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YEMEN ARAB REPUBLIC

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Country Implementation Plan
for IEES Activities

February 1986

IEES

Improving the
Efficiency of
Educational
Systems

936-5823

Florida State University 001352
Howard University 001361
Institute for International Research 000601
State University of New York at Albany 002283

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United States Agency for International Development
Contract No. DPE-5823-C-00-4013-00

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Improving the Efficiency of Educational Systems (IEES) is an initiative funded in 1984 by the Agency for International Development (AID). The principal goals of the IEES Project are to help developing countries improve the performance of their educational systems and strengthen their capabilities for educational planning, management, and research. To achieve these goals, a consortium of U.S. institutions has been formed to work collaboratively with selected host governments and USAID Missions over the next ten years. The consortium consists of Florida State University (prime contractor), Howard University, the Institute for International Research, and the State University of New York at Albany.

There are currently seven countries working with the IEES initiative to improve educational efficiency. Three are in Africa: Botswana, Liberia, and Somalia. The other four countries are Haiti, Indonesia, Nepal, and Yemen Arab Republic.

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IEES
Educational Efficiency Clearinghouse
204 Dodd Hall
Florida State University
Tallahassee, Florida 32306
USA
(904) 644-5442

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YEMEN ARAB REPUBLIC COUNTRY PLAN: 1986-87

1.0 INTRODUCTION

The Yemen Arab Republic (YAR) is a country in which the IEES project has more recently become active. In October 1985, a sector assessment of the country's education and human resources (EHR) was conducted for the purpose of reviewing the nation's education and training system in terms of the country's plans and goals, the current status of its activities, the existing needs and constraints, and the available options and opportunities for change.

The success of the IEES sector assessment is demonstrated by the support obtained from the governments officials of the YAR, the officers and staff of the Educational Research and Development Center (ERDC), and the personnel from the USAID/Sana'a Mission. It is this support which provided the impetus for the activities identified in this country plan.

1.1 PURPOSE OF THE COUNTRY PLAN

The country plan is designed to represent a consensus view among the participants in the IEES project. In addition to the government officials from the host country, participants involved include USAID personnel from both the Sana'a mission and Washington office, major EHR sector donors, private sector representatives, and IEES project staff. The primary objective of this plan is to identify, justify, and set priorities for IEES activities in the YAR for the coming year. The criteria employed in this process will combine the long-term goal of the YAR of improving its planning, implementation, and monitoring of EHR development with the short-term goals of IEES of providing activities which are designed to meet specific, identified needs which will build on each other to obtain this long-term goal.

The ultimate criterion for all project activities is improvement in the efficiency of resource utilization in education. The criterion will be applied at the school and classroom level as well as the regional and national levels.

Other aspects of the Yemen country plan are:

1. to identify IEES activities to be conducted in the Yemen Arab Republic and clarify the interrelationship among these efforts;

2. to assess the YAR's ability effectively and efficiently utilize available resources to meet educational needs; and

3. to describe IEES activities within the YAR that address both priority IEES objectives and YAR national goals.

1.2 The IEES CONSORTIUM

The IEES project is coordinated by the staff of the Learning Systems Institute of Florida State University. Participating institutions include the State University of New York at Albany, Howard University, and the Institute for International Research. Support institutions include Syracuse University and Pennsylvania State University. Management responsibility is vested in the Executive Management Committee consisting of the Project Principal Investigator, Director, and the Institutional Coordinators from each of the participating institutions.

The resources available from the consortium are primarily technical assistance services for planning, research, and training activities. Resources also exist for the procurement of local consulting services and for some equipment acquisition.

The project is coordinated for the United States Agency for International Development by the cognizant technical officer in Washington, D.C. and the USAID Education Officer in the Sana'a mission. Coordination of IEES activities for the YAR is conducted through its Ministry of Education representatives.

2.0 EHR CONDITIONS IN YEMEN

This section establishes the context for the IEES activities in the Yemen Arab Republic in terms of the present status and plans of the EHR system. The source for

the information contained in this section is the EHR Sector Assessment Report (January, 1986). Where appropriate, data and interpretations have been modified or updated to reflect changing conditions.

2.1 HISTORICAL AND SOCIAL SETTING

The Yemen Arab Republic is located in the southwestern corner of the Arabian peninsula and shares borders with the Kingdom of Saudi Arabia and the People Democratic Republic of Yemen (PDRY). Its capital city is Sana'a, and the Sana'a - Taiz-Holdiah triangle is an important social and political designation as well as a geographic one. The total land area is 195,000 square kilometers and the population was estimated at 8.5 million in 1981. It was further estimated that 15 percent of the population was working abroad, primarily in the Kingdom of Saudi Arabia.

Yemenis are mainly of Semitic origin and Islam is the national religion. Approximately 50% are of the Shi'a sect while the remaining 50% are of the Sunni sect. The nation is divided into twelve political governorates which are further subdivided into administrative districts.

Formally independent since 1918, Yemen, under the government of the Hamid al-Din dynasty, placed little emphasis on formal social or economic development activities. Civil war existed from 1962 through 1968 culminated in victory for the Republican regime. By 1970, national reconciliation has resulted in the proclamation of the national constitution. Prior to the 1962 Revolution, Yemen existed as one of the most isolated nations in the world. Tribal traditions and conservative administration had left Yemen with a poorer education system, roads, and communication networks, etc. than even less-developed nations of Africa and Asia enjoyed.

Prior to the 1940s the educational system was limited to the principles of Islamic law, emphasizing basic reading and writing and classical Arabic literature. In the mid-1940s it was estimated that over 500 schools existed, the majority of

which were Koranic (Katateeb) schools, which provided limited training in science and mathematics. At that time the capital city of Sana'a had only seven schools, five of which were at the primary level. The only other secondary educational institutions existed in Hodeidan and Taiz.

2.2 FISCAL CAPACITY

The present status of the Yemen economy can be summarized by six economic conditions. These conditions represent both opportunities and constraints for the government in its effort to improve overall quality of life for the Yemeni citizens. These conditions are as follows:

External Efficiency

The economy of the YAR is highly dependent on the economic conditions in other nations. For example, the personal income of over one million Yemenis is the result of employment in other Arab Gulf States; principally the Kingdom of Saudi Arabia. The educational system and other social services are heavily staffed by expatriate personnel whose salaries are sometimes paid directly by other Arab Gulf States. Yemen has become a major importer of agricultural products and foodstuffs. It is primarily dependent on other nations for all its high-level technology necessary for its development efforts. Finally, the YAR is primarily reliant upon foreign donors for financing of both capital and recurrent costs of its developmental plans implemented to date.

Small Industrial Base

As a result of remittance income which has rapidly increased personal incomes, Yemen has made an economic transition from an agrarian society to a service/retail economy. Because the transition has taken place without the economy passing through a stage of industrial development, this has led to the previously discussed dependence on imports and a negative balance of foreign trade and payments.

Limited Skills Workforce

The scarcity of skilled manpower is in part the result of the country's lack of industrialization which has reduced the opportunity to develop such a workforce. In addition, the fact that the present education and training systems have existed for only 23 years has not provided sufficient time to develop a necessary number of skilled workers to staff both governmental and private sector organizations. The demand for highly paid unskilled workers in neighboring nations has served to entice many Yemeni males to pursue immediate employment opportunities as opposed to acquiring formal schooling.

Three cultural factors have also contributed to difficulties in developing an adequate supply of skilled labor. First is the common belief that education is only valuable if pursued through the university level. Secondly, there exists a general skepticism toward schooling which is further strengthened by the large number of non-Yemeni educators. Finally, there is a lack of consensus regarding the role of women in education.

Deemphasis of Agriculture

Over the past two decades the YAR has shifted from a net exporter of food products to a net importer. Although agriculture remains a major occupation in Yemen, the changed nature and reduced commitment to the growing of food crops has severely reduced the country's potential for self-sufficiency. This is in part the result of three factors. First, the high salaried job opportunities in other Arab Gulf States has served to reduce the number of male workers available for farming. Secondly, the availability of cheap foodstuffs from abroad has deemphasized internal agricultural effort in spite of the fact that the government has provided protection for farmers in the form of tariffs and subsidies. Lastly, the premium prices for qat have resulted in an internal reallocation of land usage away from food crops.

Significant Levels of Informal Economic Activity

The statistics used to measure the levels of gross domestic product and personal income drastically underestimate the actual resources available to the Yemeni citizens. This is partly due to the fact that a goodly portion of the economic activity in Yemen continues to take place in the village markets which makes it impossible for the government to accurately determine the dollar value of the retails and services activities which transpire. Finally, a flow of goods and services exists which is not accounted for in the trade statistics as the result of the relatively open border with the Kingdom of Saudi Arabia.

Lack of Systematic Linkages Among Policy, Research, and Planning

Although the Central Planning Organization (CPO) has made impressive accomplishments, the organization has been beset with fiscal and manpower limitations. There exists a need for greater coordination of research efforts among the ministries including centralization of data collection and assimilation. Planning and policy need to be more closely linked to data-base descriptions of the present status in conjunction with the desired outcomes of each program area.

Although the fiscal capacity of the government has improved in recent years, existing revenue levels are only adequate for financing recurrent costs. A continued budget deficit results in part from development costs which are not covered by donor support. Although continued revenue growth is projected in the next decade, the increase does not appear to be adequate to meet anticipated public sector obligations.

Obligations for education and human resource sector expenditures are projected to increase from 23.4% of total government expenditures in 1984 to 45.6% in 1992. The EHR system will meet enrollment pressure from three sources. First, the normal increase in the age cohort, at a projected rate in excess of three percent, will result in an increase in the number of potential students. Secondly, it is

anticipated that the high income levels in rural and urban areas will promote an increased demand for schooling. Finally, as government efforts to improve educational quality take effect, both attrition and repetition should decline. Since attrition exceeds repetition, the net effect of these improvements will be a short run increase in enrollment levels.

The basic government policy related to educational finance is to provide free education to all Yemeni citizens at all educational levels. Historically, the Local Councils for Cooperative Development (LCCDs) have assisted with school construction costs, and in some instance provided all or part of teacher housing expenses. Community assistance in the form of land donations, building materials, or labor also exists.

Parents contribute to educational costs. At the primary level, school administrators may assess fees to parents for special school needs. It is estimated that parents pay an average of YR 133 per year for primary schooling. Preparatory and secondary costs for uniforms amount to YR 168 and YR 205 respectively. In addition to these direct expenses, postprimary education has indirect costs to parents in the form of lost income that their children could earn if they were not in school. This is partially offset by the fact that most schools are on double shifts allowing students in the teacher training institutes (TTIs) and Commercial Secondary programs as well as for the vocational and technical secondary education. At Sana'a University, stipends are available to defer living and housing costs for students in the Faculty of Education (FOE). Although the stipends range up to YR 13,400, the high opportunity costs associated with attending the university has led the high rate of part-time study.

Donor financing has played a supportive role in the school construction and teacher salary costs at the pre-university level. At Sana'a University, donor support has financed a majority of both capital and recurrent costs.

The bulk of nonformal education in the Yemen Arab Republic consists of the District Training Centers (DTCs) and National Literacy Campaign (NLC). These activities are principally financed by the central government, although local communities, ALESCO, and UNESCO have also played important roles.

