

PROJECT EVALUATION SUMMARY (PES) - PART

<p>1. PROJECT TITLE</p> <p align="center"><b>AGRICULTURAL DEVELOPMENT SUPPORT</b></p> <p align="center"><b>IBB SECONDARY AGRICULTURAL INSTITUTE</b></p> <p align="center"><b>SUBPROJECT (ISAI)</b></p>	<p>2. PROJECT NUMBER</p> <p align="center"><b>279-0052</b></p>	<p>3. MISSION/AID/W OFFICE</p> <p align="center"><b>Sana'a, Yemen (Y.A.R.)</b></p>
<p>4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY) <b>81-4</b></p> <p><input checked="" type="checkbox"/> REGULAR EVALUATION    <input type="checkbox"/> SPECIAL EVALUATION</p>		

<p>5. KEY PROJECT IMPLEMENTATION DATES</p> <table style="width:100%;"> <tr> <td style="width:33%;">A. First PRO-AG or Equivalent FY <b>79</b></td> <td style="width:33%;">B. Final Obligation Expected FY <b>84</b></td> <td style="width:33%;">C. Final Input Delivery FY <b>85</b></td> </tr> </table>	A. First PRO-AG or Equivalent FY <b>79</b>	B. Final Obligation Expected FY <b>84</b>	C. Final Input Delivery FY <b>85</b>	<p>6. ESTIMATED PROJECT FUNDING</p> <table style="width:100%;"> <tr> <td style="width:50%;">A. Total \$ <b>16 m.</b></td> <td style="width:50%;">B. U.S. \$ <b>11 m.</b></td> </tr> </table>	A. Total \$ <b>16 m.</b>	B. U.S. \$ <b>11 m.</b>	<p>7. PERIOD COVERED BY EVALUATION</p> <p>From (month/yr.) <b>August 1979</b></p> <p>To (month/yr.) <b>March 1981</b></p> <p>Date of Evaluation Review <b>April 30, 1981</b></p>
A. First PRO-AG or Equivalent FY <b>79</b>	B. Final Obligation Expected FY <b>84</b>	C. Final Input Delivery FY <b>85</b>					
A. Total \$ <b>16 m.</b>	B. U.S. \$ <b>11 m.</b>						

B. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR

A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., airgram, SPAR, PIO, which will present detailed request.)	B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
Food Science teacher recruited	NMSU Campus Dir.	June 81
First ISAI Subproject in-service training held	NMSU Team Ldr.	July 31, 81
ISAI acquires control and access of designated lands	MOE	July 31, 81
ISAI/NMSU/CID working relations with MOE established	ISAI/NMSU/CID	Aug. 31, 81
Process for recruitment of ISAI students improved	MOE	Aug. 31, 81
Procedures for assignment of Yemeni counterpart teachers improved	MCE	Aug. 31, 81
Central YARG guidance for ISAI 1982 budget submission provided by MOE to the ISAI Director and staff	MOE	Aug. 31, 81
ISAI Subproject outreach activities scheduled	ISAI Dir. and NMSU Team Ldr.	Sept 30, 81
NMSU inputs for ISAI 82 Budget presented to ISAI Dir.	NMSU/ISAI Dir.	Sept 30, 81
Table of Organization showing ISAI position in the MOE finalized. ToO to be included in ISAI By-Laws	MOE/ISAI Dir.	Sept 30, 81
Procurement of original equipment for ISAI completed	IBRD	Dec. 31, 81
Expansion of ISAI campus facilities discussed, studied	ISAI/NMSU/AID	Open
ISAI and NMSU/CID discuss proposed Surdud Second. School	ISAI/NMSU/CID and IBRD	Open
Full schedule of construction work remaining to be completed at ISAI prepared and presented to the YARG	IBRD	Open

9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS

<input type="checkbox"/> Project Paper	<input checked="" type="checkbox"/> Implementation Plan e.g., CPI Network	<input type="checkbox"/> Other (Specify: _____)
<input type="checkbox"/> Financial Plan	<input type="checkbox"/> PIO/T	
<input type="checkbox"/> Logical Framework	<input type="checkbox"/> PIO/C	<input type="checkbox"/> Other (Specify: _____)
<input type="checkbox"/> Project Agreement	<input type="checkbox"/> PIO/P	

10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT

A.  Continue Project Without Change

B.  Change Project Design and/or  Change Implementation Plan

C.  Discontinue Project

11. PROJECT OFFICER AND HOST COUNTRY OR OTHER RANKING PARTICIPANTS AS APPROPRIATE (Names and Titles)

Campbell McClusky, Asst. Program Officer, USAID/Yemen

Dr. Allen Lee, CID, Evaluation Team Chairperson

Bruno Kosheleff, Mission Evaluation Officer, USAID

12. Mission/AID/W Office Director Approval

Signature: *Charles D. Ward*

Typed Name: Charles D. Ward (Mission Director)

Date: \_\_\_\_\_

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### 13. Summary

#### A. Background

The Ibb Secondary Agriculture Institute (ISAI) Subproject, one of the component subprojects under the Agriculture Development Support Project, Project 279-0052, was authorized on May 30, 1979 to provide initial agriculture staff, technical assistance, and related support functions to the Ibb Agriculture Training Center, Yemen's first secondary school geared to agricultural education. The Ibb Agriculture Training Center is now known as the Ibb Secondary Agriculture Institute. The International Bank for Reconstruction and Development (IBRD) provided initial funding for school buildings and equipment. New Mexico State University (NMSU) was chosen to be contractor for the ISAI Subproject under the Consortium for International Development (CID), the umbrella implementing contractor composed of eleven Western U.S. universities. The first teachers funded by this Subproject arrived in September 1979; the Institute was officially opened on the 26th of that month. General as well as agricultural instruction began the following month.

