services financed? **Yes.**
2. FAA Sec. 604(a). Will all commodity procurement financed be from the U.S. except as otherwise determined by the President or under delegation from him? **Yes.**
3. FAA Sec. 604(d). If the cooperating country discriminates against U.S. marine insurance companies, will agreement require that marine insurance be placed in the U.S. on commodities financed? **There is no such discrimination.**
4. FAA Sec. 604(e). If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? **N/A**
5. FAA Sec. 608(a). Will U.S. Government excess personal property be utilized wherever practicable in lieu of the procurement of new items? **Yes.**
6. FAA Sec. 603 (a). Compliance with requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S. -flag commercial vessels to the extent that such vessels are available at fair and reasonable rates. **Privately-owned US flag commercial vessels do not call at Yemen's ports on any regular or scheduled basis.**

7. FAA Sec. 621. If technical assistance is financed, will such assistance be furnished to the fullest extent practicable as goods and professional and other services from private enterprise on a contract basis? If the facilities of other Federal agencies will be utilized, are they particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs? The contractor for technical services is a U.S. state institution of higher education and was selected on a competitive basis. Commodities will be procured from private suppliers.
8. International Air Transport. Fair Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will provision be made that U.S. -flag carriers will be utilized to the extent such available? Yes
9. FY 79 App. Act Sec. 105. Does the contract for procurement contain a provision authorizing the termination of such contract for the convenience of the United States? Yes
- B. Construction
1. FAA Sec. 601(d). N/A
2. FAA Sec. 611(c). N/A
3. FAA Sec. 620(k). N/A
- C. Other Restrictions
1. FAA Sec. 122(e). N/A
2. FAA Sec. 301(d). N/A
3. FAA Sec. 620(h). Yes
4. FAA Sec. 636(i). Is financing not permitted to be used, without waiver, for purchase, long-term lease, or exchange of motor vehicle manufactured outside the U.S., or guaranty of such transaction? Yes
5. Will arrangements preclude use of financing:
- a. FAA Sec. 104(f). To pay for performance of abortions or to motivate or coerce persons to practice abortions, to pay for performance of involuntary sterilization, or to coerce or provide financial incentive to any person to undergo sterilization? N/A
- b. FAA Sec. 620(g). To compensate owners for expropriated nationalized property? N/A
- c. FAA Sec. 660. To finance police training or other law enforcement assistance, except for narcotics programs? N/A

- d. FAA Sec. 662. For CIA activities? N/A
- e. FY 79 App. Act Sec. 104. To pay pensions, etc. for military personnel? N/A
- f. FY 79 App. Act Sec. 106. To pay U.N. assessments? N/A
- g. FY 79 App. Act Sec. 107. To carry out provisions of FAA sections 209(d) and 251(h)? (Transfer of FAA funds to multilateral organizations for lending.) N/A
- h. FY 79 App. Act Sec. 112. To finance the export of nuclear equipment, fuel, or technology or to train foreign nations in nuclear fields? N/A
- i. FY 79 App. Act Sec. 601. To be used for publicity or propaganda purposes within the United States, not authorized by Congress? N/A

ANNEX G

APPROVAL MESSAGES

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INCOMING TELEGRAM

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PAGE 01 SANA 02393 03 OF 03 211436Z

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SANA 02393 03 OF 03 211436Z

ACTION 810-59

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5. SELECTION CRITERIA PER REFTEL PARA 7:

A. ACADEMIC/PROFESSIONAL COMPETENCE (40 PER CENT)
CAPACITY TO PROVIDE IN TIMELY MANNER, PRIMARILY FROM OWN INSTITUTION, ARABIC SPEAKING SPECIALISTS WITH STRONG PROFESSIONAL QUALIFICATIONS/RELEVANT EXPERIENCE IN REQUIRED FIELDS. DEMONSTRATED COMPETENCE TO PRODUCE CURRICULUM MATERIALS IN ARAB COUNTRIES.

B. COMMITMENT (20 PER CENT)
EXPRESSED/DEMONSTRATED WILLINGNESS INSTITUTION TO MAKE LONG TERM (BEYOND LIFE OF AID FUNDED) ACTIVITIES COMMITMENT TO BASIC EDUCATION IN YEMEN AND TO USE PROJECT AS VEHICLE TO DEVELOP COMPETENCE WHICH WOULD BE USEFUL IN OTHER ARAB LDC'S.

C. ORGANIZATIONAL CAPACITY (20 PER CENT)
CAPACITY TO MANAGE PROJECT OF THIS TYPE AND MAGNITUDE. CAPACITY TO PROVIDE SUPPORT STAFF AND FACILITIES. EVIDENCE PROJECT WILL NOT STRETCH INSTITUTIONAL CAPACITY.

D. PROPOSAL (20 PER CENT)
SOUNDNESS, INNOVATIVENESS AND APPROPRIATENESS OF CONTRACTOR'S APPROACH TO PLANNING AND IMPLEMENTATION OF SPECIFIC PROJECT ACTIVITIES AND THE OVERALL BASIC EDUCATIONAL DEVELOPMENT GOAL OF PROJECT.

6. DESIGN SKILLS:

PROJECT 053 DESIGN TEAM/SECTOR SHOULD INCLUDE FOLLOWING SKILLS AS THEY RELATE TO THE BASIC EDUCATION SECTOR. SKILLS MAY BE COMBINED IN INDIVIDUAL TEAM

MEMBERS:

- UNIVERSITY ADMINISTRATION AND PLANNING
- PRIMARY AND SECONDARY ADMINISTRATION AND PLANNING
- PRIMARY SCIENCE EDUCATION AND RELATED CURRICULUM DEVELOPMENT
- SECONDARY SCIENCE EDUCATION AND RELATED CURRICULUM DEVELOPMENT
- PRIMARY AND SECONDARY TEACHER EDUCATION
- MATHEMATICS EDUCATION
- PRIMARY, SECONDARY AND TEACHER TRAINING CURRICULUM AND DEVELOPMENT
- MASS COMMUNICATIONS TECHNOLOGY AND METHODOLOGY
- NON-FORMAL EDUCATION (EDUCATIONAL OUTREACH)
- VOCATIONAL EDUCATION (AS RELATED TO BNM)
- MANPOWER DEVELOPMENT PLANNING

EXPECT 28 PERSON-MONTHS REQUIRED PLUS 2 PERSON MONTHS AID/W TDY ASSISTANCE (TO ASSIST MISSION STAFF WHO WILL PROVIDE LEADERSHIP). DESIGN PERIOD LEFT TO PROPOSALS. EXPECT MINIMUM 3 MONTHS WITH 6 MONTH LIMIT.

7. INTERIM REPORTING:

PER PARA 9 REFTEL, CONCUR AID/W DESIRES FOR CONTINUOUS EXCHANGE OF VIEWS. PREPARED SUBMIT INTERIM REPORT DURING DESIGN PROCESS IF SECTOR STUDY WORK INDICATES POSSIBLE NEED FOR SUBSTANTIVE CHANGE FROM ABOVE PROJECT OUTLINE.

B. RFP/TERMS OF REFERENCE:

BELIEVE DEGREE OF FAMILIARITY KEY BUREAU STAFF WITH PROJECT CONCEPT AND YEMEN SITUATION, ALONG WITH AMOUNT OF DOCUMENTATION PROVIDED TO DATE BY PROJECT DEVELOPMENT PROCESS SUFFICIENT FOR AID/W TO PROCEED WITH DOCUMENTATION REQUIRED FOR CONTRACTOR SELECTION PROCESS. SUGGEST AID/W ALSO CONSULT WITH RECENTLY RETURNED TEAM, PARTICULARLY EDUCATION SPECIALIST MASTERS. REQUEST AID/W PROCEED EXPEDITIOUSLY WITH PROCESS. BELIEVE WITH CONCENTRATED EFFORT RFP CAN BE ISSUED BY JUNE 30. MISSION DESIRES PARTICIPATE REVIEW OF PROPOSALS/FINAL SELECTION CONTRACTOR AND MAKE-UP OF DESIGN TEAM. REQUEST SUBSTANCE TERMS OF REFERENCE BE CABLED TO MISSION FOR COMMENT/APPROVAL.
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PAGE 3 OF 02 STATE 118450
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APPROVED BY AA/NE:JHEELER
NE/HENA:JKNOLL (DRAFT)
SER/CH/ROC/NE:FHMULTON (DRAFT)
NE/GC:GBISSON (DRAFT)
NE/DP:PSELLAR (DRAFT)
NE/TECH:JSMITH (DRAFT)
NE/TECH:VGLABERT (DRAFT)
NE/PD:DREESE (DRAFT)
O/AA:ADWHITE
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E.O. 11652: N/A

TAGS:

SUBJECT: NEAC REVIEW OF PIDS FOR PRIMARY TEACHER TRAINING (279-8954) AND IMPROVEMENT OF the Faculty of Science (0053)

REF (STATE 002070, (B) SANA 1000

1. THE NEAC REVIEWED AND APPROVED SUBJECT PIDS ON APRIL 25 AND RECOMMENDS THAT THE MISSION PROCEED TO DEVELOP THE PROJECT(S) TO PP STAGE. HOWEVER, NEAC IDENTIFIED, AS NOTED FOLLOWING PARAS, A NUMBER OF ISSUES WHICH NEED TO BE RESOLVED, PLUS SEVERAL SUGGESTIONS FOR MISSION CONSIDERATION.

2. NEAC RECOGNIZED THAT UNDER NORMAL CIRCUMSTANCES IT WOULD BE HIGHLY DESIRABLE TO HAVE A HUMAN RESOURCE DEVELOPMENT STRATEGY WELL ARTICULATED PRIOR TO CONSIDERATION OF THESE AND OTHER HRD PROJECTS. HOWEVER, WE ALSO

APPRECIATE MISSION/YARG CONCERN FOR EXPEDITIOUS PROJECT DEVELOPMENT AND CONSEQUENTLY RECOMMEND THAT THE MISSION ARRANGE TO INCORPORATE STRATEGY, INCLUDING SECTOR ANALYSIS REQUIRED TO SUPPORT THE STRATEGY IN THE PP(S). WE HOPE THAT MANY OF THE CONCERNS OUTLINED IN REF (A) CAN BE ADDRESSED IN THAT EFFORT. WE ALSO SUGGEST THE STRATEGY INCLUDE: (A) ANALYSIS OF YEMEN'S HUMAN RESOURCE REQUIREMENTS; (B) THE ANTICIPATED ROLE, DEFICIENCIES, AND PRIORITIES OF YAR EDUCATION SYSTEM; (C) EDUCATION POLICIES; (D) ANTICIPATED IMPACT OF U.S. INPUTS; (E) NATURE AND RELEVANCE OF EXISTING CURRICULUM, FACILITIES, EQUIPMENT AND MATERIALS; (F) IMPLICATIONS OF SUCH THINGS AS COSTS AND ABSORPTIVE CAPACITIES ASSOCIATED WITH INDICATED APPROACHES; (G) OTHER DONOR INPUTS AND HOW THEY RELATE TO AID PROJECTS; (H) ROLE OF LARGE NUMBERS OF EXPATRIATE TEACHERS AND RELATIONSHIP TO AID INPUTS. WE ARE NOT HOWEVER ASKING FOR DETAILED EDUCATION SECTOR ASSESSMENT BUT RATHER AN ANALYTICAL OUTLINE OF THE YAR EDUCATIONAL STRATEGY SITUATION, PLANS, AND THE ROLE OF PROPOSED MISSION SUPPORT

3. IN LIGHT OF TYPE OF PROJECT DEVELOPMENT CONTEMPLATED WHICH, AS INDICATED PARA 2 ABOVE INCLUDES STRATEGY OUTLINE,

THE NEAC SUGGESTS MISSION MAY WISH TO CONSIDER COMBINING THESE TWO PROJECTS. WE BELIEVE THERE MAY BE ADEQUATE RATIONALE FOR THIS, INCLUDING THE ANTICIPATED EFFECT ON OVERALL IMPROVEMENT OF TEACHING AT PRIMARY, SECONDARY AND UNIVERSITY LEVELS. WE NEED SOONEST YOUR VIEWS ON THE POSSIBILITY OF A SINGLE CONSOLIDATED PROJECT AND WHATEVER OTHER DESIGN MODIFICATIONS OR ADDITIONS YOU MAY WISH TO PROPOSE, SOME OF WHICH PERHAPS SURFACED IN THE COURSE OF MISSION'S RECENT FIELD CONSULTATION WITH THE IBRD APPRAISAL TEAM. OBVIOUSLY, WHETHER WE ARE DEALING WITH TWO PROJECTS OR A SINGLE CONSOLIDATED PROJECT, THE SCOPE OF THEIR OR ITS COMPONENT PARTS WILL BEAR ON THE OPERATION OF THE COLLABORATIVE ASSISTANCE EVALUATION PANEL DESCRIBED PARA 6. WE LOOK FORWARD TO YOUR COMMENTS ON THE MATTER.

4. NEAC RECOMMENDS USAID CONSIDER DESIGN ALTERNATIVES SUCH AS SHORTENING TIME FRAME OF PROJECTS, PERHAPS INCREASING SPEED OF TEACHER TRAINING, ETC. NEAC BELIEVES A BETTER DELINEATION OF INTERMEDIATE OBJECTIVES AND OUTPUTS NEEDED: DURING ADVISORY MEETINGS AND IN SEPARATE

DISCUSSIONS WITH DR. NEVILLE, VIEW EXPRESSED THAT THE MISSION MIGHT BE HARRIED PREMATURELY TO SOME TRADITIONAL LONG TERM SOLUTIONS AND THAT PROJECT GOALS MIGHT BETTER BE MET BY THE ADDITION OF ACTIVITIES DESIGNED TO HAVE NEARER TERM IMPACT. SPECIFICALLY, CONCERN WAS EXPRESSED THAT GIVEN LEVEL OF STUDENTS IN PTTC (I.E., 7TH-9TH GRADES AND 10TH TO 12TH GRADES) LOW QUALITY OF PRIMARY SCHOOL TEACHERS, AND URGENT NEED FOR NEW TEACHERS, FIVE YEAR TRAINING PROGRAM FOR PTTC STAFF TO MA LEVEL APPEARS EXCESSIVE AT LEAST FOR NOV. RE SCIENCE FACULTY, QUESTION RAISED WHETHER IN LIGHT OF CURRENT FINANCING OF SANA UNIVERSITY CONSTRUCTION AND EQUIPMENT, IT WOULD BE MORE APPROPRIATE FOR YARG TO SEEK KUWAIT RATHER THAN AID FUNDING FOR ADDITIONAL SCIENCE EQUIPMENT.