2.3 LABOR MARKET CONDITIONS

The YAR has virtually no unemployment as a result of the continued overflow of workers to neighboring countries. Domestically, the existing incentives encourage a polar configuration of the manpower supply in educational terms. At one end, the large demand for unskilled manual laborers, coupled with the existing attractive wage and employment conditions, has created a demand for lower levels of education due to the increased opportunity costs associated with schooling. In contrast, the status and salary incentives associated with public and private sector employment have offered significant rewards only at the secondary and postsecondary levels.

Employment projections indicate that the number of workers in the formal economy will increase from 1.20 to 1.36 million workers between 1981 and 1986. The largest proportion of workers and greatest demand for new workers will continue to be in the area of agriculture, although the greatest percentage increase in demand will be in the Electricity and Water sector (12.4%) and Government Services (7.4%). Wholesale and retail trade will remain the second largest employment sector.

The two major characteristics of the Yemen labor market are the dependence on expatriate workers and the underutilization of female workers. Non-Yemeni workers fill many positions from manual to clerical to senior advisory positions. The country's extensive dependence on expatriate workers is most predominant in education where almost 9 of every 10 teachers at the pre-university level are foreign, with the majority recruited from Egypt.

Although cultural restrictions on the education and employment of women are only slowly changing, the government is fully committed to educational and

employment opportunities for women which is clearly outlined in the SFYP. An increased utilization of Yemeni women will aid in reducing dependence on foreign workers. This is an especially attractive option in terms of the teacher shortage issue.

Using the optimistic forecasts, it will be at least a decade before Yemenis will compose a majority of the primary teaching force. It may be the next century before this is true in the higher educational levels. The most serious projected manpower imbalance in supply and demand will be at the university level. A special problem will exist in terms of the production of skilled vocational and technical workers. Continued shortages are also projected in clerical and middle-level management personnel.

The solution to these manpower problems is twofold. First, the government must establish proper employment and training incentives to produce and retain the necessary worker for the YAR economy. Secondly, these incentives must become part of the labor market information program with special emphasis on distribution to parent and student. In addition, the program should be closely linked with school counseling activities.

2.4 NATIONAL GOALS, DEVELOPMENT PRIORITIES, AND EHR IMPLEMENTATION STRATEGIES

The Second Five Year Plan (SFYP) 1982-1986 cites seven broad objectives related to Yemen's national development effort. In summary, these are:

1. improve the utilization of human, natural, and financial resources in its economic development efforts;
2. increase citizen participation in planning, implementation, and evaluation of development;
3. unite the land and people in one Yemeni homeland;
4. improve the standard of living for all citizens;

5. ensure justice, job opportunities, and developmental benefits to all Yemenis;

6. improve State contributions and increase private sector contributions to the national economy; and

7. continue Yemen's participation in the promotion of regional Arab and Islamic integration.

To realize these national goals, the following educational options were identified in the sector assessment:

- implement educational policies in a manner which will assure the achievement of internal and external efficiency;
- assess the appropriateness of current teacher credentialization requirements and available options regarding alternative accreditation programs for preservice teachers without teacher training experience;
- expand teacher training programs based upon the relative cost effectiveness of the production and retention of Yemeni teachers versus the use of expatriate workers;
- emphasize the establishment of coeducational schools with secondary education available in each governorate;
- expand program participation and costs sharing in adult education programs;
- assess the feasability of parental sharing of educational expenses;
- increase the scope of nonformal education, emphasizing literacy acquisition and skill training; and
- remove barriers to the efficient participation by women in the educational system and in the economy.

The primary strategies pursued by the government to achieve these goals are as follows:

- emphasis of regionalized educational access at all pre-university levels;
- at the university level, increase dormitory space and consider branches of Sana'a University in other cities; and
- widening of postsecondary education alternatives so that students can choose among vocational, technical, and commercial education, teacher training, and other specialized training options.

2.5 OVERVIEW OF EHR SUBSECTORS

2.5.1 Primary Education

In the 1982-83 academic year over 650,000 students were enrolled in the six-year primary education cycle or scientific institutions. Although the majority of enrollments were in the governorates of Sana'a and Taiz, successful government efforts for regional access are indicated since enrollment distributions are not greatly divergent from population distributions by governorate.

While female participation in formal education is a fairly recent policy emphasis in the YAR, there are approximately 87,000 female students currently enrolled. Female enrollment is highest in the governorates of Taiz, Sana'a, and Hodeidah, and lowest in Sa'ada, Ma'rib, and Hajjah.

The government is faced with a special problem regarding educational facilities because of cultural traditions which create a preference for female-only classes. At present, a majority of male and female primary students attend coeducational schools.

There exists a large number of "incomplete schools" as the result of the practice of establishing schools with a single first grade class and adding the next higher grade each succeeding year. Only 43% of primary enrollments are in schools with all six grades. This figure is 35% for male-only schools.

A major problem in primary education is attrition and repetition. ERDC study estimates that only 21 of 100 students graduate in six years, while seven more will graduate in the next year. Repetition increases from 8% in Grade 1 to 25% in the higher grades. The major determinants of attrition identified by the ERDC include nonsympathetic parental attitudes, cultural factors, school locations, and crowded classrooms.

Although the overall student-teacher ratio is 46:1, this figure does not accurately represent conditions across grade levels where a 100:1 ratio may exist

in Grade 1 to only 5 to 10:1 in the higher grades. The Yemen teaching force is primarily composed of expatriate males. In 1982-83 only 15% of the primary teaching staff were Yemeni. Women constituted 23.7% of the non-Yemeni teachers, while representing only 6.9% of the Yemeni staff.

While present primary facilities are adequate for current demands, a serious shortage is projected for the next decade. The government will be unable to finance new capital expenditures and will be severely constrained in meeting the recurrent primary education costs.

The major policy options for primary education are to:

- continue the development of a programmed teaching system structured on the national curriculum;
- reassess the level of required teacher qualifications;
- maintain cost sharing with the community and LCCDs;
- expand educational access and equity standards;
- increase the quantity and quality of administrative school personnel.

2.5.2 Preparatory/Secondary Education

In terms of academic choices, a primary school graduate can either attend:

- an academic preparatory school,
- a preparatory scientific institute,
- a primary teacher training institute, or
- a vocational training center.

Beyond the preparatory level students can attend various secondary schools or institutes.

In both preparatory and secondary schools the greatest student enrollments are found in the four most populated governorates. This includes approximately 83% of male and 96.5% of female preparatory students, while 71% of male and 78.7% of female secondary students are located in Sana'a and Taiz alone.

Access to the secondary arts program exists in only six governorates. However, science enrollments greatly outnumber arts in all but two governorates. Female enrollments in arts programs exceed that in science. The majority of preparatory and secondary schools are male-only and no female-only institutions exist in these four governorates. A major conclusion of the subsector analysis is that female students enrolled in postsecondary schools have similar retention rates to those as males.

In 1982/83, only 157 Yemeni teachers were at the preparatory level and 63 at the secondary level. Five of the governorates had only two Yemeni teachers in postprimary schools while over half of all Yemeni teachers at both levels are located in the Taiz governorate. Women constitute 10.9% of Yemeni teachers.

Over 90% of the teachers at both levels are expatriate with Egyptians comprising 87.1% at the preparatory level and 92.4% at the secondary level. Approximately 9% of expatriate teachers are women.

The average student/teacher ratio is 18:1 but ranges from 7:1 to 22:1 across governorates. At the secondary level, the average teacher/student ratio is 11:1 and ranges from 2:1 to 15:1. While these averages indicate an excess teacher capacity, this is offset by high, new demand which exists in urban areas.

Success rates on preparatory leaving examinations have declined over the past four years in both arts and science. In 1980, 52.6% of arts students and 58.4% of science students passed the secondary examination. These figures fell to 29% in arts and 39% in science in 1984.

Postprimary financial issues center on new construction costs, the high cost of instructional personnel, and the costs associated with greater regionalizing educational access. Although generous donor support for new school construction exists, the present need is for assistance to support the improvement of the national curriculum. Other needs of preparatory and secondary education are:

- improving instructional materials,
- increasing the teacher supply,
- improving organization and communication,
- increasing female access, and
- enhancing school and employment counseling.

Fiscal constraints on capital projects necessitate reforms focusing on efforts with low recurrent costs and no capital expenses.

Policy and research options proposed for this subsector are to:

- assess appropriate teacher qualification levels,
- institute alternative teacher training options outside the TTIs,
- develop improved instructional materials which will provide teachers with day-to-day guidance,
- increase counseling of students in terms of postschool training and employment opportunities, and
- increase female participation by using existing facilities for female-only classes on a half-day basis.

2.5.3 Vocational and Technical Education (VTE)

The VTE programs operating in the YAR consist of the two-year, postprimary and postpreparatory Vocational Training Centers (VTCs), the three-year post-preparatory Technical Secondary Schools (TSSs), and the three-year post-preparatory Commercial Secondary Programs (CSPs). In the context of this review, "vocational education" refers to training oriented toward craft-level skill development, while "technical education" refers to academic and occupational training for higher order mechanical and engineering skills.

In 1983/84, VTC enrollment numbered 417 students. TSSs had 587 students in 1982-83 with 498 students being enrolled in CSPs. Total female enrollment in all VTE programs number 123 with all of them being in CSPs. VTC programs exist in four sites; Sana'a, Taiz, Hodeidah, and Dhamar which vary in terms of size, program

offerings, quality of instructional staff, facilities, and equipment.

Sana'a and Taiz are the only sites offering TSS programs. Enrollment has tripled since 1978/79 and attrition rates are low. Student demand for TSSs is expected to increase as the result of the establishment of a Faculty of Engineering at Sana'a University. The availability of dormitories and stipends allow these schools to attract a national student body. The most popular specializations are building construction, electricity, and automotive repair.

CPSs differ from the other two VTE activities in that they operate in the same buildings as secondary education or teacher training programs. CSPs exist in six sites, four in secondary schools and two in primary teacher training institutes.

The supply of teachers for VTE is a growing concern. Expatriates comprise the majority of VTE and TSS staffs while Yemenis constitute a majority in CSPs staffs due to the employment of Faculty of Commerce and Economic graduates. This is somewhat misleading since the heavy reliance of CSP programs on "host" institution personnel make it unlikely that even CSP students will receive the majority of their instruction from Yemeni teachers.

Curriculum emphasis at VTCs is on manual training which constitutes 60% of instructional time, while classroom work makes up the other 40%. In TSSs however, instructional time is 60:40 in favor of classroom work. General business studies emphasizing accounting and communications constitutes the CSP curriculum. The curriculum at TSSs and CSPs is similar to that at academic secondary schools although the number of instructional hours is fewer.

Issues facing VTSs include further orienting the curriculum in the VTCs to more practical skills and providing students with improved employment and postsecondary training opportunities. Counseling on VTCs should be extended to primary students while TSS, CSP, and agricultural educational information should be availed to preparatory students. The YAR/VTE programs have to deal with

constraints in equipment, facilities, and curriculum. Efforts will be necessary to offset the high opportunity costs for skilled workers which make it difficult to recruit and retain adequately trained teachers.