#### B. Present Situation

The Institute is now in its second year of operation having started with a first year class of approximately 50 students and a second year class of approximately 30 students. Overall, in its brief life to date the Subproject has made commendable progress toward achieving the subproject purpose,\* i.e., "to establish a training center capable of serving Yemen governmental and rural sector needs for personnel with middle level agricultural skills." The minimum arrangements are in place: Some land has been obtained, buildings have been built, and faculty and students have been assigned to the Institute. Planned inputs and outputs have been, for the most part, met. It is too early, however, to speculate whether progress toward the overall Project goal - "to increase income and improve the quality of life for rural inhabitants" - is or will be a quantifiable result of the activities of this Subproject. The Achievements to date constitute a prerequisite step which may permit this Subproject to contribute in the future toward achievement of the Project goal. Many Subproject requirements, however, remain unmet or inadequately fulfilled:

- (1) Expatriate staffing is one short;
- (2) Counterpart assignments are several short;
- (3) Approval and implementation of ISAI by-laws and agriculture curriculum revisions are still pending;
- (4) Establishment of a curriculum and by-laws review and improvement process is still pending;
- (5) Implementation of the full range of agriculture training continues to be delayed pending land acquisition and completion of physical plant improvements by the construction contractor;
- (6) Communications among the various interested parties needs improvement; and

\* All quotations in this Evaluation are drawn from the Project Paper for the Ibb Agriculture Training Center Subproject, approved September 17, 1979, unless the quotations are specifically identified otherwise.

- (7) ISAI working relationships and lines of authority need clarification inasmuch as the Institute is simultaneously under the MOE as well as components of the Government of the Yemen Arab Republic (YARG) in the Ibb Governorate.

This Subproject is operationally underway despite various shortfalls. Much has been accomplished in a very short time by the YARG, NMSU, and by the IBRD, i.e. the "World Bank". The ISAI should not be considered as "established," however, until the agriculture teaching positions are fully staffed by trained Yemenis and the student body is up to the ISAI capacity. Progress in alleviating these shortfalls will depend, in part, on the continued coordination and cooperation among the Institute, CID, and the Ministry of Education (MOE).

#### 14. Evaluation Methodology

This evaluation was scheduled in order to assess progress-to-date and to provide input for development of the second Work Plan. The evaluation raised some 50 questions which were designed to elicit qualitative and quantitative insights concerning the goals, purposes, outputs, inputs, strengths, problems, needs and other aspects of the Subproject as outlined in the Subproject Paper, the "First Year Work Plan for the Ibb Secondary Agricultural Institute" (June 1980), and other relevant agreements and documents.

Major emphasis in seeking answers to these questions was placed upon self evaluation by the ISAI faculty and administration. Perceptions of ISAI students, of the governmental and farm community surrounding Ibb, and of central Government personnel were examined also. Oral and written responses were received from about 110 persons including:

1. Faculty and administrators of the ISAI (95% canvased);
2. ISAI students (90%);
3. Support staff for the ISAI (50%);
4. Local Ibb government officials (15);
5. An Ibb area village chief and some 25 villagers living and farming areas adjacent or near the ISAI;
6. Concerned MOA and MOE officials; and
7. Collaborating CID members of the Core Subproject team.

Evaluation costs for the five team members included an estimated 35 person-days and three roundtrips Sanaa-Ibb-Sanaa.

Evaluation findings were then discussed by the evaluation team chairperson, Dr. Allen Lee, with each team member. Dr. Lee's draft evaluation, including the resulting consensus and recommendations, was then circulated to YARG, USAID, and CID representatives for changes, additions and comments before being finalized by USAID.

### 15. External Factors

Factors external to the development of the agriculture curriculum and trained faculty of the ISAI include (1) the continuing development of (a) buildings and roads, (b) the wadi, (c) tree planting and grounds improvements, (d) housing for expatriate staff, (e) provision of utilities, (f) fencing, and (g) land acquisition efforts; and (2) the transition processes attendant to development of the collaborative mode and the concurrent linkages involving CID, Core, USAID, the MOE, and the MOA. These factors have influenced the agricultural development of the ISAI both positively and negatively. The impact of the more important of these is discussed in Section 17.

Three assumptions were highlighted in the Subproject Paper. They deal with factors critical to the achievement of the Subproject purpose despite the fact that these factors are external in the sense that they are beyond the direct control of the Subproject. They are:

(1) "A sufficient number of students will seek enrollment to maintain a student body which will graduate 90 students per year." Fifty-six students initially enrolled in the first class. For the second class, however, recruitment appears to have been ineffective: Only 23 enrolled the second year. Recruitment plans which might have been more effective were drawn up but were never implemented. Recruitment procedures may explain only in part the declining enrollment; the student stipend, which was below that set for other technical schools, may have been partly to blame as well. The stipend was adjusted later to an equitable level effective March 1981. Those entities which are concerned with the successful development of the ISAI should make maximum use of such tools as recruitment and stipends to ensure that this critical assumption is valid.

(2) "The loss of ISAI graduates from the public and private sectors of agriculture will be minimal." There are no graduates yet: it is clearly too early to assess the validity of this assumption. It may be significant, however, that some students who appeared indifferent at the beginning of their time at the ISAI are now demonstrating much more enthusiasm and seriousness for their agricultural studies. It appears this may be an example of Subproject elements working together to positively influence a factor critical to the achievement of the Subproject purpose.

(3) "The YARG will pick up recurrent costs." Donor (A.I.D.) assistance in the case of this Subproject was to apply toward major, start-up expenses, such as: Expatriate agricultural teachers and agricultural management personnel; Yemeni counterpart and ISAI graduate training outside of Yemen; purchase of initial agricultural instruction equipment; and general support for the agricultural portion of the Institute's activities. All other Institute costs need to be carefully budgeted on an annual basis by appropriate elements of the YARG. This, however, appears not to have been the case to date. Or if the budgeting has been done, then the Institute appears to have had inadequate access to the process, even though the Institute is presumably in the best position to project these "recurrent costs." Participation of the Institute and its personnel, including expatriate advisors, in the ISAI budget planning

process should be maximized to ensure that this assumption has not been misplaced and that the YARG does pickup these costs.

