

# A.I.D. EVALUATION SUMMARY PAF

PD-AAU-032  
 XD-AAU-032 A  
**10 JUL 1986**  
 LSN-46482

(BEFORE FILLING OUT THIS FORM, READ THE ATTACHED INSTRUCTIONS)

<b>A. REPORTING A.I.D. UNIT</b> (Mission or AID/W Office)  (ES # 86-1 )	<b>B. WAS EVALUATION SCHEDULED IN CURRENT FY ANNUAL EVALUATION PLAN?</b>  yes <input checked="" type="checkbox"/> slipped <input type="checkbox"/> ad hoc <input type="checkbox"/>	<b>C. EVALUATION TIMING</b>  interim <input checked="" type="checkbox"/> final <input type="checkbox"/> ex po. <input type="checkbox"/> net <input type="checkbox"/>
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**D. ACTIVITY OR ACTIVITIES EVALUATED** (List the following information for project(s) or program(s) evaluated; if not applicable, list title and date of the evaluation report)

Project #	Project/Program Title (or title & date of evaluation report)	First PROGRAM or equivalent (FY)	Most recent PAF (mo/yr)	Planned Cost ('000)	Integrated rate ('00)
279-0052.2	Agriculture Development Support Program -- Ibb Secondary Agricultural Institute Subproject	1979	9/86	18,260	12,410

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

Action(s) Required

Name of officer responsible for action

Date Action to be Completed

1. Revive Curriculum Committee representing Ministry of Education (MOE), Ministry of Agriculture and Fisheries (MAF), Sana'a University (SU) and the three agricultural education schools. Call meeting to set up objectives and assignments for a process of curriculum development including more farm practice and observation visits to extension offices and agricultural projects.
2. Develop long range plan for development of Yemenized instructional materials suitable for all three agricultural education schools.
3. Identify needs and make recommendations on time management for administrative and teaching staff. Place this discussion on agenda for both the administration workshop and the student teachers workshop in the United States this summer. (Items include faculty consultation, new student orientation, student clubs, handbooks and communication in general).

MOE

July 1986

MOE

August 1986

NMSU

June 1986

(Attachments, if necessary)

**F. DATE OF MISSION OR AID/W OFFICE REVIEW OF EVALUATION**

no 4 day 6 year 86

**G. APPROVALS OF EVALUATION SUMMARY AND ACTION DECISIONS:**

Signature Typed Name Date	Project/Program Officer Raymond Renfro 5-12-86	Representative of Borrower/Grantee Mohamed Harazy 12/1/86	Evaluation Officer Mansour Shamiri 5/12/86	Mission or AID/W Office Director Michael Lukomski 5/19/86
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E. Action(s) Required (continued).

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|--|----------|----------------|
| 4. Develop system for Continuing Linkages with the public (e.g., MAF, MOE, SU, development projects) and private sector (e.g., Chamber of Commerce) in recruitment, curriculum development and practical training development. | MOE/NMSU | September 1986 |
| 5. Resolve the farm land acquisition bottleneck.   | MOE      | September 1986 |
| 6. Develop a long-range recruitment plan.  | MOE      | August 1986    |

H. EVALUATION ABSTRACT (do not exceed the space provided.)

The subproject assists the Government of the Yemen Arab Republic to develop its first three-year agricultural education school, the Ibb Secondary Agriculture Institute (ISAI). Under the umbrella Agricultural Development Support Project, undertaken in collaboration with the Consortium for International Development (CID), the ISAI Subproject is being implemented by New Mexico State University (NMSU) and the YARG's Ministry of Education. The purpose of this internal evaluation is to help determine ways in which the instructional program at ISAI can be improved in light of plans to revise the curriculum and return of U.S. - trained Yemeni to assume teaching responsibilities.

- The evaluation is based upon a review of documents, visits to the two other agricultural education institutes and other agricultural projects, as well as interviews with ISAI students, graduates, teachers, administrators and user clients in both the public and private sectors.

Findings and conclusions:

- ISAI is running well and is an example of successful institution building in Yemen.
- ISAI Staff are well trained and professional, students are dedicated and graduates and their employers evaluate the curriculum positively.
- Facilities, though adequate, require more farm land.
- Teachers need to improve management of time and students need orientation and consultation time.
- The curriculum is too extensive; some support material is lacking.

Major Recommendations:

- Develop a process for continual curriculum review and revision to include more farm practice and observation visits to extension offices and agriculture projects.
- Develop instructional materials to include lesson plans, class syllabi and textbooks appropriate for Yemen.
- Improve time management and communication to include orientation for new students, updated handbooks, and consultation hours with teachers.
- Resolve land acquisition problems.
- Determine strategies to encourage direct employment of graduates.

Lessons Learned:

- Development of an educational institution is a long-term effort, which requires training of teachers, managers and administrators.
- Interim use of expatriate Arabic-speaking teachers from cultural backgrounds similar to that of the students is vital.
- Management training must be offered to ministry staff to offset the threat of new, more highly trained employees.

I. EVALUATION COSTS

1. Evaluation Team

Name	Affiliation	Contract Number OR TDY Person Days	Contract Cost OR TDY Cost (US\$)	Source of Funds
Timothy J. Pettibone & Khairy Aboul Seoud	New Mexico State University	30 TDY Days	\$15,800	Project 279-0052

2. Mission/Office Professional  
Staff Person Days (estimate) 0

3. Borrower/Grantee Professional  
Staff Person-Days (estimate) 0

# A.I.D. EVALUATION SUMMARY PAGE 11

## J. SUMMARY OF EVALUATION FINDINGS, CONCLUSIONS AND RECOMMENDATIONS (Do not to exceed the 3 pages provided) Address the following items:

- o Name of mission or office
- o Purpose of activity (ies) evaluated
- o Purpose of the Evaluation and Methodology Used
- o Findings and Conclusions
- o Recommendations
- o Lessons learned

### 0. USAID/YEMEN

1. Purpose of Subproject. To improve the efficiency of the secondary agricultural education system of the Ministry of Education (MOE) to supply Yemen's agricultural sector, including the Ministry of Agriculture and Fisheries (MAF) and the private sector, with qualified manpower.
2. Purpose of Evaluation. To assess ways of improving the instructional component of ISAI - one of the three secondary agricultural institutes in the Yemen Arab Republic (YAR).
3. Methodology Used. Evaluators used the "CIPP" model recommended by Stufflebeam et al - context, input, process and product. Background on context was obtained by reading the subproject paper and other documents, supplemented by visits. Inputs evaluated included student recruitment, faculty and staff, facilities, finances and instructional materials. Input evaluation methods included student and staff interviews, MOE interviews, inspection of facilities and materials. Transcripts of Yemeni teaching staff and curriculum vitae of expatriate teaching staff were reviewed. Instructional process was assessed by student and graduate interviews, inspection of class and practical schedules, attendance at in-service and faculty meetings and inspection of in-service records and reports. Product evaluation (i.e., of graduates) was performed by interviewing graduates (44 at 11 sites) and employers (17 employers evaluated 27 graduates).
4. Findings and Conclusions.
  - a. Context. ISAI is Yemen's first secondary agricultural education school; established in the fall of 1979, four classes have graduated. Some of the facilities were set up by the World Bank prior to AID funding of the umbrella Agricultural Development Support Project (ADSP). ADSP subprojects are implemented by land grant universities - in this case New Mexico State University (NMSU) - coordinated through the Consortium for International Development. The ISAI subproject is fully functioning and the facilities more than adequate (exceptions noted later). Students show great enthusiasm, dedication, and interest in their own education. Staff and faculty are well trained, committed, and interested in making the school and its instruction better. A new director is grappling with his new job, but with a willingness to work hard to get it done. The NMSU team leader is dedicated and patient and supports the subproject fully. The farm manager is hard working.