Available policy options in the VTE subsector include:

- improving the coordination among programs and with manpower needs,
- improving VTE teacher training, employment counseling,
- developing a data base to track VTE graduates,
- organizing a national advisory board,
- developing a new national training strategy, and
- promoting increased private and parastatal participation in training responsibilities.

2.5.4 Teacher Training

Expansion of teacher training programs has been a central issue for the YAR due to the nation's dependency on expatriate personnel to staff primary, preparatory, and secondary schools. As the result of a 1981 reform, there currently are three principal sources for Yemeni-training teachers:

1. the five-year Primary Teacher Training Institutes (PTTIs),
2. the three-year General Primary Teacher Training (GPTTIs), and
3. the four-year Faculty of Education (FOE) at Sana'a University.

All three programs have a heavy emphasis on non-pedagological courses.

The PTTIs are postprimary programs designed to train primary teachers. The PTTI curriculum was expanded from a three to a five-year program as the result of the 1981 reform. In 1983, there were 37 PTTIs; 31 male-only institutions with an enrollment of 2,245 and six female-only institutions with an enrollment of 911 students. Sixteen new male-only PTTIs have been established in the last two years. The programs at these PTTIs are generally small programs attached to existing preparatory schools. Courses in the PTTI are similar in name but not time

allocation to those in academic preparatory and secondary schools. The overall teacher/student ratio is 14:1.

GPTTIs are a three-year postpreparatory program designed to train teachers for upper primary school grades. In 1983/84, there were 12 GPTTIs with an enrollment of 1,233 of which 461 were female and 772 being male. All but one GPTTI share facilities with a PTTI, but unlike the majority of PTTIs which are located in rural areas, all of these were in urban centers. Like the PTTIs, course names are similar to those in preparatory and secondary schools although the instructional time differs. The overall instructor/student ratio at GPTTIs is 4.5:1.

The training of teachers for preparatory and secondary education levels is the responsibility of the FOE. The FOE offers only the educational courses for its students while remaining coursework is taken from other faculty at Sana'a University. The FOE staff are primarily expatriates as only three of eleven members are Yemeni. The 1982/83 enrollment in the FOE was 807 of which 781 were Yemeni. Female enrollments at the FOE consisted of 132 Yemeni and 12 non-Yemeni women.

The government's commitment to expand teacher training opportunities is fueled by an anticipated increased demand for education. This commitment is further reinforced by the fact that in recent years an increasing number of expatriate teaching personnel have become the direct fiscal responsibility of the YAR government. Recent reforms have increased teacher training incentives and expanded TTI locations. For example, larger subsidies are paid to science in contrast to arts trainees. Subsidies are YR 8,200 for PTTI, YR 10,600 for GPTTI, and YR 13,400 for FOE, and are designed to cover living costs. In addition, expenses for clothing, travel, housing, and books are also paid. The latter two subsidies are paid only at the FOE. Low attrition rates in these programs are in part due to the generous stipends.

Although these reforms appear to be succeeding in increasing the number of teacher trainees, concerns exist regarding their effect on the long term problem of teacher retention. The high opportunity cost for males in particular with the equivalent of a secondary education suggest that teacher attrition may occur after teachers have fulfilled their service requirement.

The sharing of facilities and joint teaching in PTTI/GPTTI or PTTI/academic programs implies good utilization of physical and human resources. The divergence in cost between the teacher training programs and other academic programs is the result of the student subsidization policy. Although the relative training costs are high, long term savings may be noted due to the lower costs associated with employing a Yemeni teacher in contrast to expatriates. As government programs increase teacher retention, budget savings will also increase.

The major issues in this subsector relate to the questionable ability of current teacher training programs to meet increasing teacher demands. Thus, it seems feasible to explore certification alternatives to increase the teacher candidate pool. Teacher retention is another major issue in this subsector. Determining the adequacy of current teacher salaries to retain teachers is needed.

The major research and policy options are to:

- identify alternative means of credentialization,
- review the efficiency of present qualification requirements and salary levels in terms of retention,
- incorporate teacher preparatory curricula more closely with existing academic programs, and
- promote greater recruitment of female teachers and teacher trainees.

2.5.5 Higher Education

Postsecondary education in the YAR is provided by Sana'a University, the National Institute for Public Administration, and the Police College. In addition, foreign study is available under government and donor financing.

The University was founded in 1970 with two facilities, the Faculty of Shari'a and Law and the Faculty of Arts and Sciences. In 1973, the latter faculty was divided into two faculties and the new faculty of Education was added. The Faculty of Commerce and Economics was created in 1974. Both the Faculty of Medicine and the Faculty of Engineering were established in 1983, while 1984 operations began in the Faculty of Agriculture.

Originally under the authority of the MOE, the University became an autonomous institution headed by a governing council in 1974. The President of the Council is the Minister of Education. The University's development has had major support from Egypt in terms of faculty and Kuwait as a consistent funding source for capital expenditures.

Students at the University are predominantly Yemeni (97%), males (88%). The largest proportion of female faculty are in Arts (36%) and Commerce and Economics (21%), while the lowest percentage of females are in the Faculty of Shari'a and Law (8%).

Enrollment data indicates high levels of student attrition in all University faculties with the noted exception of Education where subsidies reduce this phenomenon. The high incidence of repetition is partially the result of the fact that many students engage in part-time study so that they may work and contribute to the support of their families. Thus, repetition is not the result of academic failure but simply the affect of taking two or more calendar years to complete an academic year.

Estimated annual costs for University staff is approximately YR 20,000, not including subsidies for FOE students, which would increase this estimate 50 to 75%. Also included is estimated personal budget expenses of YR 11,000 per year.

Foreign study is a popular option which attracts, what some observers feel, are many of the best students. Approximately 4,600 were pursuing degree work

in some 13 specializations in over 21 countries during 1982-83. The most popular degree programs are in engineering and agriculture and the frequented countries are Egypt and the Kingdom on Saudi Arabia.

Residential space availability at the University is a major issue in this subsector, and as such, the creation of new facilities was outlined as a key goal in the SFYP.

Although the policy and research options are less clear in this subsector than in others, they include:

- increasing enrollments and Yemeni instructional staff;
- curricula revisions which would aid in meeting the existing manpower needs;
- evaluating students and instructors, and the provision of long-term staff development for instructors;
- developing and using internal planning data;
- promoting the employment of more female instructors and administrators;
- increasing the use of facilities and equipment; and
- promoting full-time study as the norm for University study.

2.5.6 Nonformal Education

For purposes of the EHR assessment, nonformal education (NFE) was defined to include programs designed to eradicate illiteracy and support basic adult education training. More generically, the term was defined as "any learning activity, outside the structure of the formal education system, that is organized to achieve specific and explicit education or training outcomes."

The 1975 census estimated that 87% of Yemenis are functionally illiterate. Literacy estimate for males was 25%, while female literacy was less than 2%. These low skill levels in reading and writing are a result of the pre-revolutionary government's failure to provide educational opportunities for Yemen citizens. In

1982, the government initiated the National Literacy Campaign (NLC), a twelve-year plan to create universal literacy in the YAR. Goals for the first five-year plan (1982-1987) include a 50% literacy rate and an enrollment numbering 1,250,000. In spite of this substantial effort, illiteracy remains a severe problem.

A second major NFE initiative has been the implementation of the District Training Centers (DTCs), which are designed to provide introductory level training in many fields such as agriculture, electricity, carpentry, automotive mechanics, construction, handicrafts, health, nutrition, as well as basic literacy training. In 1982/83, there were 13,329 participants in programs at seven centers with 3,944 having completed training.

Enrollments in these programs are predominantly male. In 1983/84, there were 87,863 male registrants as compared to 22,059 females. Attrition was somewhat higher for males (26.8%) in these programs as compared to females (22.7%).

The NCL curriculum was originally designed to incorporate skills training but this aspect has only been partially implemented due to fiscal constraints. The major curriculum areas of the NLC are literacy, numeracy, and religious studies. At some locations skill training in sewing is offered to women. The basic NLC instructional sequence is to conduct three 40-minute sessions a day, six days a week, six months a year, over a period of two years. A special two-year follow-up program designed to promote skill-equivalency with primary school, is available after program completion, although it is not a first of the NLC. All NLC instructors are primary school teachers working in addition to their primary school responsibilities, although some teachers have not received adult training instruction.

The DTCs curriculum varies by skill specialization although the basic structure involves an eight-month instructional sequence. Men attend afternoon classes, while women attend evening classes. Several special skill courses,

however, are on an intensive four-month, four hours a day schedule. Expatriate teachers constitute the majority of DTC instructional staff although literacy trainers are more typically locally-employed primary school teachers.

NLC and DTC programs were originally designed to share existing facilities, but the availability of World Bank funding has led the DTCs to construct special-use buildings. The cost for additional DTCs is estimated to be as high as US $1 million, inclusive of land, equipment, and furnishings. Recurrent salary costs for a single DTC appears to be more responsible to clients than that of the NLC, since it combines both skill and literacy training in response to the nation's social and economic needs while placing less time demands on clients. However, the organizational costs of the DTC's are more reflective of formal than nonformal educational programs.

Other nonformal programs outside the NLC are explicified by the LCCDs and the cooperative operated by the General Federation of Local Councils for Cooperative Development. The programs vary in length from several weeks to six months and cover skill areas such as midwifery, rug making, machinery usage and maintenance, electricity, welding, and literacy.

The major policy and research options for this subsector include:

- expanding all literacy programs to include basic skills training,
- continuing the emphasis on literacy programs,
- continuing required teacher training for NFE instructors,
- improving usage of existing facilities and equipment,
- investigating the use of media in literacy education, and
- acquiring rural NLC and DTC participation.

3.0 RATIONALE FOR IEES ACTIVITIES

3.1 TARGET OPPORTUNITIES

The two goals of the IEES Project in Yemen are to assist the YARG to:

1. increase its capacity to plan, develop, deliver, and monitor quality programs in the area of education and human resources development; and

2. improve both the external and internal efficiency of its educational system.

The specific needs of Yemen within these two areas were identified through the EHR Sector Assessment, conducted in the fall of 1984, and reviewed with government officials in the fall of 1985. The major problems identified include:

1. The shortage of current, reliable, and appropriate data on which to base decisions. At present, the EHR sector experiences problems of data quality, availability, and utilization.

2. The different access to schooling, particularly between males and females.

3. High attrition and repetition of students, particularly at the primary level.

4. The lack of effective incentives to retain teachers in teaching.

5. The financial consequences of Yemenization of the teaching force.

6. The need to improve the quality of instruction students receive.

Based on the findings of the sector assessment and subsequent sector assessment review, the most appropriate opportunities for IEES assistance appear to be in three areas:

1. Improved planning and management of education and human resources development, particularly in the Ministry of Education, the Educational Development and Research Center (ERDC), Sana'a University and the Ministry of Civil Service and Administrative Reform;

2. Teacher recruitment, training, and retention; and

3. Literacy and income generation training, particularly as this can be accomplished through nonformal education. This area of concern will be addressed during the early years of the IEES Project through long-term planning activities. More specific Project activities in literacy and income generating training will be developed in later years of the Project.

Instructional materials development, production, and implementation was also identified in the sector assessment as a priority area for technical assistance. However, USAID/Yemen and YARG already are developing plans for a bilateral curriculum implementation project. Consequently, the IEES project will concentrate its efforts and resources in the areas identified above. Where appropriate, IEES activities will be designed to support and assist the activities of the bilateral project.