5. WE ANTICIPATE THAT AS A MATTER OF COURSE, THE PORTIONS OF PID(S) CURRENTLY LACKING, SUCH AS INITIAL ENVIRONMENTAL EXAMINATION PER AID REG 12, BENEFICIARY ANALYSIS, IMPLEMENTATION PLAN, CONDITIONS PRECEDENT, AND RELATION OF PROJECT TO OVERALL COSS, WILL BE DEVELOPED IN THE PP(S). ALSO GIVEN THE MISSION'S COSS PROPOSAL TO MOVE HEAVILY INTO THE EDUCATION SECTOR AND THE OBVIOUS NEED FOR A GREAT DEAL OF ATTENTION TO MOVING PRESENT PROJECT(S) THROUGH DESIGN AND INTO IMPLEMENTATION, NEAC REQUESTS MISSION VIEWS RE HRD STAFFING.

6. NEAC AWARE OF MISSION/YARG INTENTION TO UTILIZE AN ACADEMIC INSTITUTION TO DEVELOP AND IMPLEMENT PROJECT(S) UNDER A COLLABORATIVE-ASSISTANCE ARRANGEMENT. THE NEAC SUPPORTS THIS CONCEPT AND IN ACCORDANCE WITH AID (P.R. 7-4-58) PROCEDURES WILL ESTABLISH AN EVALUATION PANEL TO MAKE APPROPRIATE DETERMINATION AS TO FEASIBILITY OF A COLLABORATIVE ASSISTANCE APPROACH. PANEL IS TO BE CHAIRED BY NE/TECH AND INCLUDES REPRESENTATIVES FROM DESK, DSB, CONTRACT MANAGEMENT, NE/GC. PANEL'S FUNCTIONS: (A) DETERMINE WHETHER COLLABORATIVE ASSISTANCE WITH AN EDUCATIONAL INSTITUTION REQUIRED AND JUSTIFIED AND, IF SO, (B) PREPARE EVALUATION AND SELECTION CRITERIA AND TECHNICAL SPECIFICATIONS AGAINST WHICH ELIGIBLE INSTITUTIONS ARE TO BE JUDGED; (C) PREPARE INITIAL SOURCE LIST OF POTENTIAL SOURCES KNOWN TO HAVE REQUIRED CAPABILITIES AND EXPERTISE; (D) EVALUATE SOURCE LIST AGAINST EVALUATION CRITERIA AND MAKE

WRITTEN DETERMINATION OF SOURCES CONSIDERED MOST CAPABLE; (E) PREPARE MEMORANDUM CITING LIKELY SOURCES AND REQUESTING CONTRACTING OFFICER TO PREPARE REQUEST

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OUTGOING
TELEGRAM

PAGE 02 OF 02 STATE 118450

FOR EXPRESSIONS OF INTEREST FROM THE SOURCES; (F) EVALUATE EXPRESSIONS OF INTEREST; (G) PREPARE WRITTEN RECOMMENDATION ASKING THAT NEGOTIATIONS COMMENCE WITH PREFERRED SOURCE. SER/CM REVIEWS RECOMMENDATIONS AND THEN OBTAINS COST AND OTHER DATA AND NEGOTIATES CONTRACT.

7. AS AN ADJUNCT TO YOUR RESPONSE PER PARA 3 ABOVE, WE WOULD APPRECIATE MISSION'S CABLED SUGGESTIONS RE PARA 6 (B) ABOVE FOR EVALUATION AND SELECTION CRITERIA, I.E., PRECISELY WHAT CAPABILITIES AND EXPERTISE IN WHAT AREAS ARE REQUIRED BY POTENTIAL SOURCES.

8. RE REF B, THE TYPE COLLABORATIVE ARRANGEMENT MISSION DESCRIBES--OPEN ENDED, SIMILAR TO IQC AND AND DESIGNED TO NOT PRECLUDE COLLABORATING INSTITUTION FROM ALSO BEING ELIGIBLE FOR EVENTUAL IMPLEMENTATION-- DOES NOT APPEAR FEASIBLE UNDER PRESENT PROCUREMENT REGULATIONS. WE ARE AGREEABLE, NOW-V-R, TO CONSIDERING A PROJECT PROPOSAL ALONG LINES INDICATED IF MISSION PREPARED TO OFFER CONTRACT COMPETITIVELY, IF THE SCOPE OF ACTIVITIES COULD BE IDENTIFIED WITH SOME CERTAINTY AND IF THE MISSION CAN ACCEPT POSSIBILITY THAT CONTRACTOR SELECTED WOULD NOT BE ELIGIBLE FOR OTHER PROJECTS THAT MIGHT GROW OUT OF THIS.

9. GIVEN NATURE PROJECT DESIGN PROCESS AND AID/W CONCERNS/ QUERIES EXPRESSED ABOVE, IT IS DESIRABLE USAID AND AID/W EXCHANGE VIEWS PRIOR TO AND DURING P; PREPARATION TO ASSURE ALL OF US ARE ON SAME WAVE LENGTH. INTERIM REPORT AT SOME STAGE OF DESIGN PROCESS WOULD BE USEFUL. DEPENDING ON MISSION RESPONSE THIS MESSAGE, IT MAY BE DESIRABLE TO DESIGN THE SCOPE OF THE SECTOR/PP(S) PREPARATION STUDY TO SERVE THE PURPOSE-- I.E., TO PROVIDE SECTOR ANALYSIS PLUS SUFFICIENT ANALYTIC/DESCRIPTIVE MATERIAL TO PROVIDE BASIS FOR RAPID FINALIZATION OF PPS AFTER REVIEW OF THE STUDY. VANCE

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OUTGOING
TELEGRAM

ANNEX G
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PAGE 01 OF 02 STATE 150550
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PPEA-01 GCNE-01 AADS-01 C-01 CHGT-02 CPP-01 CPS-02
DSST-01 ED-01 CHB-01 RELO-01 PDPR-01 /030 A4 8

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APPROVED BY AID/AA/NE:AVHITE
NE/TECH/HRST:TMCDONOUGH (DRAFT)
NE/TECH:LREADE (DRAFT)
NE/PD:RBELL (DRAFT)
NE/PD:BLANGMAID
GC/NE:TCARTER (DRAFT)
NE/NEIA:MHUNTINGTON (DRAFT)
SER/CH:FMOLTON (DRAFT)
PPC/PDPR:BSIDMAN
DESIRED DISTRIBUTION
ORIGIN NETC INFO CH 8 AANE NEDP NEPD NENA PPEA PPCE PDPR PPPB GC GC
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TAGS:

SUBJECT: BASIC EDUCATION DEVELOPMENT: 279-0053; CORE SUP-
PROJECT AND PRIMARY AND SCIENCE EDUCATION SUBPROJECT

REF: A. STATE 124284 B. SANA 3318

1. THE NEAR EAST ADVISORY COMMITTEE REVIEWED SUBJECT SUB-
PROJECTS ON MAY 22, 1988, WITH CHIEF-OF-PARTY, EMU, AND
CAMPUS PROJECT MANAGER, EMU, PRESENT. THE NEAC APPROVED
BOTH SUBPROJECTS. ISSUES COVERED IN BOTH SPS AND THOSE
SUBMITTED BY PROJECT REVIEW COMMITTEE CHAIRPERSON WERE DIS-
CUSSED. THOSE CONSIDERED OF PARTICULAR INTEREST AND
CONCERN ARE AS FOLLOWS:

A. DO SUFFICIENT LINKAGES/COOPERATION EXIST BETWEEN
MINISTRY OF EDUCATION AND SANA UNIVERSITY? THE PRIMARY
AND SCIENCE SP AMENDMENT WILL BE EXECUTED ON THE YARG SIDE
BY BOTH THE GOVERNMENT AND THE UNIVERSITY BUT WILL BE
IMPLEMENTED BY THE UNIVERSITY. THE PTI SP WILL BE PHASED
OVER FROM MOE IMPLEMENTATION TO SANA UNIVERSITY DURING
COURSE OF PROGRAM. ALTHOUGH MINIMUM DIFFICULTIES ARE
EXPECTED BECAUSE THE MINISTER OF EDUCATION IS ALSO PRESI-
DENT OF UNIVERSITY GOVERNING COUNCIL, SUBPROJECT

ACTIVITIES MUST BE IMPLEMENTED IN SUCH A WAY AS TO BUILD
COOPERATION BETWEEN THE TWO INSTITUTIONS. ANNUAL BASIC
EDUCATION DEVELOPMENT PROGRAM (BEDP) EVALUATIONS AND WORK-
PLAN REVIEWS AND PLANNED COUNCIL FOR BASIC EDUCATION
DEVELOPMENT SHOULD SUPPLY FORUMS FOR JOINT PLANNING. THE
HIGHER COMMISSION ON EDUCATION, WHEN ESTABLISHED, WOULD BE
ANOTHER ADVISORY GROUP TO EXAMINE AND HELP MODIFY THE
EDUCATION SECTOR IN YEMEN AND WORK CLOSELY WITH COUNCIL FOR
BED.

B. PRIMARY AND SCIENCE EDUCATION SPP SUGGESTS A SEPARATION
BETWEEN SCIENCE TEACHING METHODS AND SCIENCE CONTENT

COURSES. NEAC DISCUSSED DESIRABILITY OF HAVING SCIENCE
METHODS AND CONTENT COURSES CLOSELY RELATED, NOT TAUGHT AS
COMPLETELY SEPARATE ENTITIES. A SCIENCE LAB OUTSIDE THE
CLASSROOM WAS SUGGESTED AS AN EXCELLENT WAY TO LINK
CURRICULA TO BASIC PROBLEMS, THEREBY EVOLVING INTO A TYPE
OF FIELD SCIENCE.

C. JOINTLY DEVELOPED CRITERIA FOR PARTICIPANT SELECTION/
PARTICIPATION/YARG APPLICATION HAVE BEEN WORKING WELL IN
THE PTI SP. SINCE EMU HOLDS INDEPENDENT CONTROL OVER WHO
IS ADMITTED TO ITS PROGRAMS AND CAN REJECT ANY UNQUALIFIED
PARTICIPANTS, THERE SHOULD BE LITTLE OR NO DIFFICULTY UNDER
THESE TWO SPS.

D. MISSION SHOULD BE CONSTANTLY ALERT TO INSURE THE
EQUITABLE DISTRIBUTION OF DEVELOPMENT BENEFITS UNDER THESE
SUBPROJECTS SO THAT RURAL AREAS WILL BE ADEQUATELY COVERED,
THAT WOMEN ARE ENCOURAGED TO PARTICIPATE WHENEVER POSSIBLE,
AND THAT OUTREACH CAPABILITIES OF THE ACTIVITIES ARE
MAXIMIZED.

E. MISSION PARTICIPATION IN BED COUNCIL SHOULD BE THAT OF
AN EX OFFICIO NON-VOTING MEMBER ONLY. USAID SHOULD KEEP
ITSELF INFORMED OF BED COUNCIL ACTIVITIES BUT REFRAIN FROM
PARTICIPATION IN COUNCIL DECISIONMAKING.

F. CONSIDERABLE CONCERN WAS EXPRESSED ABOUT OTHER DONOR
INTERACTION, PERCEPTION OF DONOR ROLES, AND EMU'S WORKING
RELATIONSHIPS WITH OTHER DONOR-FINANCED EXPATRIATES. NEAC
REQUESTED THAT DONOR ASSISTANCE BE DISCUSSED IN EACH SPP TO
REVEAL THE LEVELS OF INFLUENCE, COOPERATION, AND RELATION-
SHIP TO THOSE SPS. FOR EXAMPLE, NEAC WAS PARTICULARLY
INTERESTED IN ROLE OF UNDP/UNESCO IN MOE AND KUWAIT IN SANA
UNIVERSITY. AID/W AND EMU WILL ATTEMPT TO ADDRESS THIS
ISSUE IN BOTH SPPS.

G. NEAC DISCUSSED QUESTION OF FIELD SUPPORT FOR VEHICLES
AND CONCLUDED THAT MISSION, EMU AND CID SHOULD DEVELOP A
PROCEDURE WHEREBY EMU COULD OBTAIN VEHICLE MAINTENANCE
SERVICES FROM SOON-TO-BE-DEVELOPED CID VEHICLE MAINTENANCE
FACILITY ON A REIMBURSEMENT BASIS.

H. STATEMENT CONCERNING UNIVERSAL LITERACY IN YEMEN SHOULD
BE REVISED (SEE P. 27 OF CORE SP). IT DOES NOT REFLECT
ACTUAL SITUATION OR EXPRESS A REALISTIC GOAL. EMU AND
NE/TECH WILL REVISE PARAGRAPH AND CABLE BY SEPTEL.

I. ADEQUACY OF YARG BUDGET PLANNING AND ATTENTION TO NEW
SOURCES OF FINANCING AT LOCAL AND NATIONAL LEVELS TO MEET
COSTS OF EXPANSION OF BASIC EDUCATIONAL SYSTEM IS IMPLICIT
IN PROJECT GOAL. CONCLUSION WAS THAT LONG-TERM AND ANNUAL
PROJECT WORKPLANS SHOULD COVER IN DETAIL THE BUDGETARY
LEVELS REQUIRED TO ACHIEVE PROJECT GOALS AND SPECIFICALLY
ADDRESS ALTERNATIVES FOR GENERATING NEEDED RESOURCES, IN-
CLUDING OPPORTUNITIES FOR LOCAL FINANCING AND FEEDBACK FOR
EDUCATIONAL SERVICES AS WELL AS NATIONAL TAX AND USE FOR
SERVICE PROGRAMS.

2. FOLLOWING ITEMS (SECTIONS) WILL REQUIRE MISSION ACTION,
COMMENTS OR CLEARANCE BEFORE SUBPROJECTS CAN BE AUTHORIZED:

A. SEPARATE YARG LETTERS OF REQUEST FOR ASSISTANCE ARE
NECESSARY FOR EACH SP AS REQUESTED IN REF A. WHEN MISSION
HAS RECEIVED THEM, PLEASE NOTIFY AID/W BY CABLE, INCLUDING
TEXT OF EACH. UPON RECEIPT, COPIES OF CABLED TEXT WILL BE
INCLUDED IN AUTHORIZATION PACKAGES. FORMAL LETTERS WILL
LATER BE INCLUDED IN PRINTED COPIES OF SPPS.