ISAI graduates and their employers are generally positive in their evaluation of the school, its curriculum and facilities. Overall, the program is viewed as positively contributing to the manpower needs of the Yemen Arab Republic.

Date this summary prepar

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b. Input.

-- Student Recruitment. The recruitment plan is working well as evidenced by the large increase in 1985 enrollment at 47 from that of 1984. Recruitment efforts include school visits, nationally televised recruitment spots, and student studies. However, the plan is unwritten and concern exists that recruitment efforts exaggerate post graduate scholarship availability.

-- Faculty and Staff. Yemeni teachers are well qualified. Their transcripts show relatively high grade point averages in graduate programs. Curriculae vitae of expatriate staff compare well with those of U.S.-trained teachers. Although expatriate staff may in fact be overqualified for primarily teaching jobs, their Arabic country backgrounds are appropriate for their status as interim staff.

-- Facilities. Facilities are excellent. Only additional farmland for the school farm is lacking. With expansion of practical lessons and student projects, the need for land is critical.

-- Instructional Material. Textbooks in some areas are non-existent. Development of appropriate texts for several of these areas is in progress - four have been completed and two are in publication and subcontracts are in process for others. The teachers' resource center has adequate research material for development of instructional materials and is used extensively by most of the teachers. Instructional equipment is sufficient, but as use increases, additional motion picture or VCR equipment should be acquired.

c. Process. Most students come to ISAI because they like agriculture and feel there is a need for Yemen to do better in agriculture. A surprising number of students at all class levels indicate their desire to continue their education - which is not the intended purpose of the institute. Agricultural subjects were favored, the least popular being the more difficult science subjects and English. Generally, students are in favor of more practical classes.

Instruction is generally impressive. Teachers are well prepared, organized and motivated. Students seem to be attentive and motivated.

Lesson plans are not in evidence; class syllabi are non-existent in many classes. The curriculum used was developed by expatriate staff in 1980 and modified in only a minor way in 1982. Although in accord with MOE testing requirements, the curriculum is very and possibly unduly complex - not only in terms of number of subjects but in level of coverage which in some respects is at university level.

Practical courses receive much attention; nearly everyone agrees that more are needed. Most afternoons are devoted to various practical lessons. In-service workshops have focused on "practicals," although the

term does not mean the same thing to everyone. The faculty is not unanimous in agreeing that "practical" means hands-on activity where a student learns by doing. To some, it means demonstration or formal laboratory sessions.

Faculty in-service activities are improving. A defined plan for each faculty member and administrator exists. Consultants have been provided to conduct some activities.

d. Product. Status of outputs follows:

- Staff trained. BS ahead of schedule, MS behind. Staff is adequate for now and other schools are not so well off.
- Training materials developed. Instructional materials are fairly well developed; lesson plans and course syllabi are lacking.
- Curricula developed. Completed in 1980; modified somewhat in 1982; needs revision.
- Facilities completed and equipped. Good but more farm land needed.
- Administrative policies and procedures developed and in operation. By-laws developed in 1980 have not been reviewed.
- Outreach program developed and in operation. Needs attention.

5. Recommendations.

- Develop a process for continual curriculum review and revision to include more farm practice and observation visits to extension offices and agriculture projects.
- Develop instructional materials to include lesson plans, class syllabi and textbooks appropriate for Yemen.
- Improve time management and communication to include orientation for new students, updated handbooks, and consultation hours with teachers.
- Resolve land acquisition problems.
- Determine strategies to encourage direct employment of graduates.

6. Lessons Learned.

- Development of an educational institution is a long-term effort, which requires training of teachers, managers and administrators.
- Interim use of expatriate Arabic-speaking teachers from cultural backgrounds similar that of the students is vital.
- Management training must be offered to ministry staff to offset the threat of new, more highly trained employees.

ATTACHMENTS (List attachments submitted with this Swalm  
evaluation report, even if one was submitted earlier)

Summary) always attach copy of full

Instructional Improvement at the Ibb Secondary Agricultural Institute:  
An Internal Evaluation

COMMENTS BY MISSION, AID/W OFFICE AND DONOR/GRANTEE

Process of reviewing evaluation helped to clarify issues in collaborative fashion.

YC 111-111 to  
10 JUL 1986

**INSTRUCTIONAL IMPROVEMENT AT THE IBB  
SECONDARY AGRICULTURAL INSTITUTE:  
AN INTERNAL EVALUATION**

**AGRICULTURAL DEVELOPMENT SUPPORT PROGRAM  
AID PROJECT 279-0052  
IBB SECONDARY AGRICULTURAL INSTITUTE SUBPROJECT**

**OCTOBER/NOVEMBER 1985**

**Conducted by:**

**Dr. Timothy J. Pettibone, Director  
Educational Research Center  
College of Education  
New Mexico State University  
Las Cruces, New Mexico, USA**

**and**

**Dr. Khairy H. Aboul-Seoud, Extension Specialist  
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Ibb, Ibb Province, Yemen Arab Republic**

**February, 1986**

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## EXECUTIVE SUMMARY

This report contains the results of an internal evaluation conducted to help determine ways in which the instructional program at the Ibb Secondary Agricultural Institute might be improved. Materials were reviewed, and interviews were conducted. Surdud Secondary Agricultural Institute and the Sana'a Veterinary School were visited. Ministry of Education (MOE), and Ministry of Agriculture and Fisheries (MAF) personnel were interviewed at various locations including Sana'a, Ibb, Taiz, Zabid, Gyrba, and Dhamar. Teachers and professional staff at Ibb were interviewed and observed, as were administrators. Representative students from each of the three current classes were interviewed in small groups. Graduates and their employers were interviewed at various sites throughout Yemen. A teacher inservice session regarding student projects was observed as were several staff meetings. Several other joint Yemen projects were visited including the Yemen-German Plant Protection Project in Sana'a and the Yemen-British Agricultural Forestry and Research Development Project in Dhamar.

Generally speaking, the school is running well. Facilities are quite adequate (more land is needed), and instructional equipment and materials are improving daily. The staff is well trained, committed, and professional in their outlook. Students are serious minded, attentive, dedicated, and seem to be grateful for their educational opportunity. Students, graduates, and their employers provide positive feedback about many aspects of the ISAI training.

While there have been great strides taken in improving the quantity and quality of 'practicals', the curriculum may still be too extensive. There is a lack of support materials in some areas. Time management could use some attention - time on task remains an area for possible improvement. As in most human endeavors, communications need improvement. There does not appear to be an orientation for new students, and communications with other projects and agencies could be enhanced. Recruitment activities have resulted in substantial increases this past year. These activities lack a written plan, and there may be some exaggerated claims regarding the availability of scholarships). Graduate placement has been excellent, however, nearly half of the graduates are at post-secondary institutions, not a primary objective for the project. Talking with students resulted in some fairly typical complaints regarding conditions of bathrooms, insufficient blankets, and a desire for more and better food. Some problems identified in earlier evaluation reports remain unaddressed.