The rational for selecting these areas is discussed below:

Improved Management of EHR Development

The management problems experienced by the MOE stem from three sources:

1. the rapid growth of the education system;
2. the lack of adequate administrative and management training of school and ministry level personnel; and
3. the shortage of reliable information on which to base decisions.

Between 1973/74 and 1981/82, primary school enrollments increased by an average annual rate of 32.7 percent. From 1982/83 to 1994/95, enrollments may increase by as much as 323%, from 602,202 students to 2,546,374. Enrollment increases at the preparatory and general preparatory levels are projected to be as high as 454% and 590%, respectively. This rapid growth has exceeded the capacity of the MOE to train or staff schools with Yemeni administrators.

The sector assessment found that while the quality of management within the EHR Ministries and higher level institutions is of critical concern, the major administrative problem in the EHR system is the proper leadership for the primary, preparatory, and secondary schools. The problem is particularly dramatic at the primary level where many schools have no designated administrator at all and few have a full-time administrator. This situation has a detrimental affect on student

and teacher morale and discipline, detracts from data collection activities, and is a barrier to improved implementation of the national curriculum. The sector assessment recommends that inservice teacher training give a major focus to principles and practices of educational administration.

A similar problem is encountered at the Local Education Centers and the Governorate Education Offices (GEOs). Those agencies lack manpower, those assigned as supervisors have not received appropriate training, and the lack of transportation has seriously hampered supervisory visits to local schools.

The need to develop more effective management structures is recognized by the leadership within the Ministry. However, two factors impede development of an effective management system:

1. A lack of reliable, current, and appropriate data about the current status and trends in education enrollments, resources, and national labor supply and demand; and

2. a lack of personnel trained in the appropriate types of analyses to assist in the formulation and evaluation of policy alternatives in response to the trends identified.

Teacher Retention and Recruitment

The pressure for a rapid increase in the number of Yemeni teachers stems from three sources. First, school enrollments are increasing rapidly, resulting in an escalating demand for teachers at all levels. Second, attrition of Yemeni teachers has been high due to alternative employment opportunities available to trained personnel, requiring frequent replacement of teachers. Third, the majority of teachers are non-Yemeni. The MOE is committed to a policy of Yemenization and seeks to replace expatriates with Yemeni teachers. The importance of this Yemenization policy is heightened since, in recent years, an increasing number of expatriate teachers have become a direct financial responsibility of the YAR government. The combined effect of those factors is a severe shortage of Yemeni teachers. The present system of teacher preparation is almost certain to be unable

to meet the new demands. At the preparatory and secondary levels, the present system will be unable to meet even the replacement needs at all schools.

YARG is pursuing two strategies to encourage students into teaching careers. First, rather substantial stipends were introduced in 1981 to attract students into teacher training. This incentive system has been successful in attracting entrants into teacher training at the TTIs and the University and retaining them once they enroll. However, while providing a strong rationale for participation in teacher training, the incentives may not help stem career attrition among teachers once they complete their training.

In 1985, to reduce teacher attrition, YARG issued a decree reducing the opportunities for teachers to be employed by private or public agencies other than the MOE. The impact of this policy on teacher supply has not yet been determined.

Literacy and Income Generation Training

The 1975 census estimated that 87% of the YAR population was functionally illiterate. This high level of illiteracy has posed a serious impediment to the development of the modern sector of the economy. Consequently, the YARG has assigned considerable importance to nonformal education as a means of encouraging literacy, both in the adult population and in the large population of school-age children (over 50%) who are not achieving literacy within the formal system. Two programs have been undertaken, the National Literacy Campaign (NLC) and the District Training Centers (DTC).

The NLC emphasizes literacy, numeracy, and religious studies and takes two years to complete, with an additional two-year follow-up course available. Due to financial reasons, it has offered little skill training. The excessive length of the training and lack of skill training tied to the literacy and numeracy training has resulted in lower enrollments and higher attrition than anticipated.

The DTC is an eight-month instructional sequence which combines literacy, numeracy, and skill training. In that respect, it is more responsive to client interests. However, the costs of the DTCs are high--more representative of the cost levels associated with the formal education system.

It is essential that the NLC and DTC programs develop instructional strategies that are realistic in terms of government resources, client interests, and the social and economic needs of the nation. Serious study must be given to ways of expanding all literacy programs to include basic skills training and emphasize functional literacy rather than formal school equivalence.

An IEES focus in these three areas--improved management of EHR development, teacher recruitment and retention, and literacy and income generation training--are consistent with the priorities of YARG, given that a curriculum enhancement project is being undertaken under a separate bilateral agreement between YARG and USAID/Yemen. Further, these activities are complementary with other activities of USAID/Yemen and other major donors.

It is anticipated that the research, development, and training conducted through IEES activities will support and enhance the curriculum implementation activities under the bilateral project. This has already occurred (a) as findings from the sector assessment have contributed to the curriculum project planning, and (b) as IEES provides an economist to participate on the Project Paper team. This cooperation is expected to continue. For example, studies conducted by the IEES project, such as the impact of salary level on teacher attrition, or the types of employment secured by secondary leavers, may contribute to the planning and operation of the bilateral project. As appropriate, the IEES project is available to collaborate more closely with the bilateral project, particularly in the conduct of specific studies that would support curriculum planning and improvement activities at the school, regional, and central ministry levels.

This section identified three areas of opportunity for IEES activities. The next section discusses more specific objectives of the long term IEES work in Yemen and from that suggests a detailed plan for second-year activities.

3.2 OBJECTIVES

The objectives for IEES work in Yemen are developed within the three areas of opportunity identified earlier. It is anticipated that these objectives will be further elaborated and that additional objectives will emerge from continued IEES work in Yemen. This will occur both because of rapid economic and social changes underway in the country and because of new understandings that project personnel develop with continued work in Yemen.

Improved Management of EHR Development

Objective 1: To assist the MOE in long term planning for the education sector.

Initial IEES activities will assist the MOE to develop the education portion of the national Five Year Plan. Activities will include:

- assistance in designing the framework for the Plan;
- identification of appropriate indicators of internal efficiency, external efficiency, costs, and financing of the educational system;
- identification and analysis of existing data to use in the Five Year Plan development;
- specification of priority data needs for continued long-term planning; and
- procedures for monitoring and implementation of the Five Year Plan.

As part of this effort, IEES personnel will assist in updating:

- projections of student enrollment and flow through the education system,
- teacher supply and projected demand,
- facilities utilization,
- educational costs, and
- projected financing.

Subsequent project activities will assist the MOE to develop a 20-year plan for educational development in Yemen. This activity will involve:

- design of a framework for the plan,
- specification of data needs,
- conduct of studies that will provide key information for inclusion in the data system, and
- training in policy analysis and long term planning.

Objective 2: To assist the MOE to design, implement, and use a national information system.

Initial IEES activities will assist the MOE to design an information system that can be used by the Ministry in planning and policy analysis. The design stage will:

- identify appropriate indicators of external efficiency, internal efficiency, access, costs, and financing of the education system; and
- survey existing data sources to suggest ways to integrate available data into the system. This set of activities will be done as part of the work related to developing the Five Year Plan.

Subsequent Project activities will assist the MOE to collect and analyze data identified as high priority and to integrate these data into the larger information system. This will be accomplished through direct IEES project participation in the conduct of studies to collect data relevant to key policy issues and through the training of selected Yemeni ministry personnel.

Objective 3: To assist the MOE to conduct an Organization and Training Needs Study of the Ministry of Education

The object of this activity is to identify constraints on the communication and decisionmaking processes in the Ministry and to suggest ways these constraints can be removed. The study will consist of three parts:

1. a structural analysis, to identify functional responsibilities within and across general directorates and departments in the MOE and between the MOE and the ERDC, the Sana'a University, and the training department in other ministries;

2. a communication audit, to assess information patterns and content in relation to information needs; and

3. a manpower analysis, to identify the appropriateness of the distribution and training of staff.

The outcome of this study will be:

1. a set a recommendations for improving organizational and administrative structures of the Ministry, and

2. the identification of training needs of Ministry personnel.

Objective 4: To improve the capacity of the MOE and the ERDC to conduct research, planning, implementation, and evaluation activities.

Initial activities will concentrate on training central ministry and ERDC staff in four areas:

1. planning and forecasting;

2. data analysis and interpretation related to policy formulation;

3. economic and financial analysis, particularly with respect to the computation and interpretation of unit and cycle costs of education at different levels;

4. program monitoring and evaluation.

As central ministry personnel are trained in these areas, the focus of training will shift to governorate and eventually to regional and school level administrators. However, training for these groups will be designed by central ministry staff working with IEES consultants. This shift of responsibility for the delivery of training moves IEES into a more collaborative role with Ministry officials and recognizes that the delivery of instruction at the regional and local level should be by Yemeni personnel.

Objective 5: To assist the Ministry of Education and the Ministry of Civil Service to improve the quality of information on the relationship of education and training to employment.

One finding of the sector assessment was the need for more detailed information on the subsequent education, training, and employment experiences of graduates at each level of schooling. Such information can assist educational planning and contribute to policy discussions leading to improved external efficiency of the educational system.

A research capacity to conduct this type of study already exists within the MOE, Sana'a University, and the ERDC. However, due to the rapid growth of the education system and changes in the economy, more current information is available to support educational planning activities.

The IEES project will work with a research team drawn from these agencies to design and conduct tracer studies of subsequent education, training, and work experiences of primary, secondary, vocational, technical, and university graduates. These studies will provide both a training activity in the conduct of research and data of direct relevance to current policy discussions regarding the external efficiency of education.

In addition, IEES will assist the Ministry of Civil Service to design and conduct manpower analyses to identify the education and training needs of public sector employees. This activity will involve:

- identification and synthesis of existing data;
- specification of high priority data needs,
- training in data analysis and interpretation, and
- assistance in the conduct of tracer studies.

One goal of these activities is to assist the Ministry of Civil Service to develop a data base on public sector training needs that can be used in the needs assessment and design of future public sector training.

Teacher Recruitment and Retention

Objective 6: To assist the MOE to identify, design, and implement specific strategy to increase the recruitment and retention of Yemeni teachers.

The sector assessment identified four ways that teacher recruitment and retention might be improved. These included:

- a review and possible modification of current teacher qualification levels;
- the development of certification alternatives for secondary and university graduates who have not specialized in teacher preparation;
- increased use of female teachers, who may have lower attrition from teaching due to a lower opportunity cost; and
- an alteration of the incentive system to reward teachers for remaining in teaching rather than first for completing teacher training.

IEES and the MOE will collaborate in the design and conduct of three activities in support of this objective. These include:

- a study to assess the appropriateness of current teacher qualification levels and alternative teacher training options outside the TTIs and the University;
- a study of the current and projected impact of teacher incentive systems on recruitment and retention, looking at both the teacher training stipends and teachers salary levels; and
- a study to identify and implement a strategy for increasing the entry of females into teaching.

Objective 7: To assist the MOE to strengthen its forecasting and planning capacity, with particular attention to financial planning for the Yemenization of the teaching force.