#### Other Factors

Inherent in the Subproject Paper and the Grant Agreement between A.I.D. and the YARG is the intent that the development of the Institute capitalize upon the agricultural potential for women, many of whom have assumed already a more active role in on-farm production activities in Yemen. Women were to have been encouraged to pursue formal agriculture studies at the Institute. There does not appear to have been adequate application of this intent. The one woman who did enroll in the first year was later dropped in response to a YARG directive. Traditional and religious customs may inhibit females from participating with males in technical education environments; however, it is significant that nearly all villagers and local YARG representatives who were interviewed in the course of this evaluation responded affirmatively when asked whether Yemeni women as well as men should participate in formal agriculture education at the secondary level.

Salary potentials in Yemen for careers for trained persons in agriculture compare unfavorably with those for the non-educated in commercial careers. This factor substantially lessens the interest of high ability individuals in entering formal agricultural training. This is a situation which appears to merit YARG study and possible corrective action.

There appears to be a continuing lack of regard for the values of education. This has been reflected at ISAI in poor student attitudes which at times have actively discouraged concentration and perseverance in the classrooms. The agriculture instructors, both expatriate and Yemeni, have reported significant improvements in student attitude but these instructors have time and again been reminded that they must actively counter what is basically a negative student attitude toward the benefits of formal training.

Some of those enrolled at the ISAI have shown a strong disdain for manual labor and consequently some reluctance to participate in practical work in agricultural production. This is practical, hands-on field work designed by the expatriate teachers as a formal part of the ISAI agriculture instruction. The ISAI agricultural faculty report little or no progress in this area. The aversion to farm work may result from recruitment factors which probably tend to favor urban children who are products of "better" primary schools. The Institute should make an effort to attract as many rural candidates as possible.

#### 16. Inputs

Personnel and Training: Recruitment of Yemeni and expatriate faculty has fallen behind schedule. The Subproject design specifies expatriate

coverage of nine areas of specialization. Contractor recruitment efforts for the last area, Food Science, was not successful because of Contractor and Ministry of Education misunderstandings regarding selection criteria. Fresh recruitment efforts are now underway. It was anticipated that there would be at least ten Yemeni agriculture counterparts. Most of the first year, '79-'80, there were six, four faculty and two administrative. The second year, '80-81, two more Yemeni were assigned to agriculture faculty counterpart positions; these plus the two Yemeni administrative staff will constitute the first group of Master's degree candidates who are now scheduled to begin training this summer in the United States under this Subproject. There are to be two subsequent groups for Master's degree training. It is anticipated that the YARG will assign some who successfully complete this training to permanent positions on the agriculture faculty of the Institute. Recruitment must be such that at least ten Yemeni agriculture faculty counterparts are assigned each for the first three years. The pattern to date indicates that these targets will not be met unless the YARG places much higher priority on the recruiting program. An intensive English language program is underway for those currently scheduled for training in the U.S. Other participant training provided under the Subproject is not scheduled until later in the Subproject.

Land: The land acquisition targets of "seven hectares plus 40 hectares" have not been met. Suitable land has been identified and transfer or acquisition for the ISAI has been effected on paper; however practical access for ISAI use is not yet possible. Part of the delay seems to be associated with time consuming and expensive arrangements for financial settlements for farmers who have been and continue to farm some of the identified land, mostly "waqf" or Mosque land. Part also may be resulting from the need for jurisdictional adjustments between YARG <sup>PAU</sup> bureaucracies. Continued delay in land acquisition will increasingly limit essential practical agriculture production experiences for the ISAI students.

Physical Facilities: IBRD-funded construction of the main physical plant may be said to have been completed on schedule, but secondary facilities were either not completed or not provided at all (e.g. livestock and food processing facilities). Dormitory facilities are generally conceded to be inadequate for the planned capacity of 270 students (90 per class). IBRD-funded provision of the basic Institute equipment consignment appears not to have been completed or inadequately supervised. Much equipment is incomplete or damaged; other items simply never appeared. Effective performance by the expatriate teachers, their Yemeni counterparts, and the Institute administration permitted them to do without or to find other ways to compensate for inadequacies in facilities and equipment. They cannot do this indefinitely.

Operating Budget: Limited YARG funding was provided the first year of operation through December 1980. The level of funding appears to have been an arbitrary amount, justified perhaps on the grounds there was no operational experience on which to budget. These limited funds were inadequate to cover many of the anticipated, as well as most

of the unanticipated, first year expenses. The funds were available for ISAI use only after complicated, time-consuming, bur<sup>cau</sup>cratic procedures were completed. ISAI budgeting for the second year took account of the operational experience of the first year, but appears to have been disregarded when submitted to the central government. If any budget covering 1981 YARG funds for the ISAI exists, then it is not yet available to the ISAI. Implementation of all Institute activities is rendered unnecessarily difficult when the planning for activities is thus divorced from the budgeting and control of funding.

Housing: Housing for the Yemeni faculty was included in the buildings constructed under IBRD funding. Housing for the expatriate team was covered by AID funding provided through the contract with CID. The contract provided for the importation and erection of house trailers. It was not possible for these units to be ready the first year of the Subproject, therefore, mutual agreement between CID and the ISAI provided that some of the faculty housing would be available for the expatriate team until the house trailers were ready. The trailers were damaged in shipment and erection of these units was set back approximately three months. All campus faculty housing units are now available for Yemeni faculty and staff.

## 17 Outputs

### A. Subproject Outputs

The Work Plan for the period of January 1, 1980 - June 30, 1981 specified progress in terms of the outputs described below (each output is followed by the findings of this Evaluation).