Suggestions for resolving a number of these issues include: revising the curriculum in cooperation with the MOE and MAF, further incorporating the task analysis-derived competencies; complete the textbook and other materials development efforts; provide inservice on time management for staff; implement an orientation session for students; develop a written plan for inservice activities inside and outside of the country; develop and follow a written plan for student recruitment; develop a plan for retaining graduates in mid-level positions (at least for a specified time period), study recruitment efforts to remove any exaggerated claims; determine validity of student complaints about living conditions and fix if true.

## Ibb Secondary Agricultural Institute - Internal Evaluation

### ACKNOWLEDGMENTS

This evaluation report depended very heavily on the courtesy and cooperation of a large number of on site individuals. To all those people who gave of their valuable time we express our sincerest gratitude. We owe our special thanks to Mr. Ali Kasim Ismail, School Director, Dr. Everett Edington, Team Leader, all of the teachers, staff, students, graduates, and employers for their courtesy and help. We especially appreciate the help given by Dr. Mohammed Al-Harazzi, Director of Agricultural Education in the Ministry of Education. All of the Yemen Project staff at New Mexico State University were most helpful in getting the TDY and his wife ready for the trip. They are especially grateful for the help of Mrs. Mary Reynolds, Dr. Gene (H. E.) Ross, and Dr. Harold Matteson.

As the "visiting fireman", I must express my deepest appreciation to Dr. Khairy Aboul-Seoud, the other half of this team. Dr. Khairy was invaluable in providing assistance to me in developing the data collection instruments, arranging for interviews, and helping me in understanding the ISAI Subproject.

On a more personal level, I want to thank Dr. and Mrs. Edington, Mr. and Mrs. Rosencrans, and Mr. and Mrs. Musa Allagabo for welcoming us to Ibb and making our stay more enjoyable. Lastly I would like to thank my spouse, Jan, who helped me with this project through her research and typing skills, as well as her willingness to come here with me in the first place. Her support was invaluable.

Instructional Improvement

# Ibb Secondary Agricultural Institute - Internal Evaluation

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INTRODUCTION

The present evaluation assessed ways of improving the instructional component of the Ibb Secondary Agricultural Institute. The Ibb Secondary Agricultural Institute (ISAI) is one of three secondary agricultural institutes in the Yemen Arab Republic. ISAI was the first, being established in the fall of 1979 by the Consortium for International Development (CID), the lead university being New Mexico State. Funding was provided by the United States Agency for International Development (with facilities being paid for by the World Bank). As stated in the Phase II Subproject Paper (dated April, 1985, the purpose of the Subproject is:

"To improve the efficiency of the secondary agricultural education system of the Ministry of Education (MOE) to supply Yemen's agricultural sector, including the Ministry of Agriculture and Fisheries (MAF) and the private sector, with qualified manpower." (p. ix.)

In the same document, a Manpower Analysis appears as Annex E. In that annex, it is estimated that from 1984 thru 1992, the total demand for secondary agricultural school graduates will be about 2100 (based on samples only). At best, the existing secondary agricultural schools will be able to produce about 700 graduates, leaving an excess demand for at least 1400 qualified graduates. The secondary agricultural educational institutions, therefore, will only be able to partially fulfill manpower demands for the next 7 years. In addition to the obvious goal of educating Yemeni youth, an important component to the ISAI Subproject is the recruitment, training, and placement of qualified Yemeni into teaching and administrative positions within the ISAI school. An additional component is the generation or modification of instructional materials including textbooks. Facility enhancement and

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equipment acquisition remain important components. Specific ISAI Subproject outputs will be discussed and assessed in a later section of this report.

### METHOD

Roughly speaking, the methods utilized in conducting this evaluation approximated those recommended by Stufflebeam et.al. in the so called "CIPP" model. CIPP stands for Context, Input, Process, and Product. Context refers to the environment of the evaluation - the location of the subproject, the geography, the politics, and the social climate, including language. In some ways, Context evaluation is the "Needs Assessment" portion. Input, on the other hand, refers to the resources available to carry out the subproject - the students, personnel, facilities, the finances, instructional materials, and so on. Process evaluation deals with the formative aspects - the instructional process, the inservice, the practical instruction, and the day to day operational level. Product evaluation generally refers to judging the worth of a subproject. In this situation, however, Product Evaluation refers to looking at the "products" of the subproject - that is the graduates, and the judgements of the graduates' employers.

CONTEXT EVALUATION. While the consumers of this evaluation are familiar with the context, the TDY (Temporary Duty) member of the evaluation team was not. By reading the Subproject Paper, and other documents made available, this deficit was easily cleared-up. Additionally, the travel required to conduct the evaluation, immersed that member very quickly into the context of the subproject.

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INPUT EVALUATION. The inputs evaluated for this evaluation included student recruitment, faculty and staff manpower, facilities, finances, and instructional materials. Methods of evaluation included student and staff interviews at the school, interviews of MOE personnel, inspection of facilities, and inspection of materials. In addition, transcripts of Yemeni teaching staff were inspected, as were the curriculum vitae of the third country professional (TCP) teaching staff.

PROCESS EVALUATION. The instructional process was assessed by student and graduate interviews, class observations, practical class observation, faculty interviews, inspection of class and practical schedules, attendance at inservice and faculty meetings, and inspection of faculty inservice records (including previous TDY reports).

PRODUCT EVALUATION. Evaluation of the subproject's products, that is its graduates, was performed by interviewing both graduates (44 in 11 different sites), and employers of graduates (27 graduates were evaluated by 17 employers). Tallies of these interviews, as well as summarizations of the narrative portions are presented in a forthcoming section.

### RESULTS OF THE CIPP EVALUATION

OVERALL (and CONTEXT). Without a doubt, the ISAI Subproject is a success. Before this evaluation, the Subproject Paper prepared by the CID Design Team, was approved for Phase II funding. The typical assessment or evaluation for the purposes of a continuation or termination recommendation would not, therefore, be appropriate. The evaluators found the ISAI subproject to be fully functioning, and

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meeting nearly all specified targeted outputs. The school environment is pleasant, the facilities more than adequate (with exceptions noted later). Students show great enthusiasm, dedication, and interest in their own education. The staff and faculty are well trained, committed, and interested in making the school and its instruction better. A new school director is grappling with his new job, but with a willingness to work hard to get it done. There is a dedicated and patient team leader supporting the subproject in every way he knows how. There is also a hardworking farm manager patiently waiting for the maintenance help to allow him to become more actively involved with the instructional program of the school.

The TDY member of the evaluation team recognizes the great efforts and dedication of the TCP staff (those already departed as well as those still on site). These staff have endured difficult times, high turnover in project staff, and have worked diligently to have themselves replaced by Yemeni counterparts. Whatever successful curriculum development has occurred has been because of the sincere efforts of the TCPs. I for one applaud their efforts.

Graduates from ISAI and their employers are generally positive in their evaluation of the school, its curriculum, and facilities. Overall the program is viewed as positively contributing to the manpower needs of the Yemen Arab Republic. The subproject is not, however, without some difficulties. In the hopes of providing information in order to improve the ISAI Subproject, the following is provided.

