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Internal Training Evaluation

IMPACT STUDY: ADVANCED SEMINAR PROGRAM AND FOUR TECHNICAL COURSES

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Introduction

PURPOSE

In general, the purpose of all training evaluation is to validate a program's goals and objectives and to indicate where modifications to content and approach are necessary. In final evaluations, the purpose is more focused on ascertaining whether a program's goals and objectives have been attained and on providing direction for the future. The purpose of impact evaluations, performed after training is finished, is to estimate whether and to what extent a training program has produced sustainable results. The desired outcome is usually sustained improvements in the trainees' job performance levels and in the total productivity of their workplaces.

Chemonics' Human Resources Development Section (HRD) has conducted a limited institutional impact evaluation of training programs in the Local Development II-P Provincial Project in Egypt. The purposes of the evaluation were three: to ascertain whether, and to what degree, LD II-P training programs have had positive impacts on participants and local governorate institutions; to estimate the degree of sustainability of the positive impacts; and to gather suggestions for follow-up activities and improvements for future training programs.

SCOPE

Time and personnel constraints limited this study to an evaluation in three selected governorates of the Advanced Seminar program and four technical courses. Nonetheless, the scope and breadth of the sample are within acceptable norms for the defined purposes of this impact evaluation activity. The sampling of courses and governorates reasonably represents overall LD II-P training programs.

HRD chose the sample governorates from among the following:

- Governorates that had completed the four modules of the Advanced Seminars or at least three of the four selected technical courses by the end of February 1992, no less than three months prior to the start of evaluation
- Governorates that represent a mixture of high, average and low performers over the history of the LD II-P program
- Governorates that represent geographical regions, Upper and Lower Egypt and the desert governorates

The criteria for course selection were:

- The Advanced Seminar program, which has the largest and most diverse target audience of all LD II-P projects
- "Priority" technical courses which Chemonics technical section staffs and their USAID counterparts agree could be sustained and/or continued after the end of the LD II-P project ¹

Chemonics chose to study governorates that had completed the sample courses at least three months prior to the study in order to allow time for trainees to demonstrate impact and transfer new skills and approaches to their institutions and managers. Three months was chosen because of the limited number of governorates that had completed the Advanced Seminar program any earlier, although a six-month lag time might be considered ideal. In an evaluation of Gharbiya Governorate², a Chemonics consultant noted that over time participants tended to forget specific impacts of training; skills and behaviors learned in a particular environment become internalized and merged with the overall educational and attitudinal background brought to the workplace.

HRD did not attempt to verify whether reported or observed results were exclusively or substantially due to the specific training courses being reviewed. Time and resources were too limited to design measurements of change for such unquantifiable skills as program planning and management, nor has the program ever had a control group or a set of fully defined pre-program operating standards in the governorates as a basis of comparison.

METHODOLOGY

Three core questions, tied closely with the goals and objectives of the training programs, constituted the impact evaluation:

- QUESTION 1: What are individuals and local government institutions doing differently as a result of the training courses? What examples of applications, activities, operations, systems or projects can be cited to support or illustrate change?

¹ NOTE: at the time the parameters for the technical course evaluation were being jointly agreed on by HRD, the Chemonics technical sections, and LAD, the common thinking in LAD was that there was a possibility of an extension. For this reason, likelihood of extension was one of the selection criteria.

² Chemonics, *Advanced Seminars Workshops: An Assessment of Their Impact*, August 1991, HRD4-02 English

- **QUESTION 2:** How can the impact of the courses be improved? What follow-up activities should be pursued?
- **QUESTION 3:** How and to what extent do participants expect the impacts of the courses to be sustained?

The evaluation design used half-hour, one-on-one interviews with a sample of management and staff-level participants in the courses, and with nonparticipating managers whose staff members had attended. In this way, several different perspectives of the same issues could be obtained. The same core questions, plus a series of cross-checking questions surrounding the core issues, were administered in each interview. The questions were:

- 1. Now, several months after completion of the course, do you remember the topics dealt with in the course?**
[Participant is guided to recall the atmosphere and content of the indicated course.]
- 2. What does your governorate/markaz do differently now as a result of having personnel attend the course?**
[Participant is expected to talk about new attitudes, concepts and practices in place due to participation in the indicated course.]
- 3. How would you complete the following phrase: "The impact of the course would be magnified if ..."**
[Participant is guided to address changes that should be made to improve the indicated course and follow-up activities to magnify its impact.]
- 4. Suppose it is now the year 1997, five years from today. You will have moved to another post and someone else will have taken your current position. Will the momentum created and supported by the training be continued by the new people, or will it go away with your departure? What is the justification for your answer?** [Participant is guided to address the sustainability of the indicated course's impact on institutions, not individuals.]
- 5. Before we end this meeting, what last comments would you like to make about the course?**