B. SEPARATE STATUTORY CHECKLISTS ARE NEEDED FOR EACH SPP
AS REQUESTED IN REF A. TO SAVE TIME, NE/TECH WILL PREPARE

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OUTGOING
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PAGE 02 OF 02 STATE 150550
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EDUCATION SUBPROJECT AS FOLLOWS:

C. IN PRIMARY AND SCIENCE SP, THERE IS NO SUMMARY BUDGET FOR PROPOSED COMMODITY/EQUIPMENT TO SHOW HOW TOTAL FIGURES WERE COMPUTED. THESE BASIC DATA MUST BE INCLUDED IN SPP PRIOR TO AUTHORIZATION OF FUNDS. LOCAL COST ANALYSIS DOES NOT SHOW ANY ADDITIONAL AMOUNT FOR COMMODITIES. ALTHOUGH AID IS AWARE OF MATERIALS AND EQUIPMENT LISTS IN UNATTACHED ANNEXES FOR SCIENCE AND EDUCATION LABS, AID WILL REQUIRE ADDITION OF A COVENANT IN THE PROJECT AGREEMENT REQUIRING THE GRANTEE TO SUBMIT A DETAILED LISTING OF NECESSARY COMMODITIES, TOGETHER WITH A PLAN FOR PROCUREMENT OF THOSE COMMODITIES, WITHIN NINE MONTHS FROM DATE OF SIGNING OF PRIMARY AND SCIENCE EDUCATION SUBPROJECT AMENDMENT. A SUMMARY BUDGET USING DATA FROM UNATTACHED ANNEXES WILL ALSO BE ADDED TO SPP FINANCIAL PLAN, SHOWING BASIS FOR TOTAL COMMODITY/EQUIPMENT COST OF DOLLARS 0.9 MILLION.

D. BECAUSE OF INACCURATE COMPUTATION OF INFLATION FACTOR AND HOST COUNTRY CONTRIBUTIONS, BUDGET FIGURES IN BOTH SPPS NEED REVISION. YARG INPUTS SHOULD BE SHOWN ON AN SP-BY-SP BASIS. REVISED LOP COSTS ARE DOLLARS 8,347,000 FOR CORE AND DOLLARS 9,111,500 FOR PRIMARY AND SCIENCE EDUCATION. AID/W WILL MAKE NECESSARY REVISIONS ON BUDGET PAGES IN BOTH SPPS AND REVISE FACESHEETS TO REFLECT RECOMPUTED FX AND I/C FIGURES.

E. NEAC SUGGESTED THAT MISSION ASSURE THAT FIRST YEAR WORK-PLAN INCLUDE PROVISIONS FOR DEVELOPMENT OF A PROCEDURE TO ASSURE THAT YARG AND AID INPUTS FOR SUPPORT COSTS IN CORE SPP THAT RELATE TO OTHER SPS CAN BE IDENTIFIED. THOSE COSTS SHOULD THEN BE INCLUDED IN COST FIGURES FOR SPS WHEN SUBMITTED FOR APPROVAL/AUTHORIZATION.

3. SINCE THERE WERE NO CONDITIONS PRECEDENT OR COVENANTS IN CORE SUBPROJECT, AID/W RECOMMENDS THE FOLLOWING:

A. CONDITIONS PRECEDENT: THE YARG WILL PROVIDE (1) A LIST OF NAMES OF PERSONS WHO WILL ACT AS REPRESENTATIVES OF THE YARG FOR THIS SP, TOGETHER WITH EVIDENCE OF THEIR AUTHORITY AND SPECIMEN SIGNATURE OF EACH; (2) A LIST OF PROGRAM PARTICIPANTS WHO WILL BEGIN PARTICIPANT TRAINING UNDER CORE SP IN FY 81; (3) EVIDENCE OF AVAILABILITY OF SUFFICIENT OFFICE AND CLASSROOM SPACE AND FACILITIES NECESSARY TO CARRY OUT THE SP ACTIVITIES; (4) SANA UNIVERSITY/ MINISTRY OF EDUCATION DESIGNATED COUNTERPARTS TO WORK WITH

CORE SP TECHNICIANS; AND (5) EVIDENCE OF ESTABLISHMENT OF PARTICIPANT SELECTION PROCEDURES, ACCEPTABLE TO MISSION, EMU, DEAN OF FACULTY OF EDUCATION, AND SANA UNIVERSITY.

B. SPECIAL COVENANTS FOR IMPLEMENTATION WILL INCLUDE THE FOLLOWING: THE YARG, AFTER CONSULTATION WITH MISSION, (1) SHALL GRANT APPROPRIATE SALARY INCREASES TO PROGRAM PARTICIPANTS UPON NOTIFICATION OF SUCCESSFUL COMPLETION OF THE MA OR PHD DEGREE; (2) HOLD ALL DEGREE DOCUMENTS IN ORDER TO GUARANTEE THAT PARTICIPANTS WILL COMPLETE THEIR SERVICE AGREEMENT; (3) REQUIRE AT LEAST FIVE YEARS OF SERVICE TO MINISTRY OF EDUCATION OR TO SANA UNIVERSITY FOLLOWING LONG-TERM TRAINING PROGRAMS; (4) CONTINUE FULL SALARIES AND BENEFITS TO PARTICIPANTS DURING ALL PHASES OF SUBPROJECT; (5) SET UP A BASIC EDUCATION DEVELOPMENT COUNCIL TO ADVISE POLICY ON ALL SUBPROJECTS; (6) AGREE TO DISCUSS WITH MISSION VARIOUS DIFFERENT (ADDITIONAL) ALTERNATIVES AND INCENTIVES FOR RETAINING AND/OR ASSIGNING PROGRAM PARTICIPANTS; AND (7) SHALL ENDEAVOR, TO MAXIMUM EXTENT POSSIBLE, TO INCREASE THE PARTICIPATION OF WOMEN IN EVERY PHASE OF SUBPROJECT.

4. TWO COVENANTS WERE ADDED TO THE PRIMARY AND SCIENCE

A. A LONG RANGE PLAN FOR DEVELOPMENT OF THE FACULTY OF EDUCATION ACCEPTABLE TO AID WILL BE APPROVED BY SANA UNIVERSITY WITHIN NINE MONTHS FROM THE DATE OF THE ARRIVAL OF THE LONG-TERM FACULTY OF EDUCATION ADVISOR.

B. UNLESS AID OTHERWISE AGREES IN WRITING, THE GRANTEE, WITHIN NINE MONTHS FROM DATE OF SIGNING THE PROJECT GRANT AGREEMENT MAKING FUNDS AVAILABLE FOR THE PRIMARY AND SCIENCE EDUCATION SUBPROJECT, SHALL FURNISH A DETAILED EQUIPMENT PROCUREMENT PLAN WITH COST ESTIMATES BASED ON PROCUREMENT FOR LAB FACILITIES (LIFE SCIENCES, PHYSICAL SCIENCES, CURRICULUM/INSTRUCTIONAL MATERIALS) IN FORM AND SUBSTANCE SATISFACTORY TO AID.

5. AID/W WILL MAKE EVERY EFFORT TO PREPARE AUTHORIZATION PACKAGES ASAP. REQUEST MISSION CABLE COMMENTS/CONCURRENCI ASAP. MUSKIE

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ANNEX H

Project Identification Document

PID Faculty of Science Yemen - 053

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT IDENTIFICATION DOCUMENT FACESHEET TO BE COMPLETED BY ORIGINATING OFFICE	1. TRANSACTION CODE <input type="checkbox"/> A = ADD <input type="checkbox"/> C = CHANGE <input type="checkbox"/> D = DELETE	PID 2. DOCUMENT CODE 1
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COUNTRY/ENTITY Yemen Arab Republic	4. DOCUMENT REVISION NUMBER
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7. PROJECT TITLE (MAXIMUM 40 CHARACTERS) Improvement of the Faculty of Science	

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9. ESTIMATED FY OF AUTHORIZATION/OBLIGATION a. INITIAL FY: 79 b. FINAL FY: 79	10. ESTIMATED COSTS (CONTINUED) FUNDING SOURCE: 2,675 A. AID APPROPRIATED: 2,675 B. OTHER: 910 C. FIRST COUNTRY: 910 D. OTHER DONOR(S): TOTAL: 3,585
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11. PROPOSED BUDGET AID APPROPRIATED FUNDS (\$000)							
A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		C. FIRST FY 79		LIFE OF PROJECT	
		C. GRANT	D. LOAN	F. GRANT	G. LOAN	H. GRANT	I. LOAN
1) E/HR	620			2,675		2,675	
2)							
3)							
4)							
TOTAL				2,675		2,675	

12. SECONDARY TECHNICAL CODES (maximum six codes of three positions each)
640 | 680

13. SPECIAL CONCERNS CODES (MAXIMUM SIX CODES OF FOUR POSITIONS EACH)
EQTY | TNG | PART

14. SECONDARY PURPOSE CODE
NA

PROJECT GOAL (MAXIMUM 240 CHARACTERS)
The improvement of the basic education system throughout Yemen

PROJECT PURPOSE (MAXIMUM 400 CHARACTERS)
To improve the capability of the University of Sana's Faculty of Science to prepare secondary school science teachers

15. PLANNING RESOURCE REQUIREMENTS (staff/funds)
Feasibility study in April-May including assistance in PP preparation. To be funded from regional PD&S

16. ORIGINATING OFFICE CLEARANCE Name: <i>R. Huemann</i> Director, USAID/Yemen Date Signed: MAR 22 1978	17. DATE DOCUMENT RECEIVED: AID/A, or FOR AID/A DOCUMENTS. DATE OF DISTRIBUTION
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IMPROVEMENT OF THE FACULTY OF SCIENCE-0053

Problem/Background

Public education in Yemen, as a social institution, is still in its infancy having only been partly operational over the past few years. It has not had either the time or ability to develop a system by which education could become an effective instrument for social change. Although foreign scholarships have been available from a number of donors--the United States significantly among them--the number of students to date who have completed their training programs, and returned to Yemen, has been insufficient to provide the infrastructure of a basic education system.

This fact is nowhere more evident than in the area of the sciences in all fields and at all levels. With the poor, both rural and urban, there is almost a complete lack of understanding of modern scientific principles as they deal with areas such as personal hygiene, food, agriculture, health, nutrition, maternal health and child care. Even for the ten percent of school age population who receive some type of formal education, (almost all males) this training consists in general of antiquated, theoretical instruction with almost no practical (laboratory) work in the basic sciences.

An analysis of human resources development in Yemen leads to the conclusion that if the country is to take its place in the modern world it must establish an effective system of educating its people in the basic principles of modern science. Such a program of social change is the responsibility of an educational system and should be undertaken primarily by and through the schools. An essential element in the system of basic education is the capability to provide adequate and relevant teacher education. Because of the critical role of basic education to undergird advancement in areas which accelerate development, e.g., agriculture, medicine, pre-engineering, applied science and technology, this project will be directed at the improvement of curriculum and instruction in Yemen's only facility which prepares teachers of secondary school science. This facility is Sanaa University Faculty of Science which cooperates with the Faculty of Education. The project is expected to produce positive outcomes such as the following:

1. As instructors in the Faculty of Science become better prepared in scientific knowledge, practical work in the laboratory, and the scientific method of problem solving, their improved knowledge, understanding and skills will have an immediate impact on their students, and these students will be teachers of science in secondary schools.
2. As the quality of teacher preparation and performance and the content of curriculum in secondary school science improve, there will be an improvement in the understanding

and skills of the secondary school students and those with whom they interact, particularly their families, especially in those practices that concern health, agriculture and income production.

USAID Program Strategy

This project is designed to assist Yemen's human resources development through the improved basic science education, founded on a modern, need-oriented program to prepare secondary school teachers of science. The initial thrust of this activity will be the development of a well-prepared science faculty. This faculty will provide the locus for development of improved secondary school science teachers trained in a new curriculum.

The premise here is that human resource potential can be improved most effectively through educational programs and in addition, cultural change, which is a requisite supporting factor, can be best influenced in this way. In a developing country the modern governmental/foreign donor facilities which are present are often more accessible to the rich than to the poor. A nation's schools are perhaps the only institutions through which a large part of its poorest population can be reached. By the infusion of modern scientific knowledge, principles and practices, the poor will have increased access to the economy, to the mainstream of life, and to cultural advancement. Experience indicates that social and economic advancement and upward mobility are directly related to quality curriculum in which science plays the basic role.

Project Description

The purpose of this project is to develop an improved undergraduate program of curriculum and instruction in Sanaa University's Faculty of Science, Yemen's only capability for the preparation of secondary school teachers of science. To date, primarily due to the extreme youth of the University, the faculty is exclusively staffed by foreign professors. This staff is composed of 27 members, all possessing Ph.Ds--some from the United States. Most of these degrees, however, were earned at least a decade ago and opportunities to stay abreast of current scientific thought have been extremely limited.

As a result there exists a largely theoretical curriculum not sufficiently relevant to the needs of a developing country. The concept that all science education needs are centered around appropriate laboratory experiences has yet to be realized. The three existing laboratories (physics, biology and chemistry) are inadequate with respect to staffing and equipment, and the laboratory program is not sufficiently coordinated with course content. Through this project a strong direct effect will be produced upon the teaching of secondary school science and thereby upon the entire educational system because of the crucial role of basic science in education.

The project will consist of two full-time consultants for a period of two years, required laboratory equipment for at least four science disciplines, and supporting library material, as well as participant training. The specialists will be in daily contact with members and students of the Faculty of Science. They will provide consultative services in areas essential to overall development of the faculty including administration, course offerings, content, sequence, examinations and equipment utilization in the laboratories. Decisions related to commodity procurement, i.e., type, amount and other-donor inputs will be addressed in the Project Paper.

The overall objective relates to a permanently improved faculty that will produce well-prepared science teachers for secondary schools. In FY 79, funding will be made available for a total of 20 participants to be trained at the Master's Degree level to become members of the science faculty. These returnees will serve as a nucleus of an increasingly Yemeni staff and will be capable of institutionalizing within the faculty a capability for science curriculum development at pre-university levels. Particular attention in this regard, would be given to the improvement of secondary school science.