## Ibb Secondary Agricultural Institute - Internal Evaluation

### INPUT

STUDENT RECRUITMENT. The first year class is up to 47 as of this writing. This is a tremendous increase over last year. There is a recruitment plan, and it seems to be working well. Included are such things as school visitations, nationally televised recruitment spots, and aspiration studies of the preparatory graduates. However, the plan is unwritten, and there is some risk of overlooking aspects of the plan. This is especially true in the high turnover environment of the ISAI. There has been some concern expressed that recruitment efforts exaggerate the availability of post-secondary scholarships. A number of current students and graduates indicated that this was a serious problem as far as they were concerned.

FACULTY AND STAFF. The Yemeni teaching staff seem to be very well prepared. Their transcripts show relatively high grade point averages in substantial graduate programs. One of the current teachers failed to obtain his MS degree but is nevertheless on the teaching staff. The TCP (third country professional) teaching staff all have substantial vitae, comparable with many stateside university people. This is not surprising in that all have held (or hold) positions of substance in either Egypt or the Sudan. If anything, the TCPs might be considered overqualified for primarily teaching jobs. Their presence at the ISAI was justified, however, because of the developmental nature of the subproject.

FACILITIES. Facilities appear to be excellent. While not yet operational, the new Food Technology building, when fully equipped, will be a very comprehensive facility. The only facility lacking

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seems to be additional farmland for the school farm. With the expansion of practical lessons, and the addition of student projects, there is a crying need for some additional land. It is our understanding that negotiations are underway to obtain such land, and that closure is near. Hopefully, it will not be too much longer before this issue can be resolved. Some individuals interviewed felt that a number of facilities might be underutilized. A specific example was the greenhouse. We understand that there is a TDY scheduled to work with the greenhouse staff in the near future.

FINANCES. Finances do not appear to be a problem for the ISAI Subproject. All personnel interviewed felt that the financial backing for the subproject is sufficient. Examining the budget reinforces that notion. The budgeting cycle needs to be improved to allow better planning.

INSTRUCTIONAL MATERIALS. Textbooks in some areas of the subproject are non-existent. The subproject has attempted to subcontract the development of appropriate texts for several of these areas. Substantial progress has been made. Four texts have been completed with two more due within the next two weeks. Other subcontracts are under development. At one stage, the Yemeni teachers reviewed a number of the texts and found them unacceptable. After negotiations, they have agreed to provide substantial revisions making the books more acceptable. In the future, there will be more collaboration on the development of appropriate textbooks. Nearly all teachers are developing Yemenized materials for their classes. There is a substantial teachers' resource center with lots of help for developing instructional materials. It is used extensively by most of the

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teachers. Instructional equipment is sufficient although there might be a need for more motion picture or VCR equipment as these uses increase.

## PROCESS

**STUDENT INTERVIEWS.** Eighteen students were interviewed in three small groups. The questions asked at these interviews along with student responses follow. Student responses are separated by semicolons. They appear here in their entirety. A brief narrative summary follows the student comments.

### First Class (Year)

#### 1. Why Did You Come To ISAI?

Likes agriculture; there is a national emphasis on agriculture - a good place to work; loves agriculture since he was a child, worked with his father on farm; is a farmer, likes ag.; likes ag.

#### 2. What Do You Hope To Do When You Graduate?

Extension (after military duty, also college if possible); college first, if possible, then extension; wants to start his own farm if can get money; will work anyplace in ag; any job in ag

#### 3. What Is Your Most Favorite Subject? Why?

Religion, botany, horticulture, plant production - he understands and likes nature.; religion and all agricultural subjects especially crop production, horticulture and animal production; animal production - likes living things; ag extension - likes social aspects; horticulture, plant protection, agronomy, animal production

#### 4. What Is Your Least Favorite Subject? Why?

English because of lack of background (knows that it is important, but doesn't like).; English and math because they are difficult; ag. extension; chemistry - difficult and confusing; math, chem and physics - doesn't see relevance to ag

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### 5. How Can The Program At IBB Be Improved?

Bathrooms, because they are far from living quarters. Textbooks are not yet in for religion and math. Practicals are very good, everything is very good.; first class is too big for practicals, need to have smaller classes. Discipline of the school is very good, and afternoon practicals are excellent; lack books (have had two exams in religion), 1st class is too large (more students are due in soon) especially for practicals; would like to go to lunch earlier on Thursday when they have no 7th class period, not enough food at supper (quality is ok, just need more bread); too many students in practicals, that is why, probably, they are not very well organized.

#### Second Class (Year)

##### 1. Why Did You Come to ISAI?

Likes agriculture; is extension worker and can start as 2nd year student (saves 1 year); likes to work in agriculture; likes to work in agriculture; is extension worker, hopes to better himself; thinks there is a variety of jobs and agriculture is important to country; personal development.

##### 2. What Do You Hope To Do When You Graduate?

College and then extension job; if he has a chance, college, then back to his job; extension worker, but wants to complete college; continue education then a job in agriculture; extension worker; continue as extension worker and go to college;

##### 3. What Is Your Most Favorite Subject? Why?

Agricultural mechanics, and ag. extension because they are understandable; horticulture, crop production, animal production, food technology, plant protection - all ag subjects; all ag subjects; all ag subjects except animal production (not interested in that one); all ag subjects especially ag. extension, horticulture, plant protection, animal production, and ag. mechanics)

##### 4. What Is Your Least Favorite Subject? Why?

None; Arabic and English - has no value to his work, chemistry - not related to his interest; all non-ag subjects - not related to practical things; chemistry - not related to practical; soils, and chemistry (relatively speaking); soils - teacher, not being exposed to practical aspects; English, math - too difficult. Also he objects to person not liking soils,

he likes it.

5. How Can The Program At Ibb Be Improved?

Anything to be taken serious has to be practiced. Teachers (sometimes) do not explain very well; practical lessons need to be better organized, explanations need more details, spacing of lessons, sometimes no teacher at beginning of year, exams and quizzes should be in written form, not dictated. Bathrooms dirty, need more variety of food. Need a physician available.; some books need to be Yemenized. Some that are already Yemenized are too short. Need to provide handouts of research findings. Should leave textbook with students at end of year, not take them back - need the reference materials. Some teachers do not have ability to communicate and need to have more training. Practicals need to be better organized (especially for the morning.) The afternoon practicals are OK, especially when they are different from the theoretical classes. Audio visuals need to be improved, and more films are needed. Need more facilities for practical training. There is not enough AV equipment for use in AV segment of the Ag Extension course. Bathrooms are very poor. Students are not allowed to use electricity for anything. Lamps are arranged poorly.; Summer training is great but needs to be longer.; why not use farm products to feed the students or allow them to sell them. Examples in classes need to be Yemenized as much as possible. Audio visuals need to be improved and developed locally (other projects in Yemen may have some that could be shared). Names should be Yemenized.; students are exposed to too many ornamental names without seeing the plant. Blankets are dirty when they are given to students, two blankets are not enough to keep warm. Need more extra curricular activities, such as handwriting.; too many subjects, can't find time to study for all. By the 7th period, students are tired.