Rather than use a multiple choice questionnaire, the evaluator chose a structured interview format in which questions were open-ended. Such questions, by their nature, elicit related commentary. Although the study design called for half-hour interviews, the evaluator provided extra time when the comments were pertinent and productive. When a respondent attributed changes to the impact of the courses, he or she was asked to cite a specific example. Thus the evaluator could ascertain the degree to which participants and supervisors perceived that there had been an impact from the courses on personnel and the institution and to what extent the impacts came from the courses in question rather than from previous educational or work experiences.

The responses, comments and observations from the interviews are categorized and presented in tabular form in the appendices of this report.

Advanced Seminar Program

INTRODUCTION

The Advanced Seminar program is the largest single training activity in the LD II-P project, and possibly the largest training program for project planning and management ever mounted in Egypt. It consists of four modules, each five to six days in length. By the end of the program in September 1992, nearly 1,500 participants from 138 marakez in 17 governorates will have completed the series.

Approximately 100 resource persons—curriculum designers and writers; adult training advisors, lecturers and moderators; Chemonics staff; Seminar observers; course participants; ORDEV personnel and others—contributed formally and informally to the design and creation of teaching materials. The delivery system entails simultaneously presenting, to about 120 participants per week, two seminar modules in different geographic locations every non-holiday week from November 1991 to September 1992. To do this, HRD maintains about 15 seminar trainers in the field, plus HRD and training support unit personnel and Chemonics technical staff who participate as lecturers.

The extent and size of the effort are important in achieving the goals of the Advanced Seminar program. Chemonics understood from the 1991 study of Advanced Seminar workshops (HRD 4-02) that previous project development training programs have often failed because they did not create the critical mass of trained individuals necessary to become effective agents of change in the workplace. The main goal of the program, therefore, is to create that critical mass of change agents necessary to bring about effective individual and organizational improvements in governorate administrative institutions.

Subsidiary to this overall goal, the Advanced Seminar program aims at:

- Strengthening the ability of governorate and markaz administrators to plan, analyze, contract, monitor, supervise, and manage rural and municipal infrastructure programs and projects and to operate and maintain infrastructure and services projects
- Refining the functional definitions of governorate and markaz departments and their roles in the project planning and management process

- Improving inter and intradepartmental coordination and cooperation among multidisciplinary workforces in the governorates and marakez
- Improving the planning, implementation, operation and maintenance of rural infrastructure projects in general, and particularly of other LD II-P projects

The Advanced Seminar training approach operates in several ways. The delivery system reaches large numbers of participants at the local level throughout Egypt. By design, participants are diverse in skills, disciplines and levels of responsibility. The seminar leaders use participatory training techniques developed for adult audiences. Participants are exposed to positive attitudinal and behavioral practices that create an environment in which improved skills can be used productively. This training approach was designed to create the critical mass of change agents needed to attain the goals of the program.

SCOPE

The Advanced Seminar program was evaluated in three governorates: North Sinai, Beheira and Beni Suef. These governorates were chosen according to the criteria listed in the introduction: completion of all four seminar modules at least three months prior to the study, geographic diversity, and level of performance in LD II-P projects. North Sinai is a desert governorate and is considered an average performer. Beheira, a high performer, is located in the Nile delta in Lower Egypt. Beni Suef is a high performer located in the Nile valley of Upper Egypt.

Because of the low performance governorates had finished the Advanced Seminar modules at the time of evaluation the evaluator could not study the impact of the program in those areas most needing the assistance the seminars designed to give. It is particularly unfortunate that Sharqiya, a chronically low performer, could not be included. Group A in Sharqiya finished module four as this study was in its final stages. The governorate director of planning suggested the first indicators of impact on this governorate. He noted that the only marakez in Sharqiya to have submitted acceptable project planning documents to the Ministry of Planning were those that had completed the Advanced Seminar program. Submittals from the Sharqiya marakez scheduled for Group B, which had not yet attended the seminar, were unacceptable in both form and content.

Another limitation to the study was that the sample governorates had completed their LD II-P fourth year plans before the seminar program ended, and the fifth-year cycle had

not begun at the time the evaluation survey was conducted. This eliminated an opportunity to see what impact the seminar might have had on that specific planning task. To compensate, the evaluator examined other similar types of documents produced after attending the modules, and identified as having been the result of participation in the seminar.