Issues

1. Is the Government of the Yemen Arab Republic aware of the need for this project and committed to its implementation?

Comment - Dr. Eryani, who is both Minister of Education and President of Sanaa University, identified teacher training and preparation of teaching materials as two of the three greatest needs of Yemen's educational system. Furthermore, he stated that the areas of science and mathematics offer the greatest potential for initial work in curriculum development. Similarly, the Dean and senior professors in the Faculty of Science believe that a project of this type is essential to enable the Science Faculty to provide adequate preparation for secondary school teachers of science.

2. Does assistance to Sanaa University Faculty of Science address the needs of the poor?

Comment - Based on our CDSS, in order to maximize development of human resource potential in Yemen, effort must be made to improve the primary schools where we realize the percentage of poor is greater than in the secondary schools or in the university.

This will require a dual approach; one--improvement of knowledge and content of basic science curriculum and two, implementation of this improved curriculum, methodology and instructional materials in the schools. Because science is so crucial vis-a-vis the development of the country and because the content of modern sciences changes so rapidly, there must be an in-country capability to which teacher educators and teachers can turn to keep abreast of new knowledge and technologies. We believe this capability resides only with the Science Faculty and

their ability to prepare secondary school science teachers.

Furthermore, as stated earlier, basic science is essential to undergird the key areas of development -- agriculture, engineering, health, nutrition, applied science and technology. In addition, improved knowledge of science relates directly to every day life at home as secondary school students interact with their immediate families in terms of hygiene, health, nutrition and child care. In Yemen, people are not poor, for the most part, in monetary terms, but in knowledge. In this sense, the project will have a direct effect on the quality of life in the home of secondary school students, regardless of family income.

3. Why implement this project through the Faculty of Science rather than the Faculty of Education?

Comment - The faculty of Education relies entirely upon the other faculties for instruction in the individual disciplines. The Faculty of Education has no full-time faculty members of its own, other than the Dean. In-depth discussions have been held with him, and he will be actively involved in implementation of the project.

4. Will the Yemen Arab Republic Government's commitment to the project idea continue when substantial expenditures become necessary to implement a laboratory/experimental approach to science education?

Comment - Arab OPEC countries will undoubtedly continue to give financial support directly to Sanaa University. The real issue relates to the spending of money in the most beneficial manner. USAID is convinced that the Ministry of Education and University officials recognize their merits of this project and it will receive the necessary financial support.

5. Will there be an adequate supply of university students to receive training under the project?

Comment - In the Faculty of Science there are currently 300 students in the education stream, i.e., prospective secondary school science teachers. In June 1978, the Faculty of Science will graduate 20 secondary school science teachers. The number of graduates will increase by 20 to 40 each year for the next few years. In relation to the number of secondary schools in existence and planned, this output will be more than sufficient for the purpose of the project.

Project Development

This document should be reviewed by AID/Washington during late March/early April. Assuming approval, we propose contracting with AUB to examine the capability of the Science Faculty to prepare secondary school science teachers for the unique needs of Yemen. Depending on the outcome of the study, a decision will be made on whether to proceed with the project. If the decision is positive; TDY assistance from AID/W will probably be required. A definitive schedule of project implementation will be included in the PP.

Financial Plan (\$000)

	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>Total</u>
<u>AID (all contract financed)</u>				2,675
Technical Services/Follow-on consultancies/Annual evaluations	700	-	-	700
Commodities/instruction materials, exact requirements to be addressed by the Project Paper team	1,300	-	-	1,300
Participants	600			600
Other Costs	75			75
<u>Host Country</u>				<u>910</u>
Personnel salaries	100	300	300	700
Office related	15	20	25	60
Housing	30	35	40	105
Other	10	15	20	<u>45</u>
	Total Project Costs			3,585

IIE Statement

This project will not have an adverse or harmful effect on the physical or human environment in Yemen or in the biosphere.

WID Statement

This project will help modernize the Science Faculty and better train secondary school science teachers. To the extent that women are

graduates and students of the secondary schools, they will directly benefit from the project. However, because of modernizing trends in Yemen and projects like 0054 Teacher Training for Primary Schools the number of women both going to secondary schools and Sanaa University is steadily increasing.

LOG FRAME

Sector Goal

Improvement of the basic education system throughout Yemen.

Objectively Verifiable Indicators:

Increased income, access and social mobility of secondary school students who have received improved science teaching made possible by this project's inputs into the Faculty of Science vs. those students who have not received this improved instruction.

Means of Verification:

A random sampling comparing the lives of those who have received the improved science teaching vs. those who have not.

Assumption:

That basic science education does have a beneficial impact on the quality of one's life.

Project Purpose

To improve the capability of Sanaa University Faculty of Science to prepare secondary school science teachers.

Objectively Verifiable Indicators:

1. The capability, qualifications, publications and experience plus examples of contributions of faculty members outside the scope of their regular University duties to improve science teaching at pre-university levels in Yemen.
2. The level of awareness, knowledge and ability to teach of graduating science teachers as compared to earlier graduates.

Means of Verification:

Evaluation by an independent team (similar to accreditation teams used in U.S. universities) at the end of each year for four years

Assumptions:

1. That an improved undergraduate program including course content and laboratory work will result in more effective faculty performance.
2. That such improvements will increase teacher and student interest and performance.
3. That ability to use new course content, the scientific method, capability and skills required in practical work and in the laboratory can be improved, and that there is a carryover into other subject areas.

Outputs

1. Improved course content
2. Improved library materials
3. Improved laboratory, instructional and experimental program
4. Increase in practical work
5. Improved examination and evaluation program
6. Effective coordination of the above to produce better qualified more motivated graduates
7. M.A. trained professional Yemeni science educators to staff the Faculty of Science

Magnitude of Outputs:

The above outputs will be produced in at least four departments of the Science Faculty, e.g., mathematics, chemistry, physics, biology and earth science. The question of magnitude will be further addressed by the feasibility team.

Means of Verification:

Contractor reports, monitoring and the annual evaluation by an independent team.

Assumptions:

1. That the Contractor can provide extremely dedicated, professional personnel well qualified, experienced and effective in applied science.
2. That the Science Faculty will work effectively with the project consultants.
3. That Yemeni Master's Degree holders will return to staff the Faculty of Science.

<u>Inputs</u>	<u>Implementation Target</u>
<u>USAID</u>	
Contractor specialists	2 a year for 4 years
Follow-on consultancies	As required during 18 months after contractor services cease
Annual evaluation	1 a year for 4 years
Master's Degrees	20
<u>Commodities</u>	
Lab equipment	As required
Teaching materials	As required
Library material	As required
Other costs	As required
<u>YARG</u>	
Personnel salaries	5 for first year and 30 by 1981
Office related	As required
Housing	As required
Text books and reference materials	As required
Other	As required

ANNEX I

CRITERIA FOR SELECTION OF PROGRAM PARTICIPANTS

Annex I

Criteria for Selection of Program Participants

1. Well qualified program participants will be selected among both men and women candidates;
2. Program participants must be Yemeni; each must have at least an earned baccalaureate degree from a university; first consideration will be given to those who hold Master's degrees;
3. As a candidate for inclusion in the program, participants must have had a minimum of one year teaching experience;
4. Applicants will be screened for academic competency. Both academic records from Sanaa University and recommendations from the University faculty will be used in the selection process;
5. Applicants will be screened for English language proficiency; all other things being equal, those with the best English will be selected;
6. Participants will be screened for commitment to career teaching in Yemen; and
7. The final selection of program participants will reflect the needs for specially trained personnel within the primary and science education sector of the Yemen Arab Republic;
8. The endorsement of the Deans of the Faculty of Science and of the Faculty of Education at Sanaa University will be necessary as a condition for final selection of program participants. In addition, endorsement by the Chief-of-Party of the Basic Education Development Project of USAID/ Yemen and Eastern Michigan University will be required.

ANNEX J

SOCIAL SOUNDNESS ANALYSIS

ANNEX J

SOCIAL SOUNDNESS

The origination of the current overall Basic Education Development Project may be traced to several sources, including the identification of educational needs by the Yemen Arab Republic Ministry of Education, a proposal from UNESCO/UNDP field officers in Yemen, a draft proposal to fulfill basic education needs from AID/Yemen, and the field testing and design of the Eastern Michigan University design team. The data base from which the EMU design team began its progress in the formulation of effective strategies for encouraging basic education improvement in Yemen is one that has accumulated through the efforts of a variety of independent researches. Although objectivity is difficult to achieve whenever one deals with social goals, the very independence of observers more nearly guarantees objectivity.

Data employed in the design of the Basic Education Development Project were generated by, among others, World Bank researchers, UNESCO education planning specialists, Yemen Arab Republic Central Planning Office personnel, Ministry of Education employees, USAID/YEMEN research and design personnel and the Eastern Michigan University team in Yemen. Much of the data collected previous to fielding the EMU team were only indirectly relevant to the needs of a Basic Education Design and only tangentially addressed the question of soundness within the Yemen social milieu. Besides attempting to synthesize and bring up to date the information extant on education and educational needs in Yemen, the EMU team also made a serious collaborative attempt to assess the advisability of proceeding with the purposes and design developed within this project paper. The collaboration mentioned above refers to the assistance and advice that were available from USAID/Yemen.

With the advice of AID personnel in Yemen, avenues of information were explored that helped to complete the EMU team's efforts to achieve a socially relevant and acceptable design. There is no doubt that the sort of educational development project herein described is bound to elicit social change. That has always been an underlying assumption of development aid. What is being approached in this particular project is the long term value of social sensitivity in the design of development aid. The team was fortunate in being able to refer to written documentation of social needs in Yemen present in the USAID document collection at Sanaa. In addition team members conferred with USAID/Yemen personnel whose collective experience in the impacts of development in general and the particular situation in Yemen were helpful in the formulation of some of the team's procedures.

The published data were reviewed by the team, after which individuals were asked to submit questions which they felt had either been unanswered or only partly answered. The team members were instructed to try to design questions that transcended purely numerical considerations; questions that lead the respondent to carefully consider his

answer. In particular the team attempted to design questions that approached concerns about current educational efficacy, the nature of current educational successes and failures, the advisability of change, the directions of change, priorities of educational development, the nature of capital and service support of education, the perceived value of both formal and nonformal education, and sex differentiated roles in education. A crucial element in the design of the questionnaires was the necessity to pose the questions in such a way as to avoid predisposing the respondent.

One set of questionnaires was field-tested in two schools, followed by a second visit to the same schools to double check the information and the acceptability of the questions. As a result of the field-test and follow-up, some questions were deleted and others modified. Several team members then arranged to meet with Dr. D. Ponasik (Cultural Anthropologist) of the USAID/Yemen staff to consult with her on the questionnaire design. The team incorporated Dr. Ponasik's observations and advice in the questionnaires.

A total of three interview schedules were designed; one for schools, one for Teacher Training Institutes, and the third for Local Development Associations. In addition to personnel targeted in these questionnaires, many of the questions were submitted in more informal circumstances to Ministry of Education personnel, Sanaa University faculty and students, and Confederation of Yemeni Development Associations employees. The team's rationale for asking similar questions of these various groups was based on the concern each has with education in Yemen. It is clear that primary and secondary schools, Teacher Training Institutes, Sanaa University and the Ministry of Education have vital interests in the state of education in Yemen, but what might be less clear to the reader is the nature of interest and interaction in education that the Local Development Associations have demonstrated. In the data analysis section below this relationship will be further explored.

In the questionnaires, the team built in a number of cross-cutting questions which served as nexus points for the common educational interests of the respondents. An example which occurred in the several sections of the same questionnaire as well as in the other questionnaires is the question: "If you could change one thing in the school to help students, what would that one thing be?" All questions were administered in Arabic by at least one of the team's Arabic speakers, and great care was taken to stress in the question that one thing, the most important in the view of the respondent, was being solicited. The team was pleased to receive thoughtful, carefully conceived responses to this particular question. Often the respondent would give several directions of change that he or she perceived as important (and these were noted by the team), but the interviewers persisted in stressing the need for a first priority statement. In every case the interviewer's patience was rewarded. Another question which was asked in nearly the same words in each questionnaire was: "Do you think that what the children learn in school will help them when they leave school?" This was followed by the question: "Are there other courses that would benefit the children? If so what are they?" When asked of the Teacher Training Institutes, the

question was modified. Copies of the information questionnaires are attached as Annex "K" of the PTTI Sub-project.

After preliminary testing of the interview schedules in the area of Sanaa and consulting with USAID/Yemen's specialist in social soundness analysis, the EMU team sent a delegation around the country to administer the questionnaires as well as to informally interview. The team was greatly assisted in its efforts by the Ministry of Education. Mr. Ibrahim Hafuth of the Ministry, whose position entails inservice operations accompanied the team members. Mr. Hafuth managed to introduce us to individuals, in every place we visited, who were knowledgeable and willing to answer our questions. The route of our visitations proceeded from Sanaa to Hodeida, to Taiz, back to Sanaa, occurred between 18 May and 22 May, 1979 inclusive. The team's visitation schedule included five Teacher Training Institutes, nine primary and secondary schools, two Local Development Associations, Governorate education personnel, an agricultural demonstration farm and the Governor of Taiz. Without exception the team members were received as professionals whose research aims deserved support.

Another purpose in team visitations was to inform people, at every level we approached, of the development of the EMU/AID Basic Education Development Project and to solicit their input in the overall soundness of the project, but at higher levels of the Governorate hierarchy notice had been received at least by telephone. When the goals of the project were detailed and carefully explained, expressions of interest and requests for application materials were immediately forthcoming.

It is the Yemen Arab Republic Government's intention to provide primary schooling for all males and females in Yemen by the year 2006. This goal is highly laudable given an approximate illiteracy rate of 85 percent in the country. Since the Revolution of 1962, great strides have been made but much remains to be done. All the published data, as well as reports sponsored by AID and UNESCO appear to agree on at least one point; basic education can be significantly upgraded through more rigorous and relevant teacher training, inservice capability expansion, improved non-formal educational opportunities, educational administration training, as well as the development of on-going educational research facilities. The Yemen Ministry of Education and Sanaa University both appear to be committed to the ideals of the Education Sector of the Five Year Plan.