Third Class (Year)

1. Why Did You Come To ISAI?

Likes agriculture; thinks a specialization such as agriculture is better than general education; Ag is central to development for Yemen and he likes agriculture; is a farmer himself and sees improving ag as the only way out of economic difficulties; loves agriculture

2. What Do You Hope To Do When You Graduate?

Ag (govt. or private) - doesn't see much choice at this time; wants to go on with school; horticulture or

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agronomy because he understands it; if possible, more school but any field of agriculture; post secondary education with a specialization in horticulture; continue his education. All want to go to the university but realize that most will not be able to do so.

### 3. What Is Your Most Favorite Subject? Why?

Agricultural economics and agronomy; all agricultural subjects because it allows him to get in touch with nature; horticulture and bee keeping because he likes to see fruits and ornamental plants - bees because they are necessary and can be worked with no or low cost; all ag subjects because they are all connected.

### 4. What Is Your Least Favorite Subject? Why?

Chemistry - because of the teacher; chemistry and dairy technology because the practicals are not related to the subjects, are more difficult and he has problems understanding; ornamental plants (if you can't eat it he isn't interested in it!), and chemistry because it is not taught the best way; dairy technology, chemistry (too general, not specific to agriculture), physics; none mentioned.

### 5. How Can The Program At Ibb be Improved?

Plant protection book is Egyptian, should be Yemen, book is old. Too many technical terms. Individual plots are too small for mechanization, students will have to work by hand. Washing machines for students are badly needed. Students worry about the cleanliness of the blankets when they get them - worried about getting a disease; don't get a chance to use some equipment (e.g. grass mower). Need smaller groups for practicals and actual use is minimal in some areas - in others good (food technology). Models in ag. mechanization would help before going to the "real thing". Need a variety of food, need water heaters. There are some but they are not available to students.; Need more equipment for practical training, need practicals for agricultural extension. There are shortages in the food technology lab. Students haven't seen some types of plows. Need more variety in food. The student union has raised questions but get negative answers. Bathrooms for example. Need more community involvement and outreach.; need better facilities for practicals, communications with faculty are poor (posted office hours might help). Need more facilities for post secondary education in the country. And more scholarships. Need to use more types of equipment, especially food technology, and all laboratories in general, and need lots more hands-on.

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As can be seen, most students come to ISAI because they like agriculture, and feel that there is a need for the country to do better in agriculture. A surprising number of students (at all class levels) indicate their desire to continue their education. This appears contrary to the intended purpose of the institute, but it may be that the character of this purpose is changing. Favorite subjects were almost always selected from the agricultural subjects, whereas the least favorite subjects were generally from the non-agricultural areas with the "harder" subjects of sciences and English taking their toll. Suggestions for improving the program at Ibb were substantial and are worthy of careful study. Generally, students were in favor of more and better practical classes.

### PROCESS (continued)

GRADUATE INTERVIEWS. Interviews were conducted with 44 graduates from the years 1982-1984. This amounts to approximately 40% of the population of all graduates from those years. We concentrated on those areas and agencies where we knew that a number of graduates were employed. We have no reason to believe that our convenience sample is biased in any substantial way.

Included in the sample were Ministry of Agriculture and Fisheries (MAF) Extension, Research, Plant Protection, Seed Production, and Rural Development agencies and projects. Locations included Ibb, Sana'a, Taiz, Zabid, Gyrba, Dhamar, and Risabah. The largest number of graduates found at any one facility was at the University of Sana'a, where we interviewed 13 of the 24 students enrolled. A number of these young men were also employed by various agencies in the Sana'a

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region. Before the appearance of the TDY team member, the team leader of the ISAI Subproject interviewed 7 graduates on their way to post-secondary training programs in Egypt. That total (20 out of 44) represents about the same percentage of graduates known to be attending post secondary institutions. As you can see from many of the comments made by the graduates, a number of those not attending higher education want to very badly.

Next, we have presented the first part of the questionnaire results (those dealing with their assessment of the Ibb curriculum in general). We will hold off until the PRODUCT section before dealing with the graduate's perceptions of the curriculum as it relates directly to their jobs. Their assessment of the practical instruction will also be presented in a later section.

Following the presentation of the tabulated data appear the graduate responses to the general questions along with a narrative summary.

### GENERAL VALUE OF SUBJECTS TAKEN AT IBB

AREA	POOR	FAIR	GOOD	EXCELLENT
Ag. Extension	0	0	10	34
Economics	0	0	17	26
Horticulture	0	3	13	28
Animal Science	1	1	11	31
Crops	0	5	17	22
Soils	0	8	18	18
Plant Prot.	1	4	15	24
Ag. Mech.	0	2	13	29
Surveying	6	8	16	7

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Workshop	9	6	12	9
Food Tech.	3	9	22	11
Dairy Tech.	2	14	17	9
Bee Keeping	1	5	14	21
English	12	7	15	8
Arabic	7	10	22	5
Math	17	11	9	6
Islamic	1	4	18	21
Botany	0	6	11	27
Zoology	2	4	22	15
Chemistry	12	10	8	13

As can be seen from this table, the graduates perceive the curriculum in similar ways to the current students. Ag subjects are generally rated more highly than the basic subjects (although there are certainly exceptions to that observation).

### GRADUATE COMMENTS QUESTION I

What Suggestions Do You Have To Improve Theoretical Training?

Study modern mathematics, more emphasis in chemistry and organic chemistry. Need to Yemenize all agricultural subjects.

More emphasis on Yemen subjects.

Have the same curriculum as the general secondary school as far as the basics are concerned.

Coordinate between institute and college. Should be more emphasis on non-agricultural subjects.

Curriculum is too much - should decrease. more emphasis on non-ag subjects. This will allow the student to pursue post-secondary education.

More emphasis on non-ag subjects.

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Apply the same subjects as general secondary for math and chemistry. Need better instructors in the English language. If possible, a non-Arabic teacher to teach English.

Decrease the time of theoretical subjects.

Yemenize the ag. curriculum.

Chemistry needs more emphasis. So do statistics, horticulture, and fisheries.

Reorganize the curriculum to be more suitable to the Yemen situation. Need more emphasis on public affairs.

Yemenize the curriculum. Need to use more research that has been conducted in Yemen.

More emphasis on math and chemistry.

Try to arrive at a curriculum that is 100% Yemen. Omit parts about Egypt. Improve teaching methods.

More emphasis should be placed on math. Improve the English course. Yemenize the curriculum. More emphasis on plant protection, and ag. horticulture.

More time for studying.

More emphasis on non-ag subjects.

More emphasis on math, chemistry, and English.

More time devoted to math, chemistry, and agricultural subjects.

More time for chemistry, physics, English, and math.

Scientific terms (Latin) should be added to some subjects such as chemistry, plant protection.

Going on to college should be taken into consideration when planning the curriculum.

Better curriculum in chemistry, math, physics, and English.

Better curriculum for chemistry and math. Better teachers for those subjects. Have better textbooks for those subjects.

More time and emphasis on theory, math, chemistry, physics, and English.

Not enough time for math, chemistry, or physics.

More audio-visual aids.