1. Planned Output: "The expatriate staff will prepare and submit to the Minister of Education a revised comprehensive curriculum for the regularly enrolled secondary school students."

Findings: This was done, encompassing primarily those areas pertaining to technical agriculture education (omitting areas such as religion and physical education). Both expatriate and contract staffs contributed to this revised curriculum. The evaluators have not evaluated the content -- merely the action. Examination of this revised curriculum indicates it to be systematic and commendable. No approval or criticism of the revision has been received from the Ministry of Education as of the time of this Evaluation.

2. Planned Output "All students will be involved in practical production projects on the school's farm. Also, the school will be producing adequate forage for the school's livestock operations conditional upon the land acquisition by the MOA and MOE.

Findings: Compilation of survey data indicates three findings: (a) originally, many students considered manual farm work beneath their status or dignity; (b) some now seem to have acquired a more positive attitude toward farm work, but this continues to inhibit achievement

of the first part of this output; and (c) persistent land and water limitations have been a major handicap which will increasingly limit future practical field instruction activities and forage production by the ISAI. Low level forage production, already inadequate for the limited number of ISAI livestock is inhibiting acquisition of the recommended number of livestock, for instruction purposes.

3. Planned Output: "A community survey will have been conducted to acquire socio-economic data and to obtain information for the Institute's out-reach program."

Findings: A good plan for acquiring socio-economic data was developed and some survey activity initiated. Implementation of this survey needs to be completed. Then, during the April 1, 1981 to March 31, 1982 period, at the very minimum, one short training course for Ibb area villagers should be conducted by the ISAI. The Institute should make an active effort to involve interested villagers in the design of the ISAI out-reach program.

4. Planned Output: "The Institute's out-reach program plan will be completed. This will outline an organizational plan for a community committee to interface between the school and the local people."

Findings: See the findings under item #3 above. The community committee, which has not yet been formed, should be promptly organized and activated.

5. Planned Output: "Initial classes for farmers in the community will be conducted."

Findings: None have been conducted. The need and desire on the part of villagers queried suggests that many area farmers would respond to and appreciate classes for farmers.

6. Planned Output: "In-service training programs will be initiated for Yemeni and expatriate staff. This includes an English language training program for the first group of Yemeni staff going to the U.S.A. for language training and an in-service short-term training program for expatriates and Yemeni staff in the U.S.A."

Findings: Intensive, four to five hour, English classes have been conducted for the counterpart M.S. candidates every workday afternoon at ISAI since September 1980. These counterparts, who teach in the mornings, may not make for consistently attentive, foreign language students in the afternoons. Some unsatisfactory attitudes appear to substantiate this observation. Proposed revisions have been discussed which may relieve some of the student frustrations at the combined work, class, and study role. No actions are yet anticipated.

7. Planned Output: "Initial infra-structure problems will be solved. This includes straightening the Wadi, improvement of the road between the highway and the Institute, and improvement of the Institute's water system."

Findings: Much of the Wadi improvement work has been completed by the YARG using resources under its Southern Uplands Region Development Project; however, one section appears too narrow, the fill barrier in the old channel appears inadequate, and sections of the banks may be too low. Last year, overflow caused one to one-half feet of flooding on campus; this could happen again. The road, connecting the Institute with the main Ibb-Taiz highway, has been straightened, graded, and somewhat improved with gravel. Additional improvements are required. Roof-top water tanks serve campus residences, but there is an urgent need for a water tower to provide storage and gravity pressure for the student dormitories, the investock facilities, limited irrigation and other facilities of the institute which use water.

8. Planned Output: "An estimated 100 students will be enrolled in the first two years of the Institute's regular program."

Findings: Firm enrollment as of April 1981 totals 79 students; this total is composed of 56 enrolled in the first class, the class of '82, and 23 enrolled in the second, the class of '83. See comments on recruiting in Section 15 of this evaluation.

9. Planned Output: "The Core Program Chief of Party (COP) will be funded and assigned from this Subproject for three months as an emergency activity and transferred to the Core contract later."

Findings: Accomplished.

10. Planned Output: "A program mechanic will be funded and assigned under this Subproject for three months as a TDY."

Findings: Accomplished and functioning.

11. Planned Output: "The COP of the Core Subproject will be authorized to hire a local hire secretary for three months under this Subproject."

Findings: Accomplished and functioning.

12. Planned Output: "A program administrative officer will be funded and assigned under this Subproject for three months."

Findings: Accomplished and functioning.

13. Planned Output: "The Core COP will establish and furnish an office under funding from this Subproject."

Findings: Accomplished and functioning.

14. Planned Output: "The following Core Subproject U.S. based support staff will be funded and assigned from this Subproject for three months as an emergency activity and transferred to the Core contract later."

- 1) Overall 052 Program Director - fulltime
- 2) Secretarial and logistical support - parttime

Findings: Accomplished and functioning.

B. Contractor Scope of Work

The "Scope of Work," part C of the First Work Plan, specified certain tasks for the ISAI Subproject lead university, New Mexico State University, to perform during the period of January 1, 1980 to June 30, 1981.

These tasks, and the evaluation findings are as follows:

Task 1: "Recruit, screen and employ expatriate staff for the team leader and seven teaching positions at the ISAI."

Findings: This task has been completed with the exception of one position, the Food Science teaching position, which was scheduled to have been filled by January 1981. Delays have resulted from misunderstandings regarding the selection criteria. The candidate nominated by the Contractor (through USAID) did not meet the selection criteria as understood by the Ministry of Education. Ministry and Contractor discussions have clarified the criteria and fresh recruiting efforts by the Contractor have begun.

Task 2: "Provide short-term technical support for expatriate and Yemeni staff."

Findings: The team leader and expatriate staff in collaboration with the school director and Yemeni staff were to prepare a tentative list of the type of technical support needed and the Subproject director was to identify appropriate specialists within the CID universities to provide the requested technical assistance. Work by the Contractor on this task is progressing satisfactorily.