Lower in the hierarchy of social policy articulation, the Local Development Associations have also become integrally involved in economic development activities. The LDAs' concerns and activities have generally fallen within five sectors: (1) Economic, (2) Social, (3) Educational, (4) Agricultural, and (5) Health. It is with the following goals in the Education sector that LDAs have been most centrally concerned:

- (a) To identify appropriate methods of adult education and occupational rehabilitation,

- (b) To participate in construction of schools and provide teachers, books, and equipment, in cooperation with the Ministry of Education,
- (c) To establish dormitories where necessary, in cooperation with the Ministry of Education,
- (d) To encourage all efforts in the education sector, including provision of specialized education for local cooperative workers, either locally or outside with cooperation of the Ministry of Education.

(J. W. Green 1975:58)

It is clear from the investment of time and local money (see Table) through the Local Development Associations that education is highly valued at the grass roots level. Within the time period between 1963 and 1977, LDA s were responsible (in part, i.e., funding is shared with local contributions and the central government) for the construction of 580 schools, including 1596 classrooms nationwide. In 1975, Green commented that "the number of new schools presently constructed by the LDA s and the oil states appears to have exceeded the capacity of the Ministry of Education to supply trained Yemeni teachers, causing the large scale importation of foreign teachers, mostly Egyptians. Even so, insufficient numbers are available to man all of the new schools." (J. W. Green 1975:20) Exhibiting once again the ability to innovate, the LDA s have responded to teacher shortages by building housing with water supplies for teachers (again largely foreign) as well as supplementing teacher salaries in rural and remote areas in order to entice teachers to those areas. (N.B.! - data illustrating this trend are presently being assembled under the supervision of Mr. Ali Mohammed el-Emad, Director of LDA s at the Confederation of Yemeni Development Associations. When completed the data will be appended to this document).

What is patently evident from all the data already developed is that education is seen at all levels as being a necessary precursor to sustained economic development in Yemen. Because the need has been so great, expatriot teachers have been brought in and have played an important intermediary role. Seeking to achieve self sufficiency, in the long run, the Yemenis are now attempting to increase their in-country training capabilities. It is in this effort that the EMU team has sought to assess the sort of technical assistance it can offer. In designing strategies to serve Yemeni educational needs, the team made use of already developed data bases, but also carried on a number of formal and informal interview sessions. It is to the results of these sessions that this report now turns.

The EMU team was particularly interested in determining educational needs as perceived by teachers and directors who are presently active in the schools and Teacher Trainer Institutes. A word of

caution may be necessary here. One incontrovertible truth, that was demonstrated to the team while making its visitation, is that the basic research necessary to plan for continuous and sustained educational development in Yemen has not yet been done. The sampling that the team performed cannot pretend to be random, but it certainly offers a wide area distribution of what the team perceived to be independent observation. One of the team's design features, as illustrated in the Project Paper, is the creation of a basic educational research capability which can be transferred to Yemeni nationals during the life of the project.

When asked about the one change they would implement given the ability to do so, the directors of schools gave an interesting range of assessments. One statement which was repeated with variations was that better qualified teachers were required. The ways to provide more qualified teachers were believed to include more training and higher teacher salaries. The differential between expatriot and Yemeni teacher salaries appeared to be a deterrent to attracting better qualified Yemeni teachers. The same question posed to Teacher Training Institute personnel was most often answered with a statement about raising teacher salaries. Upon elaboration of the answer, it was clear that this was perceived as a way to retain better teachers. In both Hodeida and Taiz the team was told that teacher cooperation was the most necessary ingredient. This was seen as especially valuable in the introduction of new, young Yemeni administrators into the system. Physical facility improvements were also mentioned as important but the team consensus is that the three most important variables mentioned as possible changes were (1) higher qualified teachers, (2) raising teacher salaries (particularly Yemeni teachers), and (3) encouraging cooperation among teachers.

The question about one change implemented in the schools if possible, when posed to the LDA officers, was referred to school officials. Upon further elaboration it became clear that the LDA s tried to avoid prescribing change in the schools but focussed their attention on facilitating the implementation of policy generated by the cooperation of the schools and the Ministry of Education. It was the interpretation of the EMU team that a continued contact with the LDA s in the future would be fruitful in terms of assessing the evolution of locally perceived educational needs.

Many of the collected statistics indicate that students who enroll, too often drop out. In the team's visitations it tried to determine the reasons students leave school. The responses from primary and secondary schools were different for why boys leave compared to why girls leave. Essentially boys appear to leave school because they can see no financial advantage of remaining. They perceive work as more important than school and are often encouraged by their fathers in this view. The most often recorded response regarding girl school-leavers can be summed up as: "When girls have learned enough to be able to pray, they are encouraged by their families to leave school." The responses given to the school leaving questions illustrate the necessity of educating two generations synchronously. One interesting response vis a

vis encouraging girls to attend school was that an improved water supply would free girls from the time consuming task of bringing water from the well and therefore more time would be available to choose school attendance; increased opportunity, yes, increased motivation, not necessarily.

There is a corps of parents who are active supporters of schools in Yemen, but interestingly they appear to have been galvanized into purposeful action only in those schools which had the most dynamic and active principals (and teachers). The principal can play an important and effective role in linking the school to the community. In several schools that we visited this linkage was expressed through the LDA. The kind of aid offered by parents (whether through the LDA, or not) may be listed in three categories: school supplies, teacher salary supplements, and student aid. In discussions with LDA members at Beit al Faquih, the team discovered that the members there had allocated money to aid rural students who needed transportation to attend secondary school in the towns. The need was expressed to the local community and they responded positively.

Among the fourteen different educational institutions visited by the team a staff survey was also conducted. In the five Teacher Training Institutes, the team enumerated 117 total instructional/administrative staff. Of that number 106 or 90.6 percent were expatriots. The Yemeni teacher/administrators numbered 11 or 9.4 percent of the total. It is this large differential that the Teacher Trainer Sub-Project seeks to reduce. While visiting the primary and secondary schools the team solicited information on number of years teaching experience the school administrators have had. Totalling for eight of the nine schools in which the administrators were present the collective number of years they had been involved in education was 83.5. The average number of years in teaching was 10.4. As a general rule those administrators with more than the average years of service had certification only at the secondary diploma level. Those with less time in service were recipients of high education certification, including Sanaa University degrees. The collective length of administrative service in their current positions amounted to 40.5 years with an average individual service of 5.06 years. Many of the administrators who talked with the team were anxious to know more about the EMU/AID Project and expressed the desire to become involved at least through possible future in-service arrangements.

The administrators of the Teacher Training Institutes were comparatively young, reflecting the age of the institution to some degree. Using data from four of the five the team visited (the fifth has not opened its doors to students yet), the collective experience Teacher Training Administration amounted to 11.3 years with an average of 2.8 years service. Experience in education in general of the administrators totaled 27 years for an average of 6.75 years experience. Without exception the T.T.I. administrators expressed an interest in knowing more about the Basic Education Project.

The EMU team ended its visitation schedule to schools, Teacher Training Institutes, Local Development Associations, Ministry of Education personnel, USAID development experts, and United Nations development experts, for the most part, on the 26th of May. After drawing together all the data available (both previously collected and EMU team generated), two major questions were asked. First, is this project, with its emphasis on human resource development, appropriate in the social context of the Yemen Arab Republic? And second, has the team learned anything from the interviews conducted in country that will help it to develop educational strategies that offer the "best fit"?

Much of the development aid tendered by the World Bank as well as UNESCO had laid the groundwork for a sustained effort in the direction of human resource development. The people and the Yemen Arab Republic Government are committed to educational development, and in particular wish to increase their capacity to train their own educational personnel. The underlying theme in the identification of critical areas in basic educational development meets those desires. Therefore the EMU team consensus is that human resource development as detailed in this project paper is an appropriate scheme for the Yemen Arab Republic.

The information and insights gained by the EMU team through the extensive cooperation of the groups and individuals mentioned above have played an important role in the evolution of the project implementation strategies. The phasing in the various sub-projects in a way that builds upon previous successes and sustains the efforts of Yemenis to direct the fulfillment of their own development goals is seen as highly desirable by the EMU team. The "best-fit" project is one that builds in the capacity for research and self evaluation. The Basic Education Development Project will undergo continuous assessment for the purpose of recognizing the evolution of new, or heretofore unrecognized, needs and strategies to meet them.

ANNEX K

GIRLS AND WOMEN IN EDUCATION

ANNEX K

GIRLS AND WOMEN IN EDUCATION

A. Overview

Viewed within the historical context of Yemeni society, public education of girls and women is a recent import. Before 1960 the only schools that existed in Yemen were religious ones attended almost exclusively by men. Apart from the few girls who attended religious school, any others who received instruction were taught at home privately. For, with the exception of two famous queens, most women did not have public roles; rather, their contacts and labor were kept within the confines of the family.

These traditional ways continued unchallenged through the first half of the twentieth century. Then after the Revolution, the Republican Government sponsored development programs for the country. These programs, which are aimed at strengthening the economy and providing basic services, require large numbers of trained people. A requisite for most training is basic literacy. In a country with 87 percent illiteracy (Statistical Yearbook, 1976-77, p. 59), there is a great need for elementary teachers, among other trained personnel. For the first time in Yemen's history, there are job openings for women in the public sector. But the social acceptability, and in some cases the economic possibility, of women receiving public training and filling these jobs has not been established throughout the society.

Certain areas of Yemen have historically been more open to change and outside influence. It is in these regions that girls and women have been able to take greater advantage of public education. Other geographically more isolated and independent areas have resisted change, and there girls have had little chance for public education. Examples of these different areas are Taiz, whose primary school enrollment was 17 percent female in 1977-78, and Saadah, where primary school enrollment was 2 percent female.

For the country as a whole, only 12.6 percent of the total primary enrollment in 1977-78 was female (see Table V). To control for the fewer number of girls' schools at upper elementary levels, it is useful to look at first grade enrollments where boys and girls can study together. In 1976-77, the percentage of total first grade enrollment that was female was 13.3 percent (Statistical Yearbook, 1976-77, p. 222). This means that where enrollment is possible, that is, where schools exist, girls do not generally attend.

Even if girls are allowed to begin primary school, that doesn't mean they will be able to continue through sixth grade. High dropout rates are a feature of primary education for both boys and girls in Yemen.

The following table illustrates the percentage of female students who continued from one grade to the next higher one, from 1976-77 to 1977-78:

<u>1st to</u> <u>2nd Grade</u>	<u>2nd to</u> <u>3rd Grade</u>	<u>3rd to</u> <u>4th Grade</u>	<u>4th to</u> <u>5th Grade</u>	<u>5th to</u> <u>6th Grade</u>
50.3%	81.1%	79.4%	89.3%	96.7%

The main dropout period is between first and second grade. More research needs to be done on this phenomenon. A second dropout time is between third and fourth grade. This can be accounted for by social reasons, for it is at this time that people feel girls and boys should be separated. If a girls' school is too far away, then formal education stops. Also, by this time some parents feel their daughters have learned enough, that they are growing, and to remain in school would be both useless and shameful. However, if a girl continues to fourth grade, then her chances of continuing to the fifth and sixth grade are very high.

Stepping back from these figures, it is important to recall that the greatest winnowing occurs before first grade, when most parents who live in areas where there are schools elect not to send their daughters there.

A major researcher on the role of women in Yemen, Cynthia Myntti, sees the absence of a tradition of educating females as the biggest constraint to participation of women in education (Myntti, C., 1978, p. 6). In other words, the mere building of schools has not established the motivation or appropriateness of sending girls there. Despite changes in government since the Revolution, subsistence agriculture, housework, and rearing of children remain the main tasks of women in Yemen. While outside agencies have tried to encourage other options such as nursing and secretarial work, social restrictions have militated against them. The traditional Islamic values which permeate Yemeni society put the protection of girls and women before the development of their minds. This should not be seen as a conscious degradation of women, but rather an attempt to insure for them the good life of marriage and family security.

Any unsupervised contacts are possible sources of gossip. A girl who is gossiped about has had her marriage prospects decreased. Most parents know little about school except that it is a meeting ground for children from many different families and that it is beyond their control. As such, it is highly suspect. Hence the comment is heard that it is "shameful" for a girl to go to school after the age of eight, if at all.

Countering these traditional values are development needs for a literate trained citizenry. These development needs come from the government as well as from the people themselves. The large number of men who go outside Yemen to work come back with a broader view of the

world, new ideas on agricultural methods, new economic schemes, the different plans for their children's future. They also send back money that buys radios, TVs, and other consumer goods for those at home, and that helps fund local projects. These internal pressures for change are joined by outside countries' willingness to work with the Government in development projects.

There are many signs of change in the society including increased enrollments of female students at all levels. At the higher end of the educational scale is Sanaa University. In 1972 four female students were first allowed to attend. By 1978, there were 200 women there, with the greatest number of them in education, followed by arts and commerce (Myntti, 1978, Table 4).

Between the university and elementary schools, Women's Teacher Training Institutes have played an important role in allowing girls to continue their education. Until 1976 the only option for girl students above the elementary level was attending a teacher training institute. This showed government support for women's education at least in this direction. It also reflected the need for elementary teachers as well as reflecting certain social attitudes. If a woman is allowed to work outside the home, then teaching is the most acceptable profession. As all secondary education is segregated by sex, and women do not teach in boys' schools, parents know that as teachers, their daughters will be working either with young children or with girls. And unlike offices which often have strangers walking in, elementary schools or girls' schools are relatively closed settings. Thus teaching is seen as a way in which women can work without sacrificing the social norm of keeping them in a protected environment.

Another advantage in sending a girl to a Women's Teacher Training Institute is the government allowance of 200 YR per month, the two sets of clothing, and the food given to girls while they study in the Institute. In poorer families, or families not convinced of the importance of education for girls, the government stipend is an added incentive to allow girls to continue schooling. It also gives a girl a sense of pride in her position, and she is prepared to earn a regular salary as early as age fifteen when she has finished her first diploma.

Data on girls' attendance at Women's Teacher Training Institutes reflects the relative acceptability of this direction. Of total enrollment in Teacher Training Institutes, 45 percent is made up of girls and women. This figure is high partly because until recently girls lacked other options. The figure is also high because education is clearly the main option for women who desire to work. Employment figures from the Manpower Survey of the Women's Project (Myntti, 1978: Table 8), show the Ministry of Education to be the largest employer of women with 1,000 female employees as teaching staff in 1977-78. The next largest employer of women is the Chinese Textile Factory in Sanaa with 600 female employees, followed by the Ministry of Health with 300 women employees.