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- Better teaching of physics, chemistry, and English.
- Better curriculum especially in math, chemistry and physics. Yemenize horticulture and plant protection subjects. More time is needed for agricultural subjects.
- Yemenize the curriculum in some subjects.
- Make more use of information gathered from Yemeni projects - getting more information about problems facing Yemeni and teaching it.
- Too much memorization, not enough application.
- Summarization of economics and extension handouts too much. Simplify English subjects. Study of herbicides which are available in marketplace - not all different kinds which are not available. Do experiments on farmer's land.
- Devote more time to English and math. More time for agricultural subjects.
- Too much theory.
- More specialization.
- Practicals should be related to theory.
- More emphasis on non-ag subjects. Yemenize the curriculum.
- Emphasize theoretical training.
- More farming facilities and text books should be Yemenized.
- More explanation and use of audio-visual aids.
- More audio-visual aids. More time for lessons, better textbooks.
- Reduce the curriculum in non-ag. subjects. Yemenize and simplify all subjects.

### GRADUATE COMMENTS QUESTION II

What Suggestions Do You Have To Improve Practical Training During the Year?

- Emphasize more practical training in all subjects, especially those that the graduate is going to use in his work. Yemenize crops. Make food technology more practical.
- More practical training in: experimental design; cultivation

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of different crops; pruning and cutting; trimming; planting of trees; food production; beekeeping.

More time for practical classes.

Practical applications very important, especially in final year and more emphasis on practical.

Less emphasis on practicals.

More practicals in chemistry.

Decrease time for non-ag subjects.

Improve practicals of animal production and farm mechanization.

More emphasis on practical training.

Scheduling practical training in a better way - should be more creatively associated with the theoretical classes.

Allow students to spend part of their schooling on the farm working on extension and experimentation.

More emphasis on practicals. More use of research results (applied knowledge).

More practical lessons - more equipment, more visits to projects, better equipment for the chemistry lab.

More organization of practical periods. More hands-on work on the part of students.

Practicals were good - need more laboratory work in soils, food technology, etc.

More time needs to be spend in basic subjects, more facilities are needed for training. More time for practical training in chemistry.

More time for practical training (horticulture, crop production, soils, botany, chemistry, food technology, ag mechanization, plant protection, agricultural economics, and extension.

More time for practical training and field trips. Need to conduct some experiments on school farm.

Practical lessons need to be better organized - some are short, some long.

More samples should be used as teaching aids. Species of different diseases and insects need to be used.

More time for practicals.

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Practicals for ag. subjects are good. Non-ag subjects didn't have very good practicals.

Application should be given the same day that theory is taught.

More emphasis on practical.

More practical training in chemistry, botany, zoology, animal production, and horticulture.

The 1st class of students should not be used as farm laborers.

More practical training, more hands-on.

The practical training was good, but needed more time.

Need more facilities for practicals.

Need to better relate practicals to theory.

Too many theoretical classes not applicable to students' work.

Practicals were good.

More practical classes, more facilities needed for practical training.

Practicals were enough.

More emphasis on practicals.

More models. Exposure to real thing such as plant protection or horticulture. More practical application on ag. mechanics.

Improve school laboratories. More time needed for mechanization.

More practical training.

Improve laboratories - need more equipment.

More facilities - more practical classes for food technology, plant protection, and soils.

More time, more audio-visual, more field visits.

Increase the number of practical classes if possible. Work in the afternoon. Need more equipment and facilities for some labs.

GRADUATE COMMENTS QUESTION III

What Suggestions Do You Have To Improve Practical Training During the Summer?

Summer training time is not enough. Some producers do not care much about students. More time is needed for summer training and it needs better planning.

Practical training in different agricultural products.

More time for summer training, especially extension and soils.

Summer training is very good - needs more hands-on work and emphasis on extension and farm management.

More facilities for summer training. More follow-up and supervision from the institute.

More coordination with projects on summer training. More money for students during summer training.

Summer training is good. One addition should be the planting of public gardens.

More time is needed during summer training in order to live at projects in different areas.

Summer should continue for all three summers, and each summer should be devoted to training in one or two subjects only.

There should be more incentives for summer training.

There needs to be more supervision from ISAI teachers during the summer program.

Summer training should place more emphasis on applied aspects and there should be more time devoted to summer training.

The summer practical training was good.

The summer program should be better organized to benefit the student.

There should be more exposure to different sites during summer training.

There needs to be more visits to extension facilities. There also needs to be more time for farm record keeping.

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- Needs to be more exposure to different places in Yemen.
- More time.
- More time.
- Wider distribution across Yemen for students.
- Summer program is very important.
- There needs to be more time for summer training.
- The summer training was very fruitful. Keep it as a standard.
- The summer training needs to be all summer long.
- The summer training should be restricted to just one project.
- Summer training was good. Hodeidah was hot.
- Summer training was good.
- There needs to be more time for summer training and reporting.
- Summer training needs to be at least 1 1/2 or 2 months long to allow students to have experiences in all part os Yemen.
- There needs to be more variation in summer training.
- Summer training important - allows the application of training learned during the year.
- More hands-on work needed.
- There needs to be more supervision from school personnel during summer training.
- More facilities are needed for summer training - also more time.
- Need to emphasize extension work during summer training.
- More emphasis on summer training and specialization.
- Training needs to be coordinated with the agricultural seasons. Need better planning for student lodging and board. More coordination with schools training program.
- More time for summer training. Need to organize some training outside of Yemen.
- More time.

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More time.

More time and have training outside of Yemen.

More time, more supervision, and more training in dealing with farmers.

More time needed for summer training and more projects need to be covered. Need better transportation for the summer training. Evaluate student reports. Give incentives for those students giving more work.

CLASSROOM OBSERVATIONS AND FACULTY INTERVIEWS. All six Yemeni teachers and the three third country professional teachers were observed and interviewed. These were:

## YEMENI;

Abdul Karim Sa'eed Kassem - Horticulture

Ahmed Abdu Saif - Ag. Extension

Mansour Ahmed Al-Howshabi - Ag. Economics

Ali Kasim Ismail - Beekeeping

Hussien Muhammed Farra - Farm Mechanics

Mohammed Abdulah Saleh - Horticulture

## TCP;

Musa Ahmed Allagabo - Horticulture

Mohammed I. El-Gharbawi - Food Technology

Awadalla Yousif Hamid - Animal Science.

At least one class session was observed by a member of the evaluation team for each faculty member listed. While all lessons observed were conducted in Arabic, it was felt that an adequate assessment of teaching performance could be determined. Each class was observed for a minimum of 20 minutes. After the observation the observer attempted to meet with the teacher as soon as possible. The lesson was

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discussed, clarifying points of confusion, and suggestions made where appropriate. It was interesting to note that a number of the younger, less experienced teachers were insistent on obtaining feedback regarding their teaching performance.

Generally, the instruction was impressive. Teachers seemed to be well prepared, organized, and motivated. Students, too, seemed to be attentive, and motivated. One problem was noted in more than one class - late starting and early ending. With 45 minute classes, teachers can ill-afford to waste time in such a fashion. In addition, some teachers spend an inordinate amount of time taking roll. It would seem to be far simpler to use a seating chart, or use a helper, or pass around an attendance sheet. In other situations, teachers took a great deal of time getting the classes going.

Lesson plans were not in evidence, and class syllabi are non-existent in many classes. The curriculum being followed was developed by the TCPs in 1980 and has been modified only in a minor way in 1982. Teachers claim that the curriculum is dictated by the MOE, but the MOE says its ready to help develop the curriculum. The testing conducted by the MOE for all 3rd year students does seem to receive a lot of attention by the teaching staff.