METHODOLOGY

The evaluator gathered 969 responses in 67 interviews in the sample governorates. The responses were tabulated by comment category; the comments were then grouped by topic. The results are displayed in Appendix A. Table A.1 lists the reported impacts of the Advanced Seminar program. Tables A.2 and A.3 contain suggestions for program improvements and follow-up activities. Table A.4 lists comments on the sustainability of the program. Table A.5 lists examples of governorate and markaz activities that have resulted from the Advanced Seminar program³. The examples presented in this report are only those for which documentation was collected; many undocumented examples were also cited in the interviews.

The comments and observations included in these five tables are the data on which this impact evaluation of the LD II-P Advanced Seminar program is based.

FINDINGS

In the discussions below, comments cited by the highest percentage of interviewees are displayed in the respondent comments tables.

Impacts of the Advanced Seminar Program

The interviewer recorded 653 responses in 96 comment categories and classified them into 11 topics for analysis. The tabulation and classification are displayed in Appendix A, Table A.1.

Overall Impressions

Thirteen of the 96 comment categories, and about eight percent of all responses, were general impressions of the overall effect of the Advanced Seminar program. Comments focused on improvements in performance style, attitude and general work skills: the program "helped organizing our thoughts...", "raised performance standards...", "...helped deal with actual field problems," "...helped us change attitudes." Thirty-six percent of all respondents stated that the program "introduced a new

³ Documentation for the examples was collected and placed in the files at Chemonics' HRD section.

scientific planning and management style." In North Sinai governorate, 70 percent cited this impact and an additional nine percent used the phrase, " added scientific dimension to our development skills."

Respondent Comments	Percent responding (N=67)
Introduced a new scientific planning and management style	36%
Application oriented training	12%
Action plans helped deal with actual field problems	10%

Impact on Specific Topics

Organizational Development

Three of the five most commonly cited comment categories concerned the Advanced Seminar program's impact on organizational development in the governorates. Coordination, team work, role definition—these words, and variants thereof, such as "common language" and "unifying concepts," appear again and again in the survey, and summarize the major impacts of the program on organizational development in the governorates.

A comment that the program "helped coordination among different departments," garnered more responses than any other in the study; it was cited by 63 percent of total respondents, including over half in each governorate. Some 40 percent said they had learned "the importance and use of team work" from the Seminar, and 39 percent reported that there was now "better role definition of individuals and departments" as a result of participation in the program.

Respondent Comments	Percent responding (N=67)
Helped coordination among different departments	63%
Importance and usefulness of team work	40%
Better role definition of individuals and departments	39%
Exchange of experiences among governorate's different departments	16%
Having top level management participants helped team work	16%
Building common languages among the different departments	13%

2/1/4
 2/1/4
 2/1/4

Interviewees from Kafr el-Dawar Markaz in Beheira offered two examples of organizational development exercises, one on role definition and one on interdepartmental coordination, that followed their training in the program. Participants from two marakez in Beni Suef produced examples of improved coordination between departments as a result of the training.

Although not cited in this survey, North Sinai participants in the program have told Chemonics' staff, "We came to know our markaz chief better by working with him informally in the modules and can [now] communicate with him better."

Planning Processes

Observations about the program's impact on planning processes in the governorates dominated the survey, in both numbers of comment categories and number of responses. Nearly half the responses, in 43 comment categories, were about various facets of planning. Comments with the highest response rates pointed in general to enhancements in pre-project needs assessment and problems analysis skills, improvements in the project selection process, including prioritization and feasibility studies, and an extended time frame in planning.

Respondent Comments	Percent responding (N=67)
Prioritization of projects is now more scientific	55%
Pre-project situation/problem analysis	36%
Sectoral planning is now better understood and applied	31%
Considering and selecting alternatives in project design	28%
Relying on a data base in decision making	27%
Eliminated haphazard project selection due to applying scientific criteria	24%
Multi-year planning	19%
Starting with scientific needs assessment	19%
Participatory planning with village chiefs and popular councils	18%
Scientific approach in planning	18%
Before we extended pipelines without considering the source	18%
Strategic planning	13%
Projects should address people's needs	12%
Appropriate site selection for projects	10%

Examples of planning work being done differently at the local governments as a result of the Advanced Seminar program were submitted by interviewees in Beni Suef, Beheira and North Sinai. The evaluator reviewed two governorate level feasibility studies from Beni Suef, eight planning studies done by the governorate of Beni Suef and two of its marakez, an example of project prioritization from Kafr El-Dawar in Beheira, and two examples of better sector planning (in transportation and potable water) at the governorate level in North Sinai.

Although the example was not identified in the course of the survey, the North Sinai planning director told Chemonics staff that markaz inputs