The sector assessment suggested that, given the current rate of expansion of the formal education system, the production of Yemeni teachers will not be able to meet the demand and may not even meet replacement needs. Specific planning for Yemenization of the teaching force will involve at least four factors:

- the projected supply of Yemeni teachers,
- the costs of using Yemeni versus expatriate teachers,
- the articulation of teacher's content training with the subject area needs of the schools, and
- the ability of the MOE to reassign teachers across schools and to meet demand.

The initial project activities to address this objective will be a series of training workshops in financial forecasting that will estimate the cost implications of different rates and strategies of Yemenization of the teaching force. This will be followed with workshops oriented toward developing a management information system: (a) to help coordinate teacher assignments during a time of rapid growth of the education system; and (b) to provide data on the cost implications of different assignment patterns.

Literacy and Income Generation Training

Objective 8: To assist the MOE to identify, design, and implement-strategy for expanding the emphasis on functional literacy, numeracy, and income generation training within the nonformal education program.

This objective will be addressed through the Five Year and longer term (twenty year) Planning activities scheduled for Project Years Two and Three. More specific activities in this area will be identified in future Country Plans, as appropriate.

Objective 9: To assist the MOE to improve the quality of school instruction by assisting and supporting efforts of the bilateral curriculum enhancement project.

The sector assessment identified improved implementation of the national curriculum as a priority concern within primary, preparatory, and secondary education. Specifically, it recommended improvement of the instructional materials used in the schools. Consequently, curriculum improvement has become the focus of

a YARG-USAID bilateral project. While IEES is not the primary source of technical assistance to this project. IEES activities will assist and support efforts of the project.

This already has occurred as the sector assessment conducted by IEES contributed to the needs assessment and rationale for the bilateral project. Additionally, IEES will provide an economist to assist in the development of the Project Paper, which will specify the design of the proposed project. Results of the studies and training workshops to be conducted through the IEES project will continue to assist the bilateral project as IEES activities yield improved data on the education system and trained personnel which are available to that project. Additionally, the IEES project will support the bilateral project through other research and evaluation activities as appropriate, during the course of the bilateral project.

These objectives will be addressed through three types of activities over the life of the project:

1. training activities to provide appropriate Yemeni personnel with necessary background and skills to examine and respond to the issues of educational improvement,

2. research and development activities to further define relevant issues and formulate appropriate interventions, and

3. implementation activities in which IEES supports MOE efforts to initiate new or revises programs in the areas identified for improvement.

The detailed activities for Years Two and Three continue IEES work to achieve the eight objectives described above. During the second and third years of IEES, specific project activities will be of three types:

1. training, directed primarily to central ministry personnel,

2. research and development activities, as the basis for formulating more specific interventions, and

3. generic project activities designed to parallel those taking place in other countries.

DETAILED PLANS FOR YEAR TWO ACTIVITIES

Research and Development Activities

Research and development activities during Years Two and Three will identify opportunities to improve the capacity of the MOE and the ERDC to collect, analyze, and report data, particularly data on student and teacher flow and on the cost and financing of education. Additionally, activities will assist the MOE to develop long term planning for educational development in Yemen. Two research and development activities are scheduled for Year Two.

1. Assist the MOE to develop the Education contribution to the YAR Third Five Year Plan. (2 pm)

IEES will provide personnel to collaborate with MOE personnel to:

- further refine the framework to be used in the education Five Year Plan;
- update enrollment projections, teacher supply and demand statistics, facilities usage, and cost projections which describe the current and projected condition of education;
- assist in formulating policy and program initiatives that should be undertaken by the MOE and the YARG during the period of the Plan; and
- assist in the design of a monitoring and evaluation plan to monitor implementation of the Plan.

As part of this planning activity, staff will assess the adequacy of available data and identify priority areas for further data collection, analysis, and synthesis. The outcomes of this activity will contribute to:

- immediate needs of the Five Year Plan development,
- the longer range (twenty year) planning activity scheduled for Year Three, and
- the design of the educational information system being planned by the MOE.

2. Assist in Bilateral Education Project Paper Development. (1 pm)

The IEES project will provide the services of an educational economist to assist the MOE and USAID/Yemen in developing the design (e.g., Project Paper) of the bilateral curriculum improvement and implementation project for Yemen.

Generic Project Activities

3. Sector Assessment Review. (1.5 pm)
   Completed in October, 1985

4. Country Plan Development for Year Two and Three. (1.5 pm)
   Completed in February/March, 1986

DETAILED PLANS FOR YEAR THREE ACTIVITIES

Research and Development Activities

1. Assist the MOE to develop a long range plan for educational development in Yemen. (1 pm)

An IEES consultant will work with the MOE staff to:

- design a framework for a twenty year strategic plan for educational development in Yemen;
- help formulate policy and program initiatives for long term educational development;
- help devise implementation plans for the proposed policy and program initiatives;
- formulate a program of policy analysis and program evaluation that will monitor the impact of these initiatives; and
- identify the information and data needs associated with implementing the long term plan.

The planning activity will contribute to both the development of a long term plan for educational development and to design of the Educational Information System being developed by the MOE.

2. Assist the MOE to design an Educational Information System. (2 pm)

The MOE Educational Information System will serve as a national data base to support policy analysis and planning at the national, governorate, and regional levels. Additionally, the data base will assist MOE officials to respond more rapidly to information requests from other ministries and agencies. Initially the data base will be composed of existing data sets available from the MOE, ERDC, Sana'a University, and other ministries and agencies. However, once the information system is designed, the Ministry can undertake studies to collect data which address high priority issues in educational planning.

The IEES activity will have four components:

1. design of a framework for a rational education data base;
2. identification and review of existing data sets, including an assessment of data quality;
3. identification of additional data needs, and an assessment of the priority associated with the collection of those data; and
4. specification of the training needs associated with analysis and use of these data.

3. Assist the MOE to conduct an Organizational and Training Study of the MOE (2 pm)

The purpose of the study is to improve the managerial effectiveness of the MOE by identifying ways to improve the structural inefficiencies and training personnel. Specific activities will include:

- a study of the ministry structure to identify the functional relationships within and across departments in the MOE and between the MOE and ERDC, Sana'a University, and the training departments of other ministries;
- a communication audit, to assess the communication flow and content relative to information needs; and
- a manpower assessment, to identify additional training needed by MOE personnel and inequities in workload exist.

The outcome of the study will include:

- a set of recommendations regarding organizational changes for improving the management capacity of the MOE, and
- the design of training activities for Ministry personnel.

Training needs identified by this study can be considered as the basis of future training activities under the IEES Project.

4. Workshop to design administrative training for headmasters (1 pm)

This workshop for staff of the In-service Training Department of the MOE will design a training session on administrative skills for local school headmasters/senior teachers. The training itself will be delivered by the In-service Department staff. Specific activities of this workshop will:

- clarify the role of the school headmasters/senior teacher.
- identify the administrative activities appropriate to the headmaster/senior teacher.
- develop training in these administrative skills.

It is expected that one area of training will instruct headmasters/senior teachers in (1) completing MOE forms, and 2) in providing accurate enrollment, staff and facilities data as requested by the MOE.

This workshop is intended to be conducted in association with the Organization and Training Study of the MOE. The workshop itself could be related in either of two ways, depending on the staffing of the Organizational and Training Study: Either (1) a separate consultant will design and conduct this activity, drawing, in part, from the fundings of the Organizational study or (2) one of the members of the Organization Study can extend for two weeks. The latter approach is preferred, since it provides the maximum continuity and linkage between the two activities.

5. Assist the MOE in (a) a Study of Strategies for Yemenization of the Teaching Force and in (b) the Design of a Regional Teacher Supply Study (5 pm)

This study will have two parts which will occur concurrently.

Part one will identify and examine alternative strategies for increasing the rate of Yemeni Teacher production. Particular attention will be given to developing cost projections for the teaching force under a series of several different assumptions concerning:

- the rate of Yemeni teacher production,
- growth in school enrollments,
- composition of the teaching force (e.g., males vs. females),
- rate of replacement of expatriate teachers with Yemeni teachers,
- altered incentive structures, and
- rate of new school construction.

Based on this information, the study will propose alternative strategies for increasing the rate and/or reducing the cost of Yemeni teacher production. Results of these analyses will be developed as a series of policy and program alternatives for consideration by the MOE.

The Regional Teacher Supply portion of the study will target the location and type of teacher training needed to meet the needs of educational development in Yemen. The design activity and eventual study will involve a consideration of teacher recruitment and retention, teacher assignment procedures, teacher incentives, and rate of Yemenization of the teacher force.

The first step in the design activity will be an assessment of the data already available from other sources. Special attention will be given to:

- data from the ERDC School Location and Facilities Study,
- preliminary results of the 1986 census (if available), and
- the data base compiled with the Educational Information System.

If adequate data is available, this design activity and subsequent study will concentrate on further analysis and synthesis of these data sets. If key elements

of data are missing, the design team will design a field study (including procedures for implementation and analysis) that will collect the needed data.

The outcome of the eventual study (or further analysis of existing data) will be specific policy and program recommendations regarding regional teacher supply.

6. Design of a Labor Force Analysis and Manpower Needs Assessment. (2 pm)

A two-person technical assistance team will work with the Ministry of Civil Service (MCS) to:

- assist in the analysis of data recently collected on public sector manpower needs, and
- identify other data bases in the MCS and across other Ministries and agencies that would help address the future manpower needs of the country.

The team will also assist the MCS to design an Employer Survey form for use with both public and private sector employees as a means of extending the data base. The MCS staff will collect the Employer Survey data after the conclusion of this team activity. Funding of this activity will be shared by USAID/Yemen and the IEES Project.

7. Statistical and Policy Analysis of Labor Force Data. (3 pm)

A three-person technical assistance team will assist MCS staff to analyze the Employer Survey data and develop policy and program recommendations based on the results. Specifically, the team will assist in the analysis of public and private sector data sets, the integration of the data sets, and the conduct of policy analysis based on these data. Program and policy implications will be developed for the consideration of MCS staff. Funding of this activity will be shared by USAID/Yemen and the IEES Project.

8. Design Tracer Study of School Leavers. (1.5 pm)

The IEES Project will provide two consultants for 3 weeks each to assist the

MOE and ERDC to design a series of studies which will examine the relationship of formal education to subsequent employment at different educational levels. The study will assess:

- the types of employment that school leavers find,
- the adequacy of their educational preparation for the jobs they take, and
- the on-the-job training provided by their employers.

Results of this study will be used to identify ways that the knowledge and skills provided by formal schooling can better articulate with the labor market needs of Yemen.

Training

9. Training Workshop on Cost and Financial Analysis. (1 pm)

This workshop will provide an introduction to the principles and procedures for conducting cost and financial analysis. Participants will be selected from staff members at the MOE and the ERDC who will be serving as counterparts on the latter Strategies for Yemenization Study. Direct instruction will last two weeks.

Outcomes of this training will be:

- An increased number of MOE staff capable of conducting cost and financial analyses of educational systems,
- increased skill levels among those MOE staff who will be participating as counterparts in the IEES/MOE studies that involve cost and financial analysis; and
- improved planning and preparation for the strategies of Yemenization Study, as the training workshop can assist the Project and Ministry to identify and secure data that will be necessary in that subsequent activity.