A serious criticism of the curriculum is that it is very complex - not only in terms of the number of subjects, but in the level of coverage. In many ways the curriculum reminds one of a university program. The level of coverage may be appropriate to the MOE tests, but a number of subjects are unduly complex.

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Use of a variety of audio visual aids was apparent in most of the classes, although the "lecture" method prevailed in almost all formal class situations. Some discussion took place, but mostly in the form of question and answers. Practical classes are discussed in the next section.

Some of the staff interviewed expressed concern with what would happen to the support positions (such as Gwen Edington's running the Teachers' Resource Center) once the conversion was complete.

**PRACTICALS.** A great deal of activity and attention has been given to this area. Nearly everyone agrees that this project needs more practical lessons. The evaluators saw a lot of activity in this area. Every afternoon (almost) is devoted to practical lessons of one form or another. Several work sessions and inservices have been devoted to practicals as has at least one TDY session. Unfortunately, the term 'practical' doesn't always mean the same thing to different people. First of all not all faculty agree that 'practical' means hands-on activities where the student learns from doing. To some 'practical' means demonstration or formal laboratory sessions.

There is a great deal of new activity in conducting 'practicals'. The evaluators believe that earlier criticisms may become a thing of the past - and fairly soon. It was observed, however, that students do not get involved to any significant extent, in "outreach" or extension activities of faculty. In fact there seems to be a deliberate attempt to discourage such activities on the part of faculty. This was specially true in the area of extension. At one time, extension outreach was quite extensive. It would seem that such activities might

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be appropriately encouraged, especially if tied to student training.

CLASS AND PRACTICAL SCHEDULES. The schedules for formal classes and afternoon practicals were inspected. Except for some minor changes, these schedules were closely adhered to. The class schedule is a bit overwhelming. Student spend an average of 40 hours in school, attending as many as 17 different subjects per semester. Some classes meet as seldom as once per week. From at least the evaluators' viewpoint, there are entirely too many classes being offered.

FACULTY INSERVICE. Inservice activities have been improving. There is a defined plan for each faculty member and administrator. Many of the TDYs are brought in for the specific purpose of conducting inservice activities. Additional inservice sessions on instructional improvement and time management might be appropriate. Topics such as: test construction; lesson planning; student evaluation; and so on might be appropriate to consider.

SCHOOL FARM. The school farm remains a vital part of the school plan. From the perspective of many personnel interviewed, the school farm is central to the educational mission. The farm manager has ended up being the primary maintenance person for both the compound and the campus. He spends most of his time putting out fires and has little time to pursue his instructional involvement. Currently there is a search underway to hire a person for the newly approved maintenance position. That should help a great deal in releasing the farm manager to manage the farm and to get more closely involved in the instructional program.

PRODUCT

GRADUATE INTERVIEWS. As a continuation of the graduate interviews discussed in the PROCESS EVALUATION section, we present here the results of asking for coursework ratings in terms of value to the present job. These results appear below.

SPECIFIC VALUE OF SUBJECTS TAKEN TO THE PRESENT JOB

AREA	N/A	POOR	FAIR	GOOD	EXCELLENT
Ag. Extension	1	0	6	6	24
Economics	9	1	5	12	14
Horticulture	3	0	1	13	24
Animal Science	11	2	3	11	13
Crops	2	3	1	17	14
Soils	6	1	2	21	9
Plant Prot.	2	0	1	11	24
Ag. Mech.	10	2	3	12	13
Surveying	11	7	4	4	8
Workshop	14	7	2	6	7
Food Tech.	14	6	2	8	6
Dairy Tech.	14	4	2	9	10
Bee Keeping	13	5	6	8	7
English	10	6	10	8	3
Arabic	12	4	4	9	8
Math	14	2	3	14	4
Islamic	11	3	0	6	11
Botany	5	2	5	15	12
Zoology	14	3	3	7	11
Chemistry	10	6	2	12	9

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Interestingly, the three agricultural subjects judged most valuable were agricultural extension, horticulture, and plant protection. As can be seen in the not applicable (N/A) column, a large number of subjects were considered not applicable. Again, one should not judge the quality of the current course offering by such value ratings, but it certainly does give some food for thought (and maybe some data for curriculum revision).

In addition to the questions and ratings already discussed, we also asked students to answer:

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Were Practical Lessons Sufficient in the Following Areas?

AREA	NO	YES
Ag. Extension	15	28
Ag. Econ. & Farm. Mgt.	21	23
Horticulture	20	22
Animal Science	8	35
Crops	15	28
Soils	27	16
Plant Protection	26	17
Ag. Mechanics	10	33
Surveying	28	13
Workshop	28	13
Food Technology	27	14
Dairy Technology	28	15
Bee Keeping	18	24

These data certainly provide important information regarding the thoughts and recommendations of the ISAI graduates.

EMPLOYER INTERVIEWS. In a similar manner to the student and graduate interviews, we attempted to interview a number of the employers/supervisors of the graduates. We interviewed such individuals for 24 of the graduates. Because of duplication we received data from 17 different supervisors. We next present supervisor comments in response to our three questions. Then we show their ratings of the graduates, Ibb training in general, and the specific subject ratings.

SUPERVISOR COMMENTS QUESTION I

What Suggestions Do You Have To Improve Theoretical Training?

Give more emphasis on plant protection.

Theory and Practical should go together.

More explanation to students, give more textbooks and handouts pictures & graphs to support teaching, use models.

More time for crop production and plant protection.

Supervisor found first graduates had little theory the next had better knowledge of theory, give more emphasis to fundamentals.

Have more theory on basic subjects related to agricultural and animal production. More emphasis on animal diseases (local)

Specialized curriculum.

Two years of general study in agriculture. One year in specialization (suggested curriculum)

Emphasize the basics of agriculture.

Specialization, emphasis on Yemen crops, more emphasis on Bee-keeping.

Decrease theory part (fills minds with useless information). Emphasis on Yemen crops. More emphasis on Bees.

Theory should emphasize local crops and problems that will help narrow gap between theory and practical.

SUPERVISOR COMMENTS QUESTION II

What Suggestions Do You Have To Improve Practical Training During the Year?

Recognize insects, plant diseases, herbicides. Operating and applying all kinds of herbicides.

Emphasize practical.

Emphasize practical.

Trips to fields and farms give students a chance to see all agricultural operations starting from seed planting to harvesting. Give students chance for milking, cleaning, and all animal care operations.

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More emphasis on practical application of theory. More on agricultural mechanization and surveying.

More emphasis on practical training especially Horticulture.

Give more emphasis on fundamentals.

More training on farm implements and farm machines suitable to Yemen.

More training on seasonal crops.

Practical study of different seasons.

More emphasis on practical training, use research forms.

Emphasis on practical training.

Have students write reports about farm visits

Field visits to projects and farms close to institute, reports.

Emphasis on practical training.

More emphasis on practical and field visits and more emphasis on local problems.

### SUPERVISOR COMMENTS III

What Suggestions Do You Have To Improve Practical Training During the Summer?

Programming experience and planning with projects before starting training. (Get program together before starting school).

More visits to nurseries and farms which are near ISAI.

Student participation with farmers on their farms, distribution of training areas all over Yemen. Getting the students to farms during the different seasons for different crops.

Participation with farmers on their farms in different parts of Yemen. Go to the farms during the crops.

Informing practical training place ahead of time - more coordination ahead of time in order to work out a good program for students.