Task 3: "Review and propose curriculum revisions for students enrolled in regular classes at the Institute."

Findings: Yemeni and expatriate staff worked for six weeks in New Mexico in 1980 on this; the proposed revisions were completed.

Task 4: "Submit proposed curriculum revisions through appropriate YARG/MOE channels for approval."

Findings: The proposed curriculum revisions have been submitted to MOE, but no advice or approval has yet been forthcoming. There is an apparent lack of communication and agreement upon a process for on-going, ISAI curriculum evaluation and revision. Positive action is urgently needed.

Task 5: "Establish working relations in the Ministry of Education."

Findings: CID, through NMSU, has excellent working relations with the ISAI. NMSU alone has only very limited need for direct contact with the MOE. NMSU should generally deal jointly with the ISAI director at the MOE on matters concerning the ISAI Subproject. A separate CID-MOE relationship is desirable regarding several activities under active consideration for CID subproject involvement. A CID agriculture education specialist began work on a temporary basis mid-February with the MOE and other YARG components on broad planning for agriculture education in Yemen. This expert has been nominated by USAID for a long-term (two year) assignment to Yemen as a member of the Core team. The outlook for improved working relationships between the MOE and the ISAI-CID entities is now much more promising.

Task 6: "Obtain sufficient agricultural land for the school farm operations and laboratory."

Findings: This situation is grossly unsatisfactory at present due to the lack of sufficient land. This will become a serious handicap as enrollment rises and more hands-on, "learning by doing" experiences in crop and livestock production are called for. Additional parcels of land for the ISAI campus have been identified, settlement agreements have been reached with the owners and users, and some fencing has already been put up. However, no settlement payments have been made, and the villagers who have previously farmed some of the land are continuing to do so. They have cut the fencing in some places to facilitate their continued farming as well as to permit traditional access to farms and villages in surrounding areas. Other related problems can be anticipated.

Apparently, significant agreement also has been reached on another piece of land some three kilometers from the campus. This is an irrigated tract of land potentially highly useful for the ISAI, but acquisition has been delayed pending resolution of payments and jurisdiction adjustments between the MOE and the MOA. Effective action to acquire these lands under ISAI control and for ISAI use is sorely needed and long overdue.

Task 7: "Initiate a comprehensive in-service and pre-service program for expatriate and Yemeni staff."

Findings: See Item No. 6 Planned Output, Part A - Findings above.

Task 8: "Assist in the development of school facilities and surroundings."

Findings: See Item No. 7 Planned Output Part A - Findings above, pertaining to the Wadi improvements. The combined expatriate and Yemeni agricultural staffs have started extensive landscaping and windbreaks and available ISAI land is under cultivation. Some of the expatriate team members feel a sense of frustration because others have different ideals and standards relating to sanitation and littering; by some U.S. standards, these conditions at the ISAI are quite

deficient, by other standards and prevailing customs they are better than average.

Task 9: "Procure staff housing, project vehicles, and other equipment and supplies needed for school operation."

Findings: All essentially and adequately accomplished as of April 1, 1981.

Task 10: "Serve as a facilitator for funding special services and personnel for the Core."

Findings: Accomplished. See Planned Output, Part A - Items Nos. 9-14 above.

### 18. Purpose

"The purpose of this Subproject is to establish a training center capable of serving Yemen governmental and rural sector need for personnel with middle level agricultural skills."

Basically, such a center is operational. There exists a campus, living quarters for students and faculty, classrooms, laboratories, offices, equipment, teaching materials, administrators, expatriate faculty and Yemeni counterparts, support personnel, students, utilities, curriculum, on-going instruction, and practical experience opportunities. However, there are problems and needs in each of these listed areas.

Progress toward each "End of Subproject Status" (EOPS) is summarized below:

(1) EOPS: "A three-year training program producing 90 graduates annually at the certificate level." A three-year program is operational, although the first class has still to finish its second of three years. The level of 90 graduates annually may not be reached for several years and capital adjustments to the dormitories may be necessary before the full student population (three times 90) can be accommodated. Full "development" of the Institute may be said to have been achieved only once the program is managed by qualified Yemeni faculty and staff for the capacity number of students.

(2) EOPS: "Returned participants will have assumed responsibility for some of the teaching and administrative staff positions." Too early to ascertain until the first class of counterparts complete their M.S. training and return to Yemen.

(3) EOPS: "Revised, upgraded curricula will have been developed for the major subject matter areas." This was done once during the year - and will be a continuing process.

(4) EOPS: "A school farm will have been developed providing a suitable program of practical training for the student body for the major crops and livestock of the area." Practical crops and livestock

training is operational but very limited. What little progress there has been on resolving the acquisition of Institute lands has been in the very recent past. It is too soon to say that a "school farm" has been developed. Continuing, high priority, Institute efforts are focused on land and equipment acquisition with the target of having an operational farm by the end of the next school year.

(5) EOPS: "A program of short courses and in-service training for farmers and extension workers will be in operation." Socio-economic data for such a program are being collected, but no short courses have been designed or have been held. Some should be scheduled for the coming year; these initial short-courses and in-service training exercises should then form the basis for design and implementation of an operational program of such courses and training.

#### 19. Goal/Subgoal

"The goal of this Project is to increase income and improve the quality of life for rural inhabitants." It is far too soon to say that any appreciable change has occurred in either the level of income or the quality of life; however, the subgoal of the Project "is the development of an operational, relevant, responsive agricultural education institution." It is possible to say that the basic skeleton of the subgoal has been achieved: An agricultural education institution is operational and the subject of on-going revisions and improvements. It is certainly not perfected or "developed" in the full sense of that word; however, it is excellent in most respects when consideration is given to all that has been accomplished since the Subproject was launched.