10. Training Workshop or Data Coding and Computer Entry. (1 pm) (Mission Funded)

This training workshop will assist the ERDC and MOE to code, enter, and prepare to analyze data from the national School Locations Facilities Study

currently being conducted by ERDC. This activity is undertaken to help ensure the quality of a data set that appears to address a series of current policy issues facing the Ministry of Education. This training workshop continues and extends two previous activities: (1) the data coding workshop offered to ERDC staff during February, 1986 (during the IEES Country Plan development activity) and (2) the workshop on Data Coding, Entry, and Analysis offered to four ERDC and MOE staff in Albany during July, 1986. The staff members training in Albany in the July workshop will serve as Assistance Instructors in the present workshop.

Objectives of the workshop are:

- to assist ERDC in continued development of the SLF codebook,
- to train ERDC and MORE staff in microcomputer data entry,
- to train staff in techniques to identify data coding errors and to estimate entry error rates,
- to assist ERDC staff in supervising data entry of SLF data,
- to teach applications of microcomputers for statistical analysis, and
- to provide an introduction to SPSS-PL.

This activity will be funded by the USAID/Yemen Mission.

11. Workshop on Analysis of School Location and Facilities Data. (2 pm)

This workshop will provide training on introductory data base management, statistical analysis, and microcomputer use with particular attention to helping the ERDC and MOE code, enter, analyze, and interpret data from the School Location and Facilities Study currently being conducted by the ERDC. The workshop will consist of four parts:

1. formulating research questions that have policy implications (that can be addressed with the School Location and facilities data set),
2. using data management and statistical software on microcomputers,
3. conducting statistical analysis, and

4. formulating and interpreting the results of statistical analyses.

The workshop is scheduled to occur soon after the ERDC receives its first set of microcomputers. Outcomes from the workshop will be:

- ERDC and MOE personnel trained to use the new microcomputer equipment,
- organization of the School Location and Facilities data into usable form for analysis, and
- the formulation of policy relevant research questions to guide subsequent analysis of the data set.

This workshop was conceived as the first of a series of training sessions designed to assist the ERDC to analyze and report the School Location and Facilities data in a timely and policy-revelant manner.

Generic Project Activities

12. Country Plan Development. (1 pm)

IEES Project personnel will consult with Ministry and Mission personnel to

- review IEES Project activities of the previous year, and
- design and budget specific activities for the next project year.

13. International Conference.

Each year the IEES Project sponsors a conference of selected Ministry and Mission personnel from countries in which the IEES Project is working. Details of the 1986 conference will be distributed as soon as plans are further developed.

A summary and proposed schedule of Year Two and Year Three activities is presented in Figures 2 and 3 discussed in Section 4. These activities are part of a alrger strategy for country development described in the next section.

Strategies

The long term IEES strategy will consist of three stages. These stages are organized in chronological sequence, but it is anticipated that simultaneous

activities will occur in more than one stage. In Stage I, intensive training activities will be conducted with the goal of enhancing the institutions capacity of the central administrative units of the Ministry of Education and the Educational Research and Development Center. The focus of this training will be on the coding, computer entry, and analysis of statistical data and on cost analysis. The training will be on the coding, computer entry, and analysis of statistical and on cost analysis. The training will support the long term planning, educational data base development, and educational research activities identified in this country plan. These activities were begun in Year Two and continue through the life of the project with specific training opportunities identified each year on the basis of the IEES annual plan for Yemen.

Stage II will continue the emphasis on institutional capacity development but will shift from formal training to collaborative on-the-job activities. The three major areas for collaborative activities are long term planning, research, and project design and development. In each of these exercises one or more technical personnel from the IEES project will work with a MOE (or ERDC) team of professionals under the direction of a senior MOE staff member. Project design work will include both those project activities for which YARG funds are allocated and those for which external donor support will be sought.

Based on the results of Stage II activities, IEES will assist, as deemed appropriate by the MOE, in the implementation of projects and other planned modifications in the educational system. Some of the possible areas for Stage III involvement are in-service and pre-service teacher education and the examination of alternative instructional technologies.

4.0 PROPOSED IEES ACTIVITIES

The previous section described three areas of opportunity and, within these, identified nine objectives for IEES work in Yemen. Activities to achieve these objectives are developed within a three phase strategy, moving from research and training to program implementation. This section related the proposed IEES activities back to the two overall project goals--building the capacity and improving the efficiency of education. Secondly, a general five year plan of activities is described and a detailed schedule for the second and third year activities are presented. Lastly, the manner in which IEES work in Yemen is to be evaluated is discussed.

Activities to build institutional capacity and improve efficiency overlap. Most activities contribute to both, though with different emphasis at different points in the project. Training activities are intended to improve the capabilities of individuals. As enough individuals within a department or unit are trained and these people organized within an effective management system, the cumulative impact is one of increased institutional capacity. Improved efficiency is achieved as new systems and programs which draw on the skills of these individuals are designed and implemented.

4.1 CAPACITY BUILDING ACTIVITIES

Capacity building activities are concentrated in the early part of the project and emphasize training of key personnel and the design of more effective administration systems. Three capacity building activities address needs of the MOE and the ERDC. These include:

- o training in data coding, entry, analysis, and microcomputer use;
- o training in cost and finance analysis; and
- o management training for MOE staff and for local school headmasters.

4.2 EFFICIENCY IMPROVEMENT

Inefficiencies may be caused by ineffective people trying to implement otherwise effective strategies and programs or they may be due to ineffective design of the strategies and programs themselves, such that no one, however competent, would be likely to succeed. Efforts to improve the efficiency of the educational system in Yemen must be sensitive to the differences in efficiencies due to people versus those due to program design. To the extent that the inefficiencies are due to ineffective people, the capacity building activities of the IEES contribute directly to efficiency improvements as key people receive better training.

To the extent that the inefficiencies are due to poorly devised strategies and programs, efficiency will be improved through IEES help in designing and implementing new programs. Four program implementation activities are anticipated over the life of the project:

1. Assist the MOE to implement an educational information data base that can be used for planning, policy analysis, and program evaluation.

2. Assist the MOE with the training necessary to help implement the organization and structure adopted by Ministry following the Organization and Training Needs Study of the MOE.

3. Assist the Directorate of General Education to devise and implement a scheme to increase Yemeni teacher production.

4. Help the Ministry of Civil Service develop and implement a more effective procedure for determining the labor force needs of Yemeni.

Figure 4.1 summarizes the specific activities described in this country plan and uses a coding scheme to tie each activity to the target opportunity, objective, and strategy to which it relates. Additional activities will emerge and current plans will be modified as new information is available.

4.3 SCHEDULE OF ACTIVITIES

4.3.1 Five Year Plan

Figure 4.2 provides a five year plan for the work in Yemen. This general plan will be re-examined annually. Specific activities for each year will be developed in further detail in each year's annual plan. The arrows in Figure 5 help identify particularly important relationships among activities within and between years.

4.3.2 Second Year Detailed Plan

The detailed schedule for activities in years two and three is presented as Figure 4.3 and 4.4. The proposed activities include 7.5 person months of short term technical assistance in year two and 21 person months of short-term technical assistance in year three (18 person months of Year three activity will be funded by the IEES Project, three will be funded by the Mission through the IEES Project).

4.3.3 Evaluation Milestones for Year Two Activities

Figure 4.5 presents both (1) short and long term outcomes of years two and three activities and (2) indicators of the achievement of those outcomes that serve as evaluation milestones for year two activities.

4.3.4 Formative and Summative Evaluation

Efforts to evaluate the impact of external interventions to improve the institutional capacity and efficiency of a bureaucracy have had limited success. Even well designed, carefully implemented projects, when evaluated, fail to document the levels of effect that were expected.

One factor that might explain this outcome is the design of the evaluations relative to realistic project expectations. In the IEES project, even if the research is insightful, the recommendations sound, the participants in the training immediately apply their new knowledge and skills, and program implementation

efforts are well received, the impact of the project will result only gradually. The desire for short-term measurable effects denies the complexity of the activities and fails to understand the nature of the project. The IEES is planned as a five year effort. The most important role of evaluation during the early phase of the project is to provide information to AID/Washington and IEES as the basis for modifying project design, emphasis, or operation.

Another factor which accounts for the failure to document effects is the lack of consensus about the criteria of improved institutional capacity or efficiency. Observers differ in what outcomes they believe are important to monitor or what amount improvement is regarded as indicative of success.

A third factor affecting evaluation findings is that the activities conducted under IEES involve many actors and agencies, many of whom are influenced by incentive systems and external contingencies beyond the control of this project. The IEES evaluation must distinguish differences between problems indicative of a weakness in project design, those attributable to poor performance within an otherwise workable design, and the intervention of external factors beyond the issues of design or competence of implementation.

Evaluation is a systematic process designed to produce descriptions and judgments for decisionmaking. The evaluation of IEES activities will involve both internal and external evaluation activities. The external evaluation will be externally contracted directly by AID/Washington. IEES will assume responsibility for implementing internal evaluation procedures. Within Yemen, the IEES evaluation will address both formative and summative issues in project efficiency and effectiveness.

The principal recipients of the formative evaluation are the IEES project management and appropriate AID/Washington personnel. The project recognizes the legitimate interest of other groups in the evaluation results, including

USAID/Yemen, YARG, and other donor agencies. Distribution of evaluation findings of these groups will be through AID/Washington and project management personnel.

Two central questions focus the evaluation of the long-term (five year) effort:

1. To what extent do the technical assistance and training activities delivered through the project improve the knowledge, skill level, and professional capacity of individual participants.

2. To what extent do the technical assistance and training activities delivered through the project improve the institutional capacity and efficiency of the Yemen Ministry of Education.

The first question deals with enhancing the capacity and efficiency of individuals. The second question concerns the improved capacity and efficiency of institutions. Meaningful answers to these questions may exceed the time frame of the project. However, the evaluation should be designed to collect data that will be needed to address these issues.

The emphasis of project-initiated evaluation will be on formative evaluation directed at improving the on-going functions of the project. formative evaluation activities will occur annually as part of annual plan development. IEES personnel will solicit the reactions, judgments, and suggestions of the YARG, USAID/Yemen, and AID/Washington personnel as to the adequacy and impact of IEES activities in Somalia. In addition, a three person week formative evaluation activity will be conducted in year three of the project to systematically survey the reaction of key personnel in the YARG, AID, and other donor agencies as to the appropriateness, efficiency, and impact of IEEs activities in Yemen. The formative evaluation activities focus on (1) the extent to which the project is being implemented as planned, and (2) ways in which the design and/or implementation should be modified to increase the likelihood of project success.

At minimum, the formative evaluations will address the following issues:

o the relationship between IEES personnel and MOE staff;

- The integration of IEES short-term technical assistance personnel into Ministry activities;
- The appropriateness and adequacy of trainee selection procedure for IEES sponsored training workshops;
- The integration of IEES activities with Ministry programs;
- The relevance and effectiveness of the training delivered in IEES workshops;
- The relationship of IEES personnel with USAID/Yemen personnel;
- The adequacy of logistical support for field activities provided by IEES, USAID/Yemen, AID Washington, and the YARG;
- the receptivity of YARG to recommendations arising for IEES R&D activities;
- The extent to which project design activities adequately anticipate issues in program implementation.