Summer training should be instructed in the different agriculture areas in Yemen.

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Knowing systems of diseases of insects in fields and recognizing them.

Work with projects for a longer time.

More time needed for summer training - and more planning - because students sometimes go to projects in active seasons.

Briefing students about purpose of summer training before they start - ask students to report on summer training.

More time should be spent for summer training.

Visit or work with different projects all over Yemen to get ideas on different agricultural regions in Yemen and their crops.

Have summer training on production farms in Yemen.

During summer training have more nursery training. Need more information about local Yemen animal diseases.

Visit different areas in Yemen.

Have more field visits to different parts of the country.

Employers/supervisors have mixed comments regarding these questions. On the one hand, it is very clear that a majority want these graduates to have more practical training. On the other hand, they seem to be calling for more fundamental knowledge in some areas. Let's now look at their overall ratings of these graduates.

### Opinion of the Supervisor in Direct Contact with the Graduate

Weak	Reasonable	Good	Excellent	TOTAL
(1)	(2)	(11)	(10)	(24)

### Overall Opinion of Ibb Training

Weak	Reasonable	Good	Excellent	TOTAL
(0)	(1)	(21)	(2)	(24)

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## VALUE OF SPECIFIC SUBJECTS TAKEN AT IBB TO THE SPECIFIC JOB

AREA	N/A	POOR	FAIR	GOOD	EXCELLENT
Ag. Extension	2	0	3	10	2
Economics	7	1	5	3	0
Horticulture	4	0	4	5	4
Animal Science	10	0	0	5	1
Crops	8	0	0	4	5
Soils	3	0	4	7	3
Plant Prot.	2	0	6	4	3
Ag. Mech.	1	3	2	6	4
Surveying	8	0	4	3	2
Workshop	9	2	0	4	0
Food Tech.	16	0	1	0	0
Dairy Tech.	13	0	4	0	0
Bee Keeping	10	1	0	3	2
English	5	4	0	4	3
Arabic	4	0	1	5	6
Math	4	0	2	7	3
Islamic	10	0	0	1	3
Botany	3	0	2	4	7
Zoology	9	1	1	3	3
Chemistry	4	1	3	4	3

While these results are very interesting, one must temper any notions of making hard and fast decisions with the fact that we asked the employer/supervisor to rate the value of the subject to the specific employees job. Therefore subjects receiving low ratings could be doing so for a number of reasons unrelated to the quality of the

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course or instructor. A more thorough analysis of these results needs to be made looking at the specific jobs being subjected to the evaluation process.

### OUTPUT EVALUATION

ISAI SUBPROJECT OUTPUTS. The Subproject Paper outlined a number of targeted outputs. This section provides a status report regarding those targets.

Staff Trained - BS ahead of schedule, MS behind. Staff ok at ISAI for time being, other schools not so well off.

Training Materials Developed - instructional materials are doing pretty good, lesson plans and course syllabi not so. The published curriculum is viewed as lessons plans and syllabi.

Curricula developed - It was done in 1980 with some modifications in '82, needs revision.

Facilities completed and equipped - ok except for more land for farm.

Administrative policies and procedures developed and operational - Bylaws developed in 1980.

An outreach program developed and operational - needs attention.

Overall, these targeted outputs have been reached. There are a few concerns but nothing that can't be taken care of as soon as attention is focused.

### SUMMARY AND RECOMMENDATIONS

The Ibb Secondary Agricultural Institute Subproject is well into its Phase II. It enjoys the reputation of being a successful example of institutionalization in Yemen. The evaluators agree that it is, indeed, a successful subproject. In our estimation, this success is due, in large measure to the dedication and hard work of the people involved. The following recommendations are based on the data

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collected (but not necessarily presented in this report). Obviously, we hope that they are sound recommendations, which, if followed, will result in even more success.

### RECOMMENDATIONS:

1. The curriculum needs immediate attention. It was developed several years ago and needs to be revised. It is recommended that the MOE, MAF, and the Ibb School staff be involved in this process collaboratively. The recent TDY of Dr. Fancher shows great promise for helping the curricular revision process. The third year test needs more involvement from the school staff. It seems to be focusing a great deal of attention and is requiring extensive resources.
2. Continue the development of the practicals. A good start has been achieved but additional follow-up needs to be maintained.
3. Instructional materials need additional attention. Some classes (plant protection for example) need help in this area very soon. The evaluators have already put the teacher of this class, Mr. Mohammed Sallam Heider, in contact with the Yemen-German Plant Protection Project. Textbooks are being developed, but the process of reviewing has delayed the completion.
4. Time management for school staff needs attention. Some classes, while usually of high quality in terms of preparation and conduct, were observed starting late, ending early, and teachers generally showed a lack of awareness of time management principles. It may be appropriate to design some inservice sessions in this area. Many teachers complain of not having enough time to get their jobs done. This may be part of that problem.
5. Communications between students and teachers, seems lacking. It is recommended that a general orientation be conducted for both new and continuing students. In addition, the student handbook needs to be updated and used. Thirdly, it would be appropriate to encourage faculty to maintain scheduled office hours when students know they could make contact with teachers.
6. Another communications problem exists between the school and various governmental agencies that could be of great assistance to the school. Extension offices, for example, could be utilized for student training, and field experience. It is our understanding that this used to be the case. Revitalizing the use of field trips, especially, might be beneficial. Other examples include the Plant Protection Project which looks like an excellent source of instructional material. The Dhamar Agricultural and Forestry and Research Development Project has a great interest in having some forestry concepts included in the ISAI

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- curriculum as well as providing a site for practical training. In addition, when we visited we saw how they prepare potting soil. It is recommended that a formal process be initiated to take advantage of the many resources available. Teachers should be expected to utilize the resources in a variety of ways. It may be more fruitful to do this on an informal basis rather than to attempt to institutionalize it.
7. The student recruitment efforts have been paying off when a large increase in the first class. These efforts need to be formalized and documented for the benefit of those following. In addition, current recruitment efforts need to be analyzed in order to reduce possible exaggerations regarding the availability of scholarships.
  8. Depending on how the "problem" is viewed, the MOE, along with the MAF and the University of Sana'a need to work together to try to retain ISAI graduates in the targeted, mid-level technical positions. If this is not a problem (nearly half of the graduates going on to post-secondary education) then a reassessment of the ISAI objectives would be in order.
  9. Student complaints need to be heard. As part of the recommended communications improvement, a process needs to be implemented to allow such complaints to be aired. Encouraging more participation in existing student organizations may be of some help in this regard.
  10. The MOE needs to develop a clear cut budget for the ISAI on the Yemeni side. There has been a six year history of operations. The budgetary process needs to be placed on an annual or semi annual basis rather than quarterly.
  11. There needs to be immediate resolution to the additional farm land issue.
  12. The MOE must honor its promise of providing adequate laborers and technicians to assist instructors.
  13. There needs to be additional inservice activities for faculty and staff. Some of this should take place out of country.
  14. The curriculum development process needs to be institutionalized and should be carried out on an almost continuous basis.
  15. An additional problem with the curriculum is a serious imbalance among the various offerings. Chemistry, for example, takes up a great deal of the schedule. In some instructor's opinions, formal study of chemistry has been finished by midyear.
  16. The ISAI subproject story needs to be disseminated. There are some very good things happening that would be of great help to similar projects.