The ISAI Subproject activities are unlikely to contribute to the Agricultural Development Support Project goal unless the assumption "that graduates will become employed in agriculturally related activities in the private and government sectors" proves valid. It is significant in this connection that some ISAI students already appear to be looking forward to Government positions. But, it is too early to gauge what percentage will choose agriculturally related employment, governmental or otherwise. The increasing seriousness with which initially indifferent students are now approaching their agricultural studies suggests they are beginning to perceive agricultural benefits and may be thinking ahead to possible applications through careers in agriculture once they graduate. The ISAI faculty and administration, expatriate as well as Yemeni, are making constant and consistent efforts to encourage this trend.

#### 20. Beneficiaries

The beneficiaries to date under this Subproject are those people directly involved: Students, teachers, and other staff personnel.

The students may be said to have benefitted most: In their agriculture classes, they have received instruction from several expatriate teachers of the caliber of first class university professors. The counterpart teachers have received some benefit from working with the expatriates and from studying English, but the main benefits for them will come when they enter their Master's programs in the U.S. Ibb area residents and villagers who are employed at the ISAI have enjoyed specific financial benefits not generally agricultural in nature. It is too early to identify benefits to the Project's main target group, the low-income, rural farmers in Yemen.

Members of this target group of low-income, rural farmers in the Ibb area as well as throughout Yemen have benefitted only to the extent they or their children have found their way into one of the above categories. Benefits to this target group on a nationwide basis are infinitesimal. The Ibb area farmers, including those with low income, will benefit from the Subproject if the proposed ISAI outreach short courses and in-service training programs for farmers are effective. The larger farming community in Yemen at all levels will benefit if the ISAI students continue to take their agricultural studies more seriously and move, upon graduation, into agricultural careers; but those farmers who benefit then will still represent only a relatively small percentage of the total farming population in Yemen and an even smaller percentage of the low-income farming population.

#### 21. Unplanned Effects

One unplanned effect of the Subproject has been a disruption of some farming activities of some local villagers who for years have grazed their livestock on or farmed some land, acquired on paper for the ISAI, which has recently been fenced. These villagers are expecting compensation for their lands and their farming "rights." Compensation guidelines have been determined at the Ministry level, however, no local payments have been made. These farmers may soon start receiving payments, but most would prefer to continue farming until their full compensation is in hand. These farmers therefore, have cut or otherwise disregarded the fencing which has been recently erected in an attempt to ensure ISAI control of this newly "acquired" land.

The villagers are caught in conflicting situations and perceptions: On the one hand, they welcome formal agricultural training which they view as potentially beneficial to their own agricultural efforts. Some of these farmers are looking forward to realizing more profit from their settlements than they expect normally from their farming. A few have secured ISAI employment which already appears to be helping their personal finances more than they could ever hope to realize from farming activities. On the other hand, all area farmers enjoyed, before the coming of the ISAI, cost-free access to some of the Mosque ("Waqf") lands recently given over for the ISAI; some of these farmers

have reduced their livestock holdings as a forced response to the loss of this cost-free pasture and fodder.

Another unplanned effect is associated with the presence of expatriates, both men and women, married as well as single, whose conduct, customs and values vary significantly from those traditional in Yemen. The relatively liberated behavior, for example, of the expatriate women may have been viewed as a threat to the traditional role of Yemeni women; the single female student to enroll during the ISAI's first year was refused continued enrollment by a Government ruling to the effect that women should not study with men. There are, as yet, no expatriate female teachers for the secondary level students and there has been some speculation that this fact may have contributed to the departure of the one female who enrolled as well as discouraged other potential female enrollments.

## 22. Lessons Learned

Those lessons most relevant to this Subproject are listed below along with comments pertaining to anticipated adjustments stemming from these lessons:

(1) Agriculture schooling appears to be among the least popular, technical, secondary schooling available, despite the importance of agriculture in Yemen. Specific Subproject inputs cannot directly influence student recruitment, but this Evaluation committee anticipates that the MOE will actively publicize the recently adjusted student stipend and generally upgrade future student recruitment efforts. The Subproject will consider improvements to the student facilities on campus. Most importantly, all ISAI professionals will make a conscious effort to underscore to both current and prospective ISAI students the significance of agriculture in Yemen as well as careers in agriculture in Yemen.

(2) Qualified Yemeni counterparts are not easily attracted to secondary agriculture teaching positions despite prospects of Master's degree training in the U.S. Again, specific Subproject elements are not in position to fine-tune counterpart recruitment; however, much higher emphasis will be given this subject in planning discussions between the Subproject and the MOE. Again, the committee anticipates that the MOE will upgrade future counterpart recruitment work.

(3) Agriculture education experts should be consulted in the design of and basic equipment procurement for a facility for agriculture education purposes. This lesson was learned early on at ISAI and the Contractor has made consistent efforts to have TDY experts visit the facilities at Surdud and otherwise make their observations known to the IBRD (the facilities at Surdud are also IBRD-funded). The evaluation committee assumes the IBRD has noted already some of the post-construction problems associated with the ISAI and will anticipate them in connection with Surdud.

(4) Contract experts should have an opportunity for structured, timely input into the Institute's annual budget exercises. The Subproject will be requiring formal inputs by Contractor personnel into the ISAI agriculture budget planning process.

(5) Remaining IBRD-funded capital development and equipment procurement steps relating to the ISAI should be very closely supervised. The Subproject faculty and administration have long been watching for specific actions regarding the plant and equipment. The Subproject will provide USAID, the MOE and the IBRD with the data which should permit them to adequately follow-up subsequent actions concerning IBRD-funded inputs.