Two person months of project-sponsored summative evaluation are scheduled for early in the fifth year of the project to supplement AID/Washington sponsored external summative evaluation. The IEES summative evaluation will address:

(1) whether the project should be continued into a second five year phase, and

(2) what experiences in this project should inform the design of the follow-on project.

ANNEX

SCOPE OF WORK

Activity Name: Five Year Plan Development

Purpose: To assist the MOE to develop the Education contribution to the YAR Third Five Year Plan.

Rationale and Description: To assist the MOE to develop the Education portion of the national Five Year Plan. The activity will draw heavily from the EHR Sector Assessment conducted during 1984.

Scope of Work: Three IEES consultants will work with MOE staff to (1) design a framework for a five year strategy of educational development in Yemen; (2) help formulate policy and program initiatives for educational development in the next five years; (3) help devise implementation plans for the proposed policy and program initiatives; (4) formulate a program of policy analysis and program evaluation that will monitor the impact of these initiatives; and (5) identify the information needs associated with implementing this plan.

Schedule: April, 1986

Resources: Three persons for one month each to include:

Educational Economist	1 person for one month,
Educational Planning Specialist	2 persons for one month each.

Outcomes: A written document submitted to the MOE that can be used by the MOE in the MOE contribution to the Third Five Year Plan.

Activity Name: Assist in Bilateral Education Project Paper Development

Purpose: To provide an educational economist to assist in the development of the Project Paper for the bilateral education project.

Rationale and Description: Coordination of IEES activities with those of other educational development initiatives is a continuing priority for the IEES Project. The IEES project will provide an economist to assist in the project paper development. This helps the bilateral educational project incorporate and build from the findings of the Sector Assessment while, at the same time, ensuring that the IEES Project remains cognizant of other projects in the education sector.

Scope of Work: The IEES economist will work as a member of the Project Paper team with primary responsibility for the economic analysis.

Schedule: Fall, 1986

Resources: One person for one month

Outcomes: The outcome will be a written economic analysis which will be incorporated as part of the Project Paper.

Activity Name: Workshop on Cost and Financial Analysis

Purpose: To provide background training in cost and financial analysis to MOE staff who will be serving as counterparts in the latter strategies for Yemenization Study.

Rationale and Description: This workshop will help ensure full participation of Yemenis staff in latter IEES activities that require skills in cost and financial analysis. The workshop will provide an introduction to principles and procedures for conducting cost and financial analysis and for relating these types of data to other types of information of concern to the MOE.

Scope of Work: Direct instruction will last two weeks and will involve 10-15 MOE, EDRC, and MCS staff.

Schedule: February, 1987

Resources: The IEES project will provide one consultant for one month. This time allocation will cover workshop preparation, delivery, and individualized consulting with MOE departments as appropriate.

Outcomes: The short-term outcome will be that 10-15 MOE, ERDC, and MCS staff will have improved skills in cost and financial analysis. The long-term outcome will be the fuller participation of YARG staff in subsequent studies, particularly the strategies for Yemenization of the Teaching Force Study with IEES scheduled for later in the Year.

Activity Name: Development of an Educational Information System

Purpose: To assist the MOE to design an Educational Information System.

Rationale and Description: The MOE information system will serve as a national data base to support policy analysis and planning at the national, governorate, and regional levels. Initially the data base will be composed of existing data sets available from the MOE, ERDC, and other Ministries and agencies. Once the information system is designed, the MOE can undertake studies to collect data which address high priority issues in educational planning.

Scope of Work: The consultants will (1) design the framework for an educational data base; (2) identify and review existing data sets; (3) assess the quality of those data sets; (4) identify additional data needs; and (5) specify the training needs associated with analysis and use of these data.

Schedule: July, 1986

Resources: Two persons for one month each, both with background and experience in educational planning and large scale data analysis.

Outcomes: The short-term outcome of this activity will be a written document addressing the points outlined above. The long-term outcome will be (a) the development of the data base, collection of data identified as high priority but not yet available, and use of these data in policy discussions in the MOE.

Activity Name: Organizational and Training Needs Study of the MOE

Purposes: The purpose of this study is to assist the MOE in conducting an organizational analysis to: (1) identify constraints in the communication and decisionmaking processes in the MOE; (2) assess the equity of workload distribution; and (3) determine training needs of the MOE staff.

Rationale and Description: The managerial efficiency of the MOE is sometime lessened by its structure and/or the lack of adequately trained personnel to perform necessary functions. This study will identify which constraints are the result of the MOE's structure as well as those which can be more easily be remediated with appropriate training.

Scope of Work: The study will examine; (1) the organizational structure of the MOE; (2) information flow between and within departments; (3) equity of workload distribution; and (4) training needs of MOE staff.

Schedule: October, 1986

Resources: Two persons for one month each.

Organizational/Educational Development Specialist 1 person month

Educational Administrative Planner 1 person month

Outcomes: The short-term outcomes will be a report which outlines: (1) current constraints to organizational efficiency of the MOE; (2) strategies for improving structural efficiency of the MOE; (3) procedures for improving information flow within and between departments; (4) identification and design of training activities for MOE personnel. The long-term outcome of this activity will be the use of these findings in the design and conduct of management training workshop proposed for subsequent years of the IEES project.

Activity Name: Design of Administrative Training for Headmasters

Purpose: To assist staff of the Inservice Training Department to design a training session on administrative skills for local headmasters/senior teachers.

Rationale and Description: The Sector Assessment identified the lack of administrative training to be an important impediment to efficient management at the school level. This activity will address that training need in a manner that will ensure that eventual training of headmasters/senior teachers will be conducted by Yemeni MOE personnel in Arabic.

Scope of Work: The activities of this workshop will: (a) clarify the role of the school headmaster/senior teacher; (b) identify the administrative activities appropriate to the headmaster/senior teacher, and (c) develop training in these administrative skills.

Schedule: November, 1986

Resources: One person for one month, possibly as an extension to the MOE Organization and Administration study.

Outcomes: The short-term outcomes will be a written plan for the design of an administrative training workshop for headmasters;/senior teachers. The long-term outcome will be the actual delivery of that instruction by the MOE Inservice Training department.

Activity Name: Design of Labor Force Analysis and Manpower needs assessment

Purpose: To assist the Ministry of Civil Service to analyze labor force data and to collect additional data needed to assess labor force training needs.

Rationale and Description: This activity will assist the MCS (1) to analyze data recently collected on public sectors manpower needs, (2) to identify other data bases in the MCS and across other ministries that would help address the future manpower needs of the country, and (3) to design an Employer Survey from for use with public and private sector employers as a means of extending this data base.

Schedule: August, 1986

Resources: Two people for one month each.

Economist
Manpower Planning Specialist

Costs for this activity will be shared by the Mission and the IEES Project.

Outcomes: The short-term outcomes will include (1) a written report to the MCS addressing the issues identified above (2) development of an Employers Survey form, and (3) a detailed plan (developed with MCs staff) on how to conduct the Employer Survey. Long-term outcomes will include the implementation of the Employer Survey and use of the subsequent in manpower planning and identification of training needs.

Activity Name: Statistical and Policy Analysis of Labor Force Data

Purpose: (a) to assist the Ministry of Civil Service to conduct statistical and policy analysis of data collected in the Employer survey and (b) to assist MCS staff in integrating the results into the larger manpower data base.

Rationale and Description: The consultant team will assist the MCS staff to analyze the Employer Survey and to develop policy and program recommendations based on the results. This activity contributes to a larger activity of the MCS in identifying training needs of the labor force and designing/encouraging programs to respond to those needs.

Schedule: November 1986

Resources: Three persons for one month each as follows:

(a) Economist
(b) Manpower Planning Specialist
(c) Data Analyst/Computer Specialist

Cost for this activity will be shared by the Mission and the Project.

Outcomes: Short-term outcomes will include a report to the MCS presenting the results of the Employer Survey and suggesting how this data can be integrated into the larger MCS data base. Long term outcomes will include the use of the results and recommendations in this report in subsequent design of labor force training activities.

Activity Name: Workshop on Analysis of School Location and Facilities Data

Purpose: To provide training and technical assistance to the ERDC and the MOE in (1) identifying policy relevant questions; (2) conducting the appropriate analyses to answer these questions; and (3) entering data into microcomputers.

Rationale and Description: Data from the ERDC's School Locations and Facilities (SLF) Study will form the basis for the national Educational Information System being established by the MOE. The training is important in ensuring that the data from this study is coded, entered, and analyzed in a timely and appropriate fashion. Additionally, the SLF data set is directly linked to the information needs in the Strategies of Yemenization Study.

Scope of Work: Two IEES consultants will design and conduct a 3 week training workshop that will; (1) assist ERDC personnel in formulating policy relevant questions to be addressed by the SLF data; (2) introduce participants to statistical analysis using microcomputers; (3) assist ERDC and MOE staff in developing SPSS-PC computer programs; (4) provide supervised practice in microcomputer data analysis specific to the SLF data; and (5) outline procedures for formatting and tabling statistical results, including graphic display.

Schedule: January, 1987

Resources: Two persons for one month each

Educational Evaluation/Statistical Specialist 1 person month

Computer Specialist 1 person month

Outcomes: The short-term outcomes will be: (1) a written codebook for the SLF data; (2) completion of training by 10-15 ERDC and MOE staff members as indicated by enrollment records; and (3) preliminary analyses of one level of data from the SLF study (e.g. primary). The long-term outcome of this activity (in connection with other IEES Project activities in this area) will be: (1) a final report on the SLF study; (2) the development of a national Educational Information System; and (3) a study on the cost of Yemenizing the teaching force.

Activity Name: Tracer Study of School Leavers

Purpose: To assist the MOE and ERDC to design a series of studies which will examine the relationship of formal education to subsequent employment at different educational levels.

Rationale and Description: The study will address (1) the types of employment that school leavers find; (2) the adequacy of their educational preparation for the jobs they take; and (3) the on-the-job training provided by their employers.

Schedule: January, 1987

Resources: Two people for three weeks each as follows:

Economist

Educational Planner

Outcomes: The short-term outcomes will be a written plan for a study of school leavers at different levels of the education system. This plan will include draft copies of questionnaires/interview protocols to be used at each education level and a detailed description of the methodology that will be employed in the study. Long term outcomes will include (a) the use of the results of these studies in long term educational planning and (b) inclusion of the tracer study data in the larger MOE educational information system.

Activity Name: Study of strategies for Yemenization of the Teaching Force/Design of a Regional Teacher Supply Study

Purpose: This activity assists the MOE to respond to the growing pressure for more rapid Yemenization of the teaching force. The study will also assist the Department of Teacher Education in planning the location and type of teacher training activities the MOE will need to provide to respond both to increased Yemenization of the teaching force and the quantitative growth of the education system.

Rationale and Description: Part one will identify and examine alternative strategy for increasing the rate of Yemeni teacher production. Particular attention will be given to developing cost projections for the teaching force under a series of different assumptions regarding the rate of Yemeni teacher production, the composition of the teaching force (e.g. males vs. females), the growth in school enrollments, altered incentive structures, and the rate of new school construction. Part two will address the location and type of teacher training needed to meet the needs of educational development in Yemen.

Schedule: March, 1987

Resources: Five person months distributed as four persons for five weeks each.