In summary, despite present low literacy rates and high dropout

rates, education is playing an increasingly important role in Yemen's development. The extent to which women will be trained and allowed to participate in this depends on how those in authority sponsor economic options for women, and how schools show their programs to be both useful and socially acceptable. At present, teacher training appears to be the main route for allowing women to continue their education and enter the public work force.

B. Replies of School Administrators and Teachers Regarding Girls' Education

To better understand Yemeni public schools and the position of girls and women in education, members of the Eastern Michigan University Design Team visited over 15 schools - primary, preparatory, secondary, Teacher Training Institutes, and the University, located in Sanaa, Hodeidah and Taiz areas during May of 1979. These visits were facilitated by the Ministry of Education. A questionnaire was developed by the Eastern Michigan University team for school visits. The questions that relate to women in education include: questions on male and female enrollment; reasons that girls leave school before graduation; number of girls who graduated the previous years; profiles of female administrators and teachers; what they found most difficult in their jobs; what they found most rewarding; and what they would change in the schools to help their students.

The responses to the questionnaire confirmed low initial enrollment of girls, particularly in rural areas, and high dropout rates for girls in primary but not preparatory, secondary, or university levels. A question that elicited most interesting answers was the one asking for reasons that girls drop out of school.

At the elementary level, two different male directors of schools said that some fathers feel that as soon as a girl knows how to pray she needs no more school. Another director said that after third grade some fathers will only allow their daughters to study in an all girls' school. When such a school is far away, education for the girls stops. A teacher from a rural school said that work, particularly carrying water and helping in the fields, was a more pressing need than school. This teacher also added that cost of clothes, shoes, and notebooks for several children were sometimes excessive, and that, even if a father allowed his daughter to go on in school and become a teacher, he would have paid the expenses, but the money the girl made would go to her husband.

At the preparatory and secondary level schools, the main reason given for girls leaving school was marriage (48% of girls between 15 and 19 are married). Some directors of girls' schools, all of whom are women, stated that often the girls prefer to stay and study, but the parents insist they marry. With the consent of their husbands, girls do continue to study after marriage, and pregnant girls are allowed to continue as well. However, the extra duties at home make school work difficult. Two other reasons for girls' dropping out of school were the amount of work at home and the difficulty of lessons.

The profiles of the female directors were also interesting. Excepting a naturalized Yemeni citizen, all were Yemenis from the southern areas of the Republic (Taiz, Rida, Hodeidah) which are known for their exposure to outside culture. Three had received some education abroad in Esmara, in Cairo, and two had received all their education within Yemen. Those who had received all their education in Yemen had been students in the particular Girls' Teacher Training Institutes that they were presently directing.

Regarding teachers, almost all the Yemeni ones were teaching at the elementary level. Expatriates fill most secondary level teaching positions in schools. The schools that employed the most Yemeni women teachers were elementary schools connected with Girls' Teacher Training Institutes. Here students studied half the day for their second diploma and taught elementary school for the other half of the day.

When Yemeni women teachers were asked about career plans, several mentioned the university; one said she should only go to the university if it were for girls alone, but most planned to teach for just a few years. Besides elementary schools, another teaching situation for Yemeni women is in Adult Training Centers working with women. As evidence of support for this, in May of 1978, 15 female students from teacher training institutes in Taiz, Ibb and Sanaa attended a week long workshop, sponsored by the Ministry of Education, (Non-formal Branch) where they were instructed in methods of teaching basic literacy and arithmetic to women in Adult Centers.

Problems in Girls' and Women's Education

Several problem areas in girls' and women's education in Yemen, such as social constraints and motivation, have already been mentioned. However, the Eastern Michigan University Team felt it was important to ask Yemeni school staff what they felt to be the problems in education of girls.

Typical answers such as low salaries for staff, low student stipends from the Government, crowded classrooms and facilities, lack of books and teachers at the beginning of the school year, problems of availability of schools, of transportation to schools, and of school/home communication, are not peculiar to education of girls alone. It was in elaborating their answers that the specific case of girls was brought out.

A frequently mentioned problem was that of home/school communication. It is interesting that the female staff did not see social constraints as unsurmountable barrier to girls' education: rather, they saw the need to explain what they were doing in school. This is not unusual, for all the female staff members had themselves overcome these social constraints.

As the school staff explained, most parents had never been to school and had little idea of what went on there. Some did not realize

that their children had to attend school regularly, or that homework required study outside school. When asked if and how parents supported the school, most staff referred to the Parent Council. In seven out of 14 schools, the Parent Councils were active. They contributed financially toward buying supplies like furniture, typing machines, musical instruments and other needs not covered by the Ministry. Staff were grateful for the help but the main communication seemed to be regarding materials needs. Only one school said that the Council was a means of explaining to the parents what their daughters were doing and how they could help them. A director of a school in Taiz said it was most difficult to communicate with parents on any subject as many of the fathers were out of the country. Two women directors mentioned going on their own to houses of students to explain about not overloading girls with housework on top of school work, and one said she went to the Adult Training Center where she talked with mothers.

Besides communication between home and school, transportation was mentioned as a main problem. The Teacher Training Institutes in Hodeidah and Sanaa have busses, but the busses breakdown and time involved is also great. Again, it is not merely a matter of moving people from home to school, but making sure it is done in a chaperoned manner. Transportation is also a problem for Yemeni teachers who are paid relatively low salaries, and who often have to walk great distances to school.

This problem of transportation was mentioned in the urban context as all Girls' Teacher Training Institutes are located in cities (Sanaa, Ibb, Hagga, Hodeidah, Taiz). A teacher in a rural area did not see transportation as a problem. She said that both boys and girls often walked up to two hours to school. But obviously the options for attending a teacher training institute or the university were not present. This however, is more a problem of accommodation than transportation.

Finally, an area of concern to the Eastern Michigan University Team that was not brought up by Yemeni school staff was that of appropriateness of curriculum to community needs. Questions relative to curriculum were generally seen by school staff as something beyond their control. In the official curriculum, sewing and cooking, which the Eastern Michigan University Team thought parents would see as directly useful for their daughters, are to be offered starting with the fourth grade. But in elementary schools visited, these courses were not always offered. In fact, two city schools and one rural school didn't make a pretext of offering them. Another rural school had only begun this year to offer such courses in the sixth grade. Partly the omissions were due to lack of space, of time, and of staff. But it is also unlikely that such courses are offered in schools without female teachers, which in the case of most rural schools.

C. Projected Affect of Primary Teacher Trainer Programs on Education for Girls and Women

The Basic Education Development Project is designed to improve educational opportunities for girls and women in Yemen. The main means for facilitating this includes selection of women participants, research projects on girls and women in education, and inservice conducted by the newly awarded Masters students. The determined effort to have, female participants in every group of the Master's program testifies to the importance given to educating Yemeni women at the graduate level. During the in-country year of the Master's program, both male and female participants will conduct basic research on problems of primary education in Yemen. Clearly, consciousness of both men and women must be raised if greater participation of women in education is to take place. Upon returning from the year at Eastern Michigan University, the participants will be assigned to Primary Teacher Training Institutes. As mentioned earlier, Primary Teacher Training Institutes have a special role to play in encouraging education of girls and women. At present they are more socially acceptable than other training options; so the returnees will be in a position to influence many of the future trained female work force of the country.

Seen from another perspective, the program takes Yemeni women who are already remarkable in that they have graduated from Sanaa University, and have taught at least one year, and gives them a broader view of educational problems in Yemen and a deeper view of primary school education. It also awards them a Master's Degree which is a distinction in their society. Then the Ministry places them in Girls' Primary Teacher Training Institutes where they pass on their expertise and serve as models for other girls and women who will be primary teachers themselves. It is also hoped that, with the shortage of educators trained at the graduate level, some of the women will be appointed to administrative positions in the Primary Teacher Training Institutes as well as in the Ministry and Sanaa University.

To encourage participation by women in the program, each group will include more than a few women so that they have each others' company and will not feel alone or isolated during the year in Sanaa and especially in the United States. There will also be female staff members who will work closely with them in academic counseling and social supervision in Ypsilanti. The staff will also meet with the families of the prospective participants to reassure them as to the content and supervision of the program.

A final comment on the effect of the Teacher Trainer Program relates to the education of girls and women in rural areas. While it is not possible to specify that participants come from rural areas, one of the selection criteria is that participants do come from different regions of Yemen. After graduation they will be sent back to their region where they will be expected to help in inservice workshops for local teachers. These women with increased self-confidence, expertise,

and research skills, will be able to talk with parents, to find out what needs the local area schools should serve, and to communicate these needs to those in a position to implement them, all the while serving as models for other women in the area.

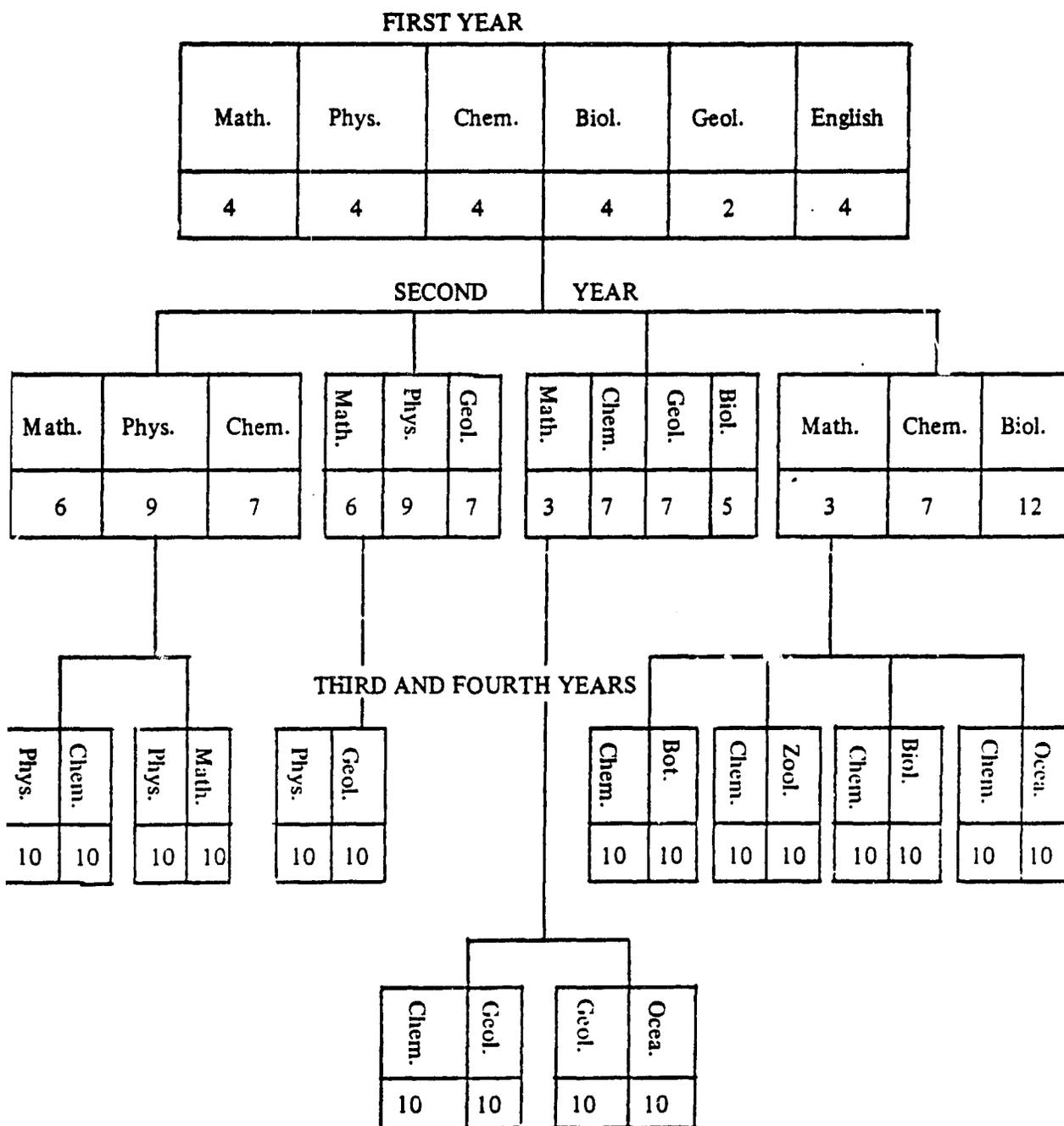
ANNEX L

FIGURES AND TABLES

ANNEX LLIST OF FIGURES AND TABLES

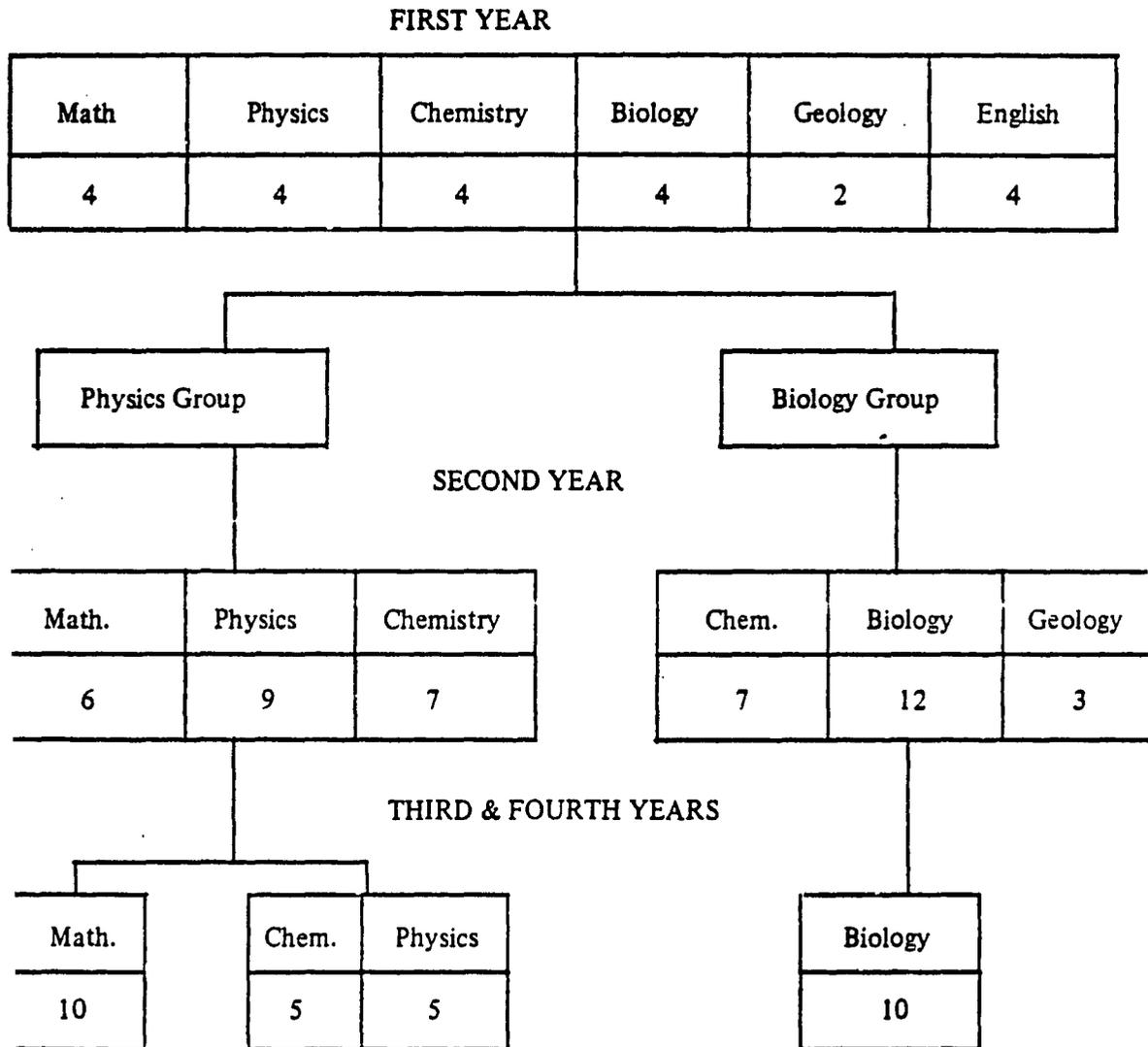
1. **Figure 1.** Science curricula of the Faculty of Science at the University of Sanaa and the number of credit hours for the various subjects.
2. **Figure 2.** Science program for science major students in the Faculty of Education, University of Sanaa. The number of credit hours for the various subjects is shown.
3. **Table 1.** Pre-college student enrollment, 1978/1979.
4. **Table 2.** Science and health education program in primary, preparatory schools, 1978/1979.
5. **Table 3.** Primary student enrollment, 1978/1979.
6. **Table 4.** Students enrolled at the University of Sanaa in the Faculty of Science and Faculty of Education, 1978/1979.
7. **Table 5.** Student enrollment in the different colleges at the University of Sanaa, 1977/1978.
8. **Table 6.** Science students at the University of Sanaa, Faculty of Education, 1978/1979.
9. **Table 7.** Student enrollment at the University of Sanaa, Faculty of Science, 1978/1979.
10. **Table 8.** Number and rank of Faculty of Science at the University of Sanaa, 1979.

Figure I: Science Curricula of the Faculty of Science at the University of Sanaa and the number of credit hours for various subjects.



1 hour of lecture = 1 credit hour
2 hours of laboratory - 1 credit hour

Figure II: Science program for science major students in the Faculty of Education, University of Sanaa. The number of credit hours for the various subjects is shown.



1 hour of lecture = 1 credit hour
 2 hours of laboratory = 1 credit hour

TABLE 1
 PRE-COLLEGE STUDENT ENROLLMENT
1978/1979

Level	Number of Schools	Sections	Boys	Girls	Total	Number of Teachers
Primary	1604	7052	219,765	31,521	251,286	6,968
Preparatory	104	470	18,590	2,673	21,263	711
Secondary	30	186	7,115	858	7,973	344
Secondary Commerce	4	10	240	16	256	
Secondary Technical	11	10	267	-	267	
TTI	8	35	705	469	1,174	
TTI-General	8	26	211	232	443	
Primary (Religious)	9	27	790	22	812	
Preparatory (Religious)	11	29	819	-	819	
Secondary (Religious)	5	11	203	-	203	
Primary (Private)	1	24	708	496	1,204	
Preparatory • (Private)	1	3	84	80	164	
Non-Formal Ed.	51	267	5,024	3,620	8,644	
Totals	2,037	8,150	254,521	39,987	294,508	

TABLE 2

SCIENCE AND HEALTH EDUCATION PROGRAM IN
PRIMARY, PREPARATORY AND SECONDARY SCHOOLS
1978-1979

Primary Schools

	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4th</u>	<u>5th</u>	<u>6th</u>
Natural & Social Environment	3*	3	-	-	-	-
Science & Health Education	-	-	3	3	4	4

Preparatory Schools

	<u>7th</u>	<u>8th</u>	<u>9th</u>
General Science	3	3	3
Health Education	1	1	1

Secondary Schools

	<u>10th</u>	<u>11th</u>	<u>12th</u>
General Science	4	-	--
Physics	-	3	3
Chemistry	-	3	3
Natural History	-	3	3

*Times per week - 45 minutes

TABLE 3
PRIMARY STUDENT ENROLLMENT
1978/79

Number Of Schools	Highest Grade Taught	Sections	Boys	Girls	Total
363	Sixth	2900	110,869	25,275	136,144
216	Fifth	1123	29,767	3,300	32,067
280	Fourth	1145	26,914	1,314	28,233
376	Third	1174	30,871	1,040	31,921
273	Second	560	16,928	487	17,415
19	First	98	4,411	105	4,516
1,604			219,760	31,521	251,286

TABLE 4
 STUDENTS ENROLLED AT THE UNIVERSITY OF SANAA
 IN THE FACULTY OF SCIENCE &
 FACULTY OF EDUCATION
 1978-1979

Academic Year	Faculty of Sci nces			Faculty of Education		
	M	F	Total	M	F	Total
70/71	5	-	5	-	-	-
71/72	9	-	9	-	-	-
72/73	17	1	18	-	-	-
73/74	23	4	27	28	5	33
74/75	40	7	47	55	8	63
75/76	46	12	61	112	10	122
76/77	75	16	91	166	24	190
77/78	148	27	175	210	26	236
78/79	170	23	198	188	28	216

TABLE 5
STUDENT ENROLLMENT IN THE DIFFERENT COLLEGES
AT THE UNIVERSITY OF SANAA 1977/78

	First Year				Second Year				Third Year				Fourth Year				Total		
	New		Repeat		New		Repeat		New		Repeat		New		Repeat		M	F	All
	M	F	M	F	M	F	M	F	M	F	M	F	M	F					
Faculty of Commerce & Economics	151	8	256	26	212	22	151	11	106	11	45	5	80	12	11	5	1,121	103	1,224
Faculty of Arts	223	42	102	33	52	14	35	11	34	17	8	6	32	22	4	3	490	148	638
Faculty of Science	92	13	16	3	12	5	5	2	9	2	2	1	12	1	-	-	148	27	175
Faculty of Law Sharia	188	9	156	14	147	7	21	1	72	3	9	1	29	1	4	-	626	36	662
Faculty of Education	154	14	127	25	155	27	51	7	187	25	14	2	130	14	3	2	821	114	935
Total	808	86	687	101	578	75	263	32	448	59	89	17	310	50	23	8	3,206	428	3,634

*These students registered and attended few classes or did not attend at all in the first year.

In the following year, they are considered repeats.

TABLE 6
SCIENCE STUDENTS AT THE UNIVERSITY OF SANAA
FACULTY OF EDUCATION 1978/1979

Class	Subjects	New	Repeat	Total	
1st	General Science	57	12	69	69
2nd	Physics	30	4	34	
	Biology	30	7	37	71
3rd	Mathematics	23	-	23	
	Physics & Chemistry	8	-	8	
	Biology	12	-	12	
	Geology	1	-	1	44
4th	Mathematics	9	2	11	
	Physics & Chemistry	10	-	10	
	Biology	5	-	5	
	Geology	6	-	6	32
Total		191	25	-	216

TABLE 7
STUDENT ENROLLMENT AT THE UNIVERSITY OF SANAA
FACULTY OF SCIENCE 1978/1979

Class	Subjects	New	Repeat	Total	
1st	General Science	80	20	105	
	Medical Lab.	9	-	9	114
2nd	Physics	10	1	11	
	Biology	17	-	17	
	Geology & Physics	12	-	12	
	Geology & Chemistry	17	-	17	57
3rd	Physics & Chemistry	2	1	3	
	Physics & Math	4	-	4	
	Chem. & Bio-Chemistry	3	-	3	
	Chem. & Geology	3	-	3	
	Oceanography & Geography	2	-	2	15
4th	Physics & Math	1	-	1	
	Physics & Chemistry	1	-	1	
	Chem. & Zoology	2	-	2	
	Chem. & Geology	3	1	4	
	Chem. & Oceanography	2	-	2	
	Ocean. & Geology	2	-	2	12
Total		170	28	-	<u>198</u>

TABLE 8
 NUMBER AND RANK OF FACULTY OF SCIENCE
 AT THE UNIVERSITY OF SANAA, 1979

Subject	Prof.	Assoc. Prof.	Asst. Prof.	Inst.	T. Asst.	Total
Math	2	3	1	-	2	8
Physics	1	2	4	1	2	10
Chemistry	4	4	-	2	3	13
Geology	3	1	2	1	4	10
Botany	2	-	1	1	2	6
Zoology	2	2	1	-	3	8
Oceanography	-	2	1	-	1	4
Total	13	14	10	5	17	59

ANNEX M

CONDITIONS PRECEDENT AND COVENANTS

ANNEX MConditions Precedent and Covenants

The following Conditions Precedent and Covenants are recommended for inclusion in the Project Grant Agreement.

A. Conditions Precedent

Conditions Precedent to Disbursement of Funds for Primary and Science Education Sub-Project

Prior to any disbursement or the issuance of commitment documents under the Project for Primary and Science Education Sub-Project activities, the Y.A.R. shall, except as A.I.D. may otherwise agree in writing, furnish in form and substance satisfactory to A.I.D.:

1. Names of persons who will act as the representatives of the Y.A.R. for this Sub-Project together with evidence of their authority and the specimen signature of each;
2. A list of program participants who begin participant training under this Sub-Project in 1980;

3. Evidence of availability of sufficient office and classroom space and facilities necessary to carry out the Sub-Project activities;
4. Evidence of establishment of participant selection procedures, acceptable to A.I.D., which shall include final endorsement of program participants by both A.I.D. and Deans of the Faculty of Science and Faculty of Education at Sanaa University.

B. Covenants

Special Covenants for the Implementation Primary and Science Education Sub-Project.

1. The Cooperating Country, after consultation with A.I.D. shall agree to provide appropriate salary and professional incentives to encourage full participation of secondary school science teachers and inspectors participating in the planned in-service program.
2. The Cooperating Country shall endeavor to complete a study of teacher retention problems at all educational levels in the Yemen Arab Republic.
3. The Cooperating Country shall agree to provide salaries, school supplies, teaching materials, furniture, logistical support and other goods and services as required to meet the demands created by the expansion of primary and science education as a result of project.

4. The Y.A.R. shall agree to discuss with A.I.D. various additional alternatives and incentives for retaining program participants such as furnishing housing, bonuses for teaching in remote locations and accelerated promotion schedules.

5. The Y.A.R. shall grant appropriate salary increases to program participants upon notification of successful completion of the graduate degree.

6. The Y.A.R. shall continue full salaries and benefits to participants during all phases of the project.

7. The Y.A.R. shall require at least five years of service to Sana University following completion of graduate degree program.

8. The Y.A.R. shall hold all degree documents in order to guarantee that participants will complete the service agreement.

9. A long range plan for development of the Faculty of Education acceptable to A.I.D. will be approved by Sana University within nine months from the date of the arrival of the long-term Faculty of Education advisor.

10. Unless A.I.D. otherwise agrees in writing, the grantee, within nine months from date of signing the Project Grant Agreement making funds available for the Primary and Science Education subproject, shall furnish a detailed equipment procurement plan with cost estimates based on procurement

for lab facilities (Life Sciences, Physical Sciences, Curriculum/Instructional Materials, in form and substance satisfactory to A.I.D.

11. The Y.A.R. shall endeavor, to the maximum extent possible, to increase the participation of women in every phase of the project.

ANNEX N

EVALUATION OF THE THREE YEAR DEVELOPMENT PROGRAM

ANNEX N

EVALUATION OF THE THREE YEAR DEVELOPMENT PROGRAM 1973-74-1975-76

Ministry of Education

The three year program concentrated on basic structures, and education was one of these; and total investments allotted to it amounted to 195 Million Rial, i.e., a ration of 20.86 percent out of the three year program total investments. The allotments of this sector come second in size after transport and communications sector which allotments amount to 31.23 percent out of total investments of the three year program.

The sector's allotments were divided as the following:

- Project of developing education and educational books, 72 Million Rial, representing 36.6 percent out of the sector's total investments.
- Project of supporting teaching staff, 70 Million Rial, representing 35.65 percent out of the sector's total investments.
- Project of school buildings, 40 Million Rial, representing 20.8 percent out of the sector's total investments.
- Project of developing Sanaa University, 11 Million Rial representing 5.65 percent out of the sector's total investments.
- Project of training and illiteracy eradication, 1.5 Million Rial representing 1 percent out of the sector's total investments.
- Project of supporting and modernizing the Ministry, 528 Thousand Rial, representing 0.35 percent out of the sector's total investment.

1. Project of Developing Education:

This project is composed of two parts:--

The educational and organizational part: which is represented in a technical assistance from the U.S. executed by the UNESCO, at six year duration aiming at: the improvement of planning and administration (reorganizing the Ministry of Education, control of education at central and local levels, and develop the curricula.

The constructions and equipment part: which is represented in building 13 educational institutions, 3 out of which for training primary schools teachers, a faculty of education,

three secondary schools, two agricultural training centres, in addition to equipping nine institutions located in the three main cities, with 3 colleges for training primary schools women teachers, 3 preparatory schools, and three secondary schools.

A draft of organizational framework for the Ministry of Education was put, and another for the system of training colleges was put also.

In the sphere of constructions, a Swedish firm was chosen for designing works, and a bidding was carried out for supplying necessary tools and equipment.

The project contributed to a number of training courses, one of which for training women teachers in Sanaa University for 10 weeks, and a similar course in Taiz. The IDA is contributing to this project (loan) in addition to assistance from the United Arab Emirates, the Federal Germany and UNIDO. The expenditure on the project amounted to 4.1 Million Rial, which represents a small proportion of the three year program, and could be attributed to unclear vision during the preparation of the program. As for loans, withdrawing from IDA was satisfactory in comparison with what have been achieved.

2. Project of Supporting Teaching Staff:

The aim of the project was the increase of technical assistance in the field of teaching in all stages, by Arab states. 18 Million Rial were spent up to academic year 73-74, and about 1,000 teachers arrived from brethren states; in the academic year 74-75, 20 Million Rial were spent on the same project.

3. Project of School Building:

The aim of the project was to build a number of schools, training colleges, and houses for non Yemeni teachers. During the academic year 72-73, 11 primary schools and 3 preparatory schools were built by the government and the citizens, in addition to the completion of 38 primary schools, and 9 schools of two sections primary and preparatory, and a secondary schools, with a point finance from the government, the citizens and the brethren countries in the academic year 74-75.

4. Project of Training:

This project was amalgamated with the project of developing education.

5. Project of Supporting and Modernizing the Ministry:

This project aimed at constructing a building for examinations directorate with all its requirements. 528 Thousand Rial were allotted for the project, and 218 Thousand were spent from government sources, where the building was completed, and its equipment were provided from bilateral sources.

The project included as well, another project for school books aiming at raising the standard of educational process, through writing the books, printing them, and importing other books. In this respect, the following was achieved: -

-735 Thousand books for primary of education and 12,320 books for secondary education was received.

These books were financed by various sources.

34 Written books were prepared, 22 out of which for the primary education, 3 for preparatory education, and 9 for secondary education, in addition to receiving the printing mill and its equipment.

Total expenditure until the third year of the program amounted to 2,491 Thousand Rial.

As for the project of schools equipment, the aim of which was to supply schools with their needs of equipment, explanatory tools and scientific equipment. During the second year of the program, equipment for three secondary schools, and three preparatory schools were received from the Iraqi government, and equipment for a number of primary schools and preparatory schools from Kuwait office, and total expenditure on equipment amounted to 327 Thousand Rial from the government and 238 Thousand from foreign financing, apart from equipment offered by the Iraqi and Kuwait governments. During the third year of the program, expenditure on the project amounted to 1,085 Thousand Rial.

6. Project of Illiteracy Eradication and Adult Education

The aim of the project was eliminating the illiteracy of 5,000 citizens (male and female), and qualifying 100 teachers in the subject of illiteracy eradication and adult education, 1,418 participants registered in these centres, and 52 teachers were trained in cooperation with UNESCO and UNICEF during 73-74. In the second year, 1,550 male participants and 2,504 females were registered and 50 classes were opened in cooperation with armed forces.

103 Thousand Rial from government financing were spent, and 15,75 Thousand form UNESCO on the project which fulfilled its objectives fully.

Sanaa University

Project of Developing Sanaa University:

The aim of the project was to strengthen existing faculties, opening new courses, and constructing required buildings and laboratories. During academic year 73-74, 8 classes, the general administration building, the first storey of faculty of science workshops, and a theatre were built. In 74-75 a site was chosen for the buildings of the faculty of education, faculty of economics and commerce, and faculty of jurisprudence and law; houses for the university teaching staff were built, in addition to residential halls for male and female undergraduates, and a club; and the university administration was supplied with necessary equipment.

Total expenditure from government sources amounted to 3.7 Million Rial for buying lands for the expansion of university departments, this is apart from what the Kuwait government spent during that period.

The National Institute for Public Administration

The Institute was given the task of improving the standard of performance in the departments of public service, and qualifying workers in the administrative, financial and public service branches at all levels and in all sectors, in addition to carrying out studies, organizational and administrative consultations, and setting up a library and a notation centre. The Institute realized the following during the program:

- 64 training courses were arranged, the duration of the course was between one month and nine month, and the number of participants, was 1,783 officials (male and female) in the fields of public administration organization and systems, research and developments, administration of individuals, financial administration, librarianship, typewriting, modern languages, libraries and notations.
- The Institute prepared 15 various topics in the sphere of administration as well as the translation of eight topics from English and German languages.
- The Institute offered sixteen consultations to ministries and government institutions.
- The library of the Institute was supplied with 3,500 books, and 130 basic reference books.

Investments allotted for the Institute in the Program amounted to 5,721 Thousand Rial, 4,342 Thousand out of which U. N. finance.

Expenditure on the project during the Program reached 1,469 Thousand Rial, the largest part of which from the U. N. assistance.

ANNEX 0

EDUCATION SECTOR: YAR FIRST FIVE YEAR PLAN 1976-77-1980-81

The education sector is considered one of the services sectors which is productive in the medium and long run, owing to this nature, it has not been given the importance it deserves because its product is intangible in the short run, and its effect is indirect. On the other hand, the educational process is an integrated operation of direct functional connection with the various economic and social sectors.

The creation of qualified personnel of different levels, and training them on modern technology necessary for running the developed society, has become the responsibility of modern education. In the light of this view, ascribing an important position in the first five years plan for educational sector is a logical and decisive conclusion for the success of the plan.

Ministry of Education and Sanaa University

The Objectives:

1. Realizing social justice in the general educational stages, where education becomes available for all people, young and old by completing the application of obligatory primary education in twenty years time for males and thirty years for females, expanding in preparatory and secondary education of different kinds, setting up the centres of informal education, providing equal opportunities for everyone, adopting free education, giving importance to female education and spreading education in the countryside.

It was the fate of the generation which was born before the revolution to succumb under the yoke of illiteracy. It is the duty of the state at the present stage to stop adding new groups to the number of illiterates, i.e., working in the direction of eradicating illiteracy from the root by the application of obligatory education gradually and in increased proportions year after year in companion with a plan for eradicating the illiteracy of the very young who lost the opportunity of entering primary schools.

2. Raising the standard of education especially primary education by providing qualified teachers, reducing the proportion of dropouts at this stage, equipping schools with assisting means, and distributing books free.
3. Giving importance to the Islamic belief and spiritual value, and the national culture, and using them as a main crop for directing education in the country.

4. Giving important to the education of females in an equal proportion with educating males wherever possible.
5. Creating a reserve of various human qualifications and at all standards in order to provide the requirements of the educational sector itself, and the requirements of other sectors through the increase and support of training schools and different vocational schools, equipping them, and the proper distribution of pupils at these schools according to their abilities, and availing the opportunity for the proficient in these branches to continue their studies in university faculties and high institutes.
6. Giving importance to the training of vocational teachers, and concentrating on dropouts from the educational system to absorb them in the vocational training centres.
7. Building reserve Yemeni agricultural technical qualifications to cater for the needs of the agricultural and animal sector in consistence with the development plan and spreading agricultural education through training and qualifying all personnel who shall work in this sector.
8. Working for the realization of self-sufficiency in providing teachers and women teachers in all stages of education.
9. Improving the return of education its various stages by creating the suitable educational atmosphere at school, putting programs for liberal activities in it, evolving the curricula to cope with modern advancement, and conditioning them with the requirements of Yemeni life, and improving school books in content and shape.
10. Developing training methods, and using audio-visual means for this purpose.
11. Developing the guiding system in the Ministry and in the governorates, and providing enough number of educational inspectors and instructors, and choosing educational leaderships in schools and training them.
12. Putting a long term plan for building the necessary schools to house all new entrants in various educational stages, according to fixed styles and specifications, encouraging the popular effort in building schools, and removing variations in the regional distribution of schools among governorates, by concentrating on building schools in backward regions.
13. Evolving the standard of university regulations in order to raise educational, financial, organizational and administrative efficiency in various activities of the university, directing undergraduates to specialize in sciences, and striking a kind of balance between scientific and theoretical

faculties in consistence with the needs of development plan, and the Yemeni Arab Society.

14. Expanding Sanaa University by establishing faculties for medicines, engineering and agriculture.

The Strategy:

1. Mobilizing the administrative and technical departments of the Ministry of Education, the University, and the training and educational institutions in the Republic in order to execute projects of the plan at their proper time, and working at the same time to raise the productive efficiency of these departments.
2. Strengthening technical, financial and administrative coordination with different ministries and government institutions, especially in connection with the execution and working of vocational training and teaching projects (industrial, agricultural, veterinary), and connecting the specialization in these institutes and the preparation of trainees in them, with the requirements of development projects.
3. Strengthening coordination and control over the execution of financial agreements signed with different financing organizations for the execution of educational projects.
4. Developing educational stages and modernizing them in consistence with the development plan.
5. Advancing in the execution and working of projects avoiding the rising of administrative and financial bottlenecks in the Ministry itself, and in other concerned ministries and government institutions.
6. Arising the national and popular conscience to support educational projects, and to accept voluntary participation in the execution and succeeding these projects, and cooperating closely in this context with the General Union of Development Committees.
7. Using incentives and all attracting means to encourage people to send their children of age 6 to 11 to primary schools, and encouraging them to complete their primary education.
8. Setting up a specialized organ for planning in the Ministry of Education and the university. This organ shall be given the task of putting programs for the execution of plans and following them up, altering them, and coordinating among different departments working in educational sector.

9. Establishing a fixed cadre for different groups of teachers and lectures within the educational institutions, and a system for promotion, provided that the main salary is remunerative and compatible with the dignity of teacher, and giving teachers in isolated areas an additional recompense, and giving inspectors and instructors a recompense for nature of work.
10. Standardizing school buildings in different stages, and coordinating the efforts of all parties sharing in school building under the supervision of one authority responsible for school building in the Republic.
11. Allowing excellent students graduates of vocational schools and institutes to continue their education in the suitable faculty.
12. Gathering and centralizing internal residency of students to save costs.
13. Giving the counterside preference in feeding pupils and students.

The National Institute for Public Administration

The Objectives:

1. Concentrating on training and qualifying workers in financial administrative sphere in different sectors and at various levels.
2. Providing the required scientific personnel for training purposes and enabling it to rely on local labour force in the second year of the plan.
3. Completion of required technical equipment.
4. Stimulation of research and administrative consultations which lead to modernize ministries and government institutions.
5. Supporting the library and notation for serving various ministries and government institution.
6. Expanding the scope of the institute activity for the capital to all governorates by supporting the institute two branches in Taiz and Al Hodaidah.

The Strategy:

1. Concentrating on the library in field of general administration where the circumstances of the Yemeni life will be taken into consideration.

2. Noting the legislation and administrative code by micro-film method.
3. Setting up a workshop for audio-visual equipment.
4. Supporting the institute by scientists, especially in the sciences of statistics, analytical economics, organization and accountancy and administrative staff.
5. Supporting the institute by a number of experts in the following branches: Planning and coordination, public administration, systems and methods of work, administration of personnel affairs, financial administration, administration of libraries, typewriting and shorthand.

Yemeni Studies Centre

The Objectives

1. Collecting the scientific material connected with the human activity in the country from oldest ages.
2. Collecting detailed and statistical information about the nature of the country.
3. Preparing research, scientific studies, and lists of books which deal with all human and natural aspects.
4. Encouraging writing and translation, and publishing research studies and scientific compiling which could be in building the Yemeni Society.
5. Safeguarding popular arts and following various means for their development.

The Strategy:

1. Completion of the administrative centre structure by specialists and administrative efficiencies.
2. Carrying out studies and research by eight specialized committees consisting of Yemeni scientists and researchers, with the help of visiting scientists and researchers who are earnest and scientifically faithful, these committees are: Committee of history and antiquity; committee of economics, statistics and surveying; committee of literature and cultural decorative, architectural arts and town planning; committee of manuscripts and documents committee of Islamic and social studies; committee of legal and Islamic law studies; committee of conventions and traditions; committee of translation and publishing

Long Term Objectives:

1. Constructing the Yemeni human being who is armed with education and faith, and who will carry lantern of modern Yemeni civilization.
2. Spreading consciousness in the country which denied education for a long time, and making it to reach every corner in the country.
3. Keeping the Islamic Arabic Yemen feature whether in towns out in countryside, safeguarding the home culture.
4. Opening the door of education to the new generation in all aspects of life, in order to dip up knowledge from all sources and ensuring the correlations in sciences and knowledge.

The Determined Objectives:

1. Spreading the Arabic religious scientific institutes in the centres of governorates, and in densely popular areas to enable people to learn religious, Arabic and social subjects with other sciences.
2. Creating the efficient teacher in religious, Arabic and social sciences, to cover the current deficiency, and reach self-sufficiency in the future.
3. Putting the suitable curricula for the three stages of education, primary, preparatory and secondary, planning for university education in cooperation with the Ministry of Education.

The Strategy:

1. Expanding gradually in education according to possibilities available to the commission.
2. Following up the flowing of education in the commission's regulating their order, and urging supervisors to give more importance to delivering their sacred message, in order to give students the utmost benefit from time.
3. Classifying scientific institutes into three kinds: number 1, the principal in the capital, number 2, the standard institute, in governorates centres, and number 3, for some institutes which will be set up in some Yemeni places famous for their long scientific history.
4. Setting up new institutes especially in Sanaa, Taiz, Thamar, Sa'ada and others.

5. Providing the required administrative and teaching cadres, and building a headquarter for the commission.
6. Opening boarding sections for students from far way areas after ascertaining that they are unable to finance their studies.
7. Coordinating with the Ministry of Education in training teachers, and putting the curricula.
8. Publishing a scientific magazine.

ANNEX P

UNITED STATES GOVERNMENT

memorandum

DATE: May 15, 1980

REPLY TO
ATTN OF: NE/PD/PDS, Stephen F. Lintner, Environmental Coordinator *SFL*

SUBJECT: YEMEN - Basic Education Development Project (279-0053), Primary and
Science Education Subproject - Environmental Clearance

TO: NE/TECH/HRST, Ann Domidion, Project Chairperson

I have reviewed the environmental documentation submitted for the subject project and concur with the conclusion of the Mission that the action will have no adverse effect on the environment.

It should be noted that, except to the extent designed to result in activities directly affecting the environment (such as construction of facilities, etc.), educational programs have been determined not to be Federal actions having a significant effect on the environment. Such actions require only an explanatory paragraph on the environment in the Project Identification Document (PID) and Project Paper (PP) and do not require an Initial Environmental Examination.

cc: GC/NE, T. Carter
AID/Sana, F. Pavich, Mission Environmental Officer



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