(6) Relevant targets and benefits of the Subproject should be shared with students as well as faculty, administration, Ibb officials, MOE officials and MOA officials. The Subproject faculty and administration plan, through the ISAI community committee, to make active efforts to inform both the Ibb and ISAI communities of Subproject benefits. One objective will be to more fully inform the Ibb community what the Subproject is all about, including, of course, references to possible advantages to Ibb area farmers. The other objective will be to provide additional incentives, especially to the students, by making sure they know about Subproject scholarships available to a limited number of ISAI graduates for further agricultural schooling in Arabic institutes of higher education.

(7) Agreements regarding the Subproject should include provisions pertaining to the inclusion in development of the Institute of campus related elements such as a student union, a cafeteria etc. The Subproject, designed around the agricultural focus of the Institute, does not provide for general campus facilities. It may have been assumed that these facilities would be established in the course of routine government actions following the opening of the Institute. They were not. The lack of such facilities adversely affects the general performance and morale of the student body. Both the ISAI Director and NMSU are aware of these needs and have cooperated in steps designed to alleviate the situation. These actions have not and could not accomplish all that is needed. Both USAID and the YARG should ensure that their subsequent bilateral agreements regarding the Subproject identify needed general facilities indicating an implementation schedule and implementing agent.

(8) The condition precedent regarding land acquisition should have been stated in terms of practical access and control by the Institute. Subsequent references to land acquisitions, whether under this Subproject or other AID-funded activities, should benefit from the experience under this Subproject. The Evaluation committee is aware that the MOE and the MOA share concern that ISAI land acquisition be fully and quickly secured.

(9) Subproject design and implementation should include special provision for communication among the dispersed parties involved, the ISAI, the MOE, the Ibb Governorate, NMSU and CID, USAID, and the

IBRD including the Project Implementation Unit. Future Project 052 Work Plans and budgets will be adjusted to make specific provision for frequent and regular meetings in Yemen which all parties concerned with each given subproject should attend.

(10) Higher priority should have been given to early Subproject outreach and community relations activities. Each remaining Subproject Work Plan and budget will make specific provision for timely implementation of Subproject outreach and community relations activities.

(11) Clear and public lines of authority should accompany operations of a new organizational entity such as the ISAI. The Subproject will ask the MOE to clarify the ISAI lines of authority and make them known to all parties concerned with the Subproject as well as amend the by-laws as necessary.

(12) Expatriate staffing should include women, especially in a field such as agriculture in Yemen in which women are so much involved. NMSU, continuing its open recruitment practices, will make stronger attempts to attract qualified, Arabic-speaking women applicants for Subproject vacancies.

(13) Central government representatives should monitor the institute's annual budget process to ensure (a) that required steps are followed, (b) that the submission is in line with central government resources and priorities, (c) that the levels proposed are consistent with formal agreements regarding the percentage of the YARG contributions, and (d) that the approved levels are communicated to the ISAI and routinely made available during the year for timely ISAI use. Subproject representatives will seek to improve budgetary liaison with the MOE. The Evaluation committee anticipates the MOE will be making adjustments during 1981 in monitoring the ISAI budgeting process.

### 23. Other Comments

Cost Per Beneficiaries: Subproject expenditures through June 30, 1980 were approximately \$2,000,000. The cost per student per year for the first year of the ISAI was, therefore, approximately \$40,000. Total enrollment is now running about 75, bringing the cost per student per year down to \$20,000. Allowing for inflation, expenditures during the '81-'82 ISAI year may run \$1,800,000 and enrollment should increase by at least 60 bringing total enrollment to 135 and the cost per student per year down to \$13,000. This trend should continue as enrollment increases approaching the ISAI capacity. It should be noted that these calculations are based on Subproject expenditures and do not take into account either the YARG or IBRD contributions. Projections, by the same token, do not take into account the numbers of farmers for whom agricultural short courses and in-service training programs will be run by the ISAI within the Subproject expenditure estimates mentioned above.

Observations of the Ibb Secondary  
Agriculture Institute Physical  
Plant, Its Construction and Its  
Operation and Maintenance, by

F. Lee Young, P.E., A.I.A.  
Gen. Engineer Advisor

As an engineer and an architect I'm considering this as a report but I've chosen to write it somewhat as a narrative so the layman might understand it better.

My first impressions were of a poor approach road to a rather drab looking group of buildings which had so few windows that I felt more like I was approaching a detention home. As soon as introductions were made, the team leader produced drawings of the buildings at my request. He had retrieved them from the rubbish pile. They, of course, were disorganized and incomplete. We were discussing the drawings in a large room which has an acoustical tile ceiling. This ceiling tile, as in other acoustical tile ceilings at the school, was tacked in place with small nails. There were no locking joints. I predict failure here because there is little allowance for expansion/contraction. The ceiling will be needed in the large rooms because of the lack of other sound absorbing materials.

As I moved among the various stone finished school buildings I did not have any positive reason to feel there would be structural failures. However, the poor finished masonry makes me wonder about the structural concrete. Everything structural is plastered over and there have not been enough seasons since construction completion for all potential failures to show. The stone work is beginning to show mortar fissures but the fissures do not seem to be from structural overloads rather from the lack of expansion/contraction joints. But then I had no decipherable structural drawings with which to work. Of course, these fissures also can appear because of the poor finished masonry work. But the lack of tight joints, protective roof overhangs, and apparently no waterproofing skin is already promoting deterioration of the building's interior finish.

The design/construct laxity in concrete works shows clearly in the skewed stairways which have dangerously narrow and uneven treads and risers. Handrailings are very insecure on balconies and some stairwells. Hurried exits from buildings are sure to promote injuries for personnel. Poor concrete, inserts in it, and forming makes me wonder about the structural veracity.

The roofs are leaking because details in the masonry have been neglected in the designing and constructing. For instance, there are no drips on the spouts so inadequate small diameter pipe has been substituted to carry the roof runoff water away from building walls. Apparently, there is no waterproofing membrane under the ceramic tile roof flooring. Even masonry will deteriorate with constant unplanned inflow of water into the building walls.