Educational Economist	2 persons for 5 weeks each
Educational Planner	1 person for 5 weeks
Teacher Education Specialist	1 person for 5 weeks

Outcomes: The short-term outcome will be a written report to the MOE detailing the findings and recommendations of the study. The long-term outcomes will be (a) adoption and implementation by the MOE of recommendations to increase the rate of Yemenization of the teaching force and (b) implementation of the proposed design of a Regional Teacher Supply study.

Activity Name: Development of Long Term Educational Plan

Purpose: To assist the MOE to develop a long range plan for educational development in Yemen.

Rationale and Description: As pressures for Yemenization of the teaching force and quantitative expansion of educational increase, the MOE recognizes that it must undertake longer range planning. This activity will extend the Five Year Plan to develop strategy for longer term educational development in Yemen.

Scope of Work: One IEES consultant will work with MOE staff to: (1) design a framework for a twenty year strategic plan for educational development in Yemen; (2) help formulate policy and program initiatives for long term educational development; (3) help devise implementation plans for the proposed policy and program initiatives; (4) formulate a program of policy analysis and program evaluation that will monitor the impact of these initiatives; and (5) identify the information and data needs associated with implementing the long term plan.

Schedule: July, 1986

Resources: One specialist in educational planning for one month.

Outcomes: The short-term outcome will be a written plan submitted to the MOE. The long-term outcome will be (a) the inclusion of the proposed activities and policies in MOE planning documents and (b) the subsequent implementation of these activities and policies.

Activity Name: Training workshop on Data Coding and Computer Entry

Purpose: To support ERDC efforts to transfer data from the School Location and Facilities (SLF) study microcomputer and prepare it for analysis.

Rationale and Description: This workshop will train selected staff of the MOE and ERDC in (1) codebook construction, (2) data coding, (3) data entry to a microcomputer, (4) cleaning of data, (5) operation of microcomputers, and (6) use of the SPSS-PC program for analyzing data. The workshop will use those MOE and ERDC staff trained in the Albany Workshop (July, 1986) as Assistant Instructors.

Schedule: August, 1986

Resources: This workshop is Mission funded and will employ one IEES consultant for one month. The consultant should be a specialist in large scale data management and survey research.

Outcomes: The short-term outcome will be 15 MOE, and ERDC staff trained in the areas described above. The longer term outcomes will be the successful transfer of the SLF data onto microcomputer and preparation of the data for analysis.

Activity Name: Annual Plan Development

Purpose: To identify and develop specific project activities for year four of IEES.

Rationale and Description: IEES project activities must be carefully aligned with the changing economic and social conditions of Yemen and the changing status of the education system. The Annual Plan Development will help assure that the general project activities identified in this country plan are designed and conducted in a way that is relevant to the needs of Yemen a year form now.

Scope of Work: The IEES consultant will collaborate with the MOE and USAID/Yemen to develop a specific plan of activities for year four of IEES.

Schedule: March, 1987

Resources: One person for one month.

Outcomes: A detailed annual work plan approved by IEES, MOE, USAID/Yemen, and AID/Washington personnel.

FIGURE 4.1

RELATIONSHIP OF ACTIVITIES TO TARGET OPPORTUNITIES, OBJECTIVES, AND STRATEGIES OF IEES WORK IN YEMEN

Department/Agency	Target Opportunity	Objective	Strategy	Description of Activity
Directorate for Planning and Research	1	1,4,7	2	Assist in Five Year Plan Development
	1	1,4,7	2	Assist in Twenty Year Plan Development
	1,2	1,2,4,7	2 2,3	Design Educational Information System
	1,2	1,2,4,7	2,3	Workshop on Integrating Existing Data Sets into Educ. Info. System
	1	1,2,4,5,7	1,2	Design Tracer Study of School Graduates
	1	1,2,4,5,7	1,2,3	Conduct Tracer Study of School Graduates
	1	2,4,5,7	1,2,3	Assist in analysis of Tracer Study Data
Educ. Research and Development Center	1,2	4,6,7	1	Training for Analysis of School location and Facilities Data
	1,2	4,6,7	2	Assistance in analysis of Sch. Location and Facilities Data using microcomputers.
	1,2	4,5,7	1	Workshop on cost and Financial Analysis
Law Department, MOE	1	3	2,3	Conduct Organization and Training needs study of MOE
	1	3	1	Workshop on Admin. and Organ. Skills for managers
Inservice Training Dept., MOE		1	1	School Administrator Training Workshop
Ministry of Civil Service	1	5,6	1,2	Assist in Analysis of Labor Force Data
	1	5,6	2,3	Design Employer Survey
	1	5,6	2,3	Assist in Policy Analysis of Labor Force Data
USAID	1,2,3	8,9	2	Assist in Bilateral Project Paper Development
Teacher Training Department	1,2	1,4,6	2,3	Study of Strategies for Yemenization of Teaching Force/Design Regional Teacher Supply Study
Vice Minister	1	1,7	2	Sector Assessment Review

FIGURE 4.1

CODING KEY

Target Opportunities

1. Improved Management of EHR Development
2. Teacher Retention and Recruitment
3. Literacy and Income Generation Training

Objectives

1. Long term planning for the education sector
2. Design, implement, and use a national information system.
3. Conduct organization and training needs study of MOE
4. Improve capacity to conduct research, planning, and implementation and evaluation activities
5. Improve information on relationship of education and training to employment
6. Increase recruitment and retention of Yemen teachers
7. Strengthen forecasting and planning capacity of MOE
8. Expand emphasis on functional literacy
9. Support bilateral curriculum enhancement project

Strategies

1. Training
2. Research and Development Activities
3. Program Implementation

FIGURE 4.2

FIVE YEAR PLAN FOR IEES WORK IN YEMEN
(Project Year: June 1 - May 31)

YEAR 1	YEAR 2	YEAR 3	YEAR4	YEAR 5
	(Workshop on Data Coding, Entry, and Microcomputer Use - July, 1986)*		Conduct Regional Teacher Supply Study (3 pm)	Assist in Analysis of Regional Teacher Supply Data (2 pm)
	(Workshop on Data Coding and entry of SIF study August, 1986)*	Workshop on Analysis of School Location and Facilities Data Using Microcomputers (with ERDC) (2 pm)	Workshop: Analysis of Sch. Location and Facilities Data Using Microcomputers II (with ERDC) (1.5 pm)	Workshop on Analysis of School Location and Facilities Data Using Microcomputers III (with ERDC) (1.5 pm)
		Design Tracer Study of School Graduates (1.5 pm)	Conduct Tracer Study of School Graduates (2 pm)	Assist in Analysis of Tracer Study Data (2 pm)
		Assist Min. of Civil Serv. in Analysis of Labor Force Data/Design of Employer Survey (2 pm)**	Implement Labor Force Manpower Needs Assessment (2 pm)	Assist with Data Analysis and Design of Training Plan (with Min. of Civil Service (2 pm)
		Assist Min. of Civil Serv. in Policy Analysis of Labor Force Analysis (3 pm)**		
		International Conference	International Conference	International Conference

* These activities will be funded by USAID/Yemen

** These activities will be funded jointly by USAID/Yemen and the IEES Project

FIGURE 4.3

DETAILED SCHEDULE OF YEAR TWO ACTIVITIES

Schedule		Activity	Level of Effort	Counterpart
85	OCT	Sector Assessment Review	1.5 pm	
	NOV			
	DEC			
86	JAN			
	FEB	Country Plan Development	2.0 pm	MOE: Deputy Minister Garada
	MAR			
	APR	Assist in Five Year Plan	3.0 pm	MOE: Dir. of Tech.Serv. al-Kimaem, Najee
	MAY	Assist in Bilateral Project Paper Development	1.0 pm	AID: Education Officer Schwartz

FIGURE 4.4

Detailed Schedule of Year Three Activities

Schedule	Activity	Level of Effort	Counterpart
1986 Jun	Design of Education Information System	2.0 pm	MOE: DIR. of Tech. Serv. al-Komaem
	Design of Twenty Plan for MOE	1.0 pm	MOE: DIR. of Tech. Serv. al-Komaem
Aug	Assist MCS in Analysis of Labor Force Data/Design of Employer Survey	2.0 pm	MCS: DIR. of Manpower al-Angeri
Sep	Workshop on Data Coding and Computer Entry	1.0 pm	ERDC: Kadok
Oct	Organizational and Training Needs Study of MOE	2.0 pm	MOE: Law Department Zaher
Nov	School Administrator Training Workshop	1.0 pm	MOE: inservice Train. Dept. Dhubi
	Assist MCS in Policy Analysis of Labor Force Study	3.0 pm	MCS: Dir. of Manpower al-Angeri
Dec			
1987 Jan	Workshop on Analysis of School Location and Facilities Data	2.0 pm	ERDC: Kodak
	Design Tracer Study of School Graduates	1.5 pm	MOE:DIR. of Tech. Serv. al-Komaem
Feb	Workshop on Cost and Financial Analysis	1.0 pm	MOE:Dir. of Tech. Serv. al-Komaem
Mar	Country Plan Development	1.0 pm	MOE: Deputy Minister Garada
	Stategies for Yemenization of Teaching Force/Design Regional Teacher Supply Study	5.0 pm	MOE:Dir. of Teacher Training Kobati
Apr			
May	(Ramadan)		

FIGURE 4.5
EVALUATION MILESTONES FOR YEAR TWO AND YEAR THREE ACTIVITIES

	Short-Term Verifiable Outcome	Indication of Short-Term Outcomes	Long-Term Verifiable Outcome	Indicator of Long-Term Outcomes
YEAR TWO				
Research and Development				
Sector Assessment Review	Government acceptance of Sector Assessment	Revised Document	Use of data and recommendations by YARG and other donors	Citation count; interviews with YARG officials and donors
Assist in Five Year Plan	Planning document prepared for MOE use	Completed Document	Use of document in MOE Five Year Plan	Document Review
Assist in Bilateral Project Paper development	Project Paper developed	Document Review	Acceptance of Project Paper	Record Review
YEAR THREE				
Research and Development				
Design of Educational Information System	Planning document prepared	Document review	Implementation of Plan	Record review; interviews with MOE officials
Design Twenty Year Plan for MOE	Planning document prepared	Document review	Use of document in future planning activities	Document review; interviews with YARG officials
Strategies for Yemenization of Teaching Force/Design Regional Teacher Supply Study	Written report prepared	Document review; interviews with the MOE officials	Conduct of Regional Teacher supply study	Final report
Design Tracer Study of School Graduates	Written plan prepared	Document review	Conduct of Tracer Study of School Graduates	Final report
Analysis of Labor Force Data/ Design of Employer Survey	Preparation of Document	Document review	Development and Implementation of Employer Survey	Document review; interviews with YARG officials
Organization and Training Needs Study with MOE	Preparation of report	Document review	Improved performance of MOE staff	Interviews with YARG and other donor personnel
Training				
School Administrator Training Workshop	10 MOE staff trained in school administration skills	Enrollment records	Improved management training skills of in-service trainers in MOE	Interviews with YARG and project personnel
Workshop on Cost and Financial Analysis	10 MOE staff trained in cost and financial analysis	Enrollment records	Improved quality of trainees subsequent participation in Yemenization of teaching force study	Interviews with YARG and project personnel
Other Activities				
Development of Annual Work Plan	Submission of Plan to AID/ Washington	Acceptance of Plan by AID/Washington		