I was surprised at the architectural planning of the dormitories. There was provision for sleeping but the sleeping area reminded one more of a prison. Study areas and storage facilities for personal articles were poor. But the worst was a very crowded, unsanitarily planned and constructed washroom or lavatory. It bothers me greatly that a semblance of a latrine for the dormitory is approached through weeds and is about 20 meters from the dormitory building.

I'm concerned about internal sewer vent pipes in such places as laboratories. The vents are connected to floor drains, it seems, but even these drains produce harmful gases which could infiltrate a closed lab through joints in the plastic vent pipe. On a roof top I found a cap on a vent stack; put there so gases would not disturb inhabitants of roof penthouse. The gases will go somewhere. The vent stacks should have been extended above the penthouse.

Maintenance of the laboratories, lavatories and latrines is very poor. I predict health problems, deterioration of the plumbing and expensive repairs in these areas unless maintenance can be increased.

When we moved on toward the outbuildings used for the agricultural-mechanical training I was even more disturbed. Concrete block masonry walls are not plumb nor straight. The concrete block is of such strength that chickens pecked holes in it. The pointed and raked joints look like they are moving around rubble stone rather than "rectangular" concrete blocks. There is no evidence of reinforcing in the walls. Roofs are very poorly tied to the walls. But this probably won't be so much a problem in a strong wind because most roofs will fail just because their decks are of scrap pieces lightly fastened to their stringers and purlins. Some semblance of trusses look so pieced together that they, too, must have been of scraps. I did not actually observe them but I understand the water lines are within a few centimeters of the ground surface. This water distribution system is designed to be supplied from a central tank. Because I do not expect a constant positive pressure in this distribution system, I see waste leaching from the agricultural area into the distribution system.

I have seen some beautiful stonework, good carpentry and even some good concrete in the Ibb-Taiz area. I don't feel the Yemeni work needs to be considered second class. So it bothers me that we must exhibit third class work in the physical plant around which the students are already creating beautiful gardens. I can not understand how such

construction can be approved for use of money at least partially furnished by the U.S.A. when much better local commercial plants are being built around it.

Summary Observations

1. The ISAI should have among its files a complete set of as-built construction drawings.
2. All ISAI classrooms and meeting-rooms should be equipped with properly installed acoustical tile ceilings set below the plaster ceilings - not against them - to trap sound.
3. Expansion/contraction joints should be installed where they now can be and be properly caulked; those locations where expansion/contraction damage has developed should also be caulked.
4. Protective roof overhangs and waterproof membranes should be added where possible or where weathering has shown the need for them.
5. Handrails and balcony railings should be braced and reset as necessary.
6. Roof runoff drain piping size should be enlarged. Necessary waterproofing, such as added flashing and caulking around the ceramic roofing tiles, should be completed.
7. Additional dormitory space should be provided - each of the existing dormitory cubicals should be allotted to no more than two students. Privacy doors should separate the cubicals or, at least, sections of cubicals.
8. Dormitory lavatory and latrine facilities should be up-graded, their number increased, and access to the latrines improved.
9. Sewer and laboratory vent pipes should be extended and otherwise protected where necessary to minimize infusion of dangerous gases.
10. Laboratory, lavatory, and latrine maintenance should be up-graded in quality and frequency.
11. Major reconstruction should be done on the outbuildings used for agricultural mechanics training. Improved block should be used, structural reinforcement should be installed, and proper roofing properly attached.
12. Plans should begin for a deeper and safer water distribution system and clear precautions against the likelihood that the present system may become contaminated should be observed.
13. Exterior cosmetic improvements should be made to buildings and grounds alike. This should not be simply further clean-up and plantings - the faculty and staff have already initiated ambitious efforts along these lines - but should include additional exterior weather protection to buildings and vastly improved construction of walkways, curbing, rain runoff channels, roads, etc.

The Ibb Secondary Agriculture Institute (ISAI) Subproject Evaluation Team was composed of the following:

a. Dr. Allen Lee, Chairperson and an agricultural education specialist, represented the Consortium for International Development (CID). He designed the evaluation questionnaires and was the primary drafter of the written evaluation.

b. Mr. Saleh Abdulla Hussein, Director of the ISAI, represented the Institute and facilitated the full participation of the Institute Staff in the evaluation. The evaluation team enjoyed the cooperation and hospitality of the Institute during part of an examination week. The personal participation and assistance of Director Saleh made it possible for both the evaluation and the exams to proceed smoothly.

c. Mr. Mohammed al-Harazi, Director of Agricultural Education for the Ministry of Education, represented the Ministry. Mr. Harazi, familiar with the early planning and construction phases of the Institute and well acquainted with the Yemen Government's aspirations for the Institute, contributed questions and observations essential to maintenance of balanced evaluation process.

d. Dr. Arthur Jensen, Team Leader of the New Mexico State University (NMSU) expatriate teachers, represented NMSU, the Subproject Contractor. Dr. Jensen devoted several days to the evaluation and encouraged extra cooperation on the part of the expatriate staff. One of the expatriate staff, Dr. Musa Allegabo, kindly provided extensive special assistance of high quality which came out of his personal time.

e. Mr. Campbell McClusky, Assistant Agriculture Development Officer, USAID/Yemen, represented the Agency for International Development. Mr. McClusky conducted several pre-evaluation interviews and discussion sessions which identified some of the areas for further evaluation by the Team. Final rewriting was done by Mr. McClusky with special inputs from Mr. Bruno Kosheleff, Evaluation Officer, USAID/Yemen.

Attachment A shows the additional expert contribution to this evaluation from Mr. F. Lee Young, General Engineering Advisor, USAID/Yemen. Mr. Young examined the quality of construction of the ISAI physical plant. This evaluation, a consideration of the status of the development of the Ibb Secondary Agriculture Institute, would not be complete without Mr. Young's valuable discussion of the facilities in which the Institute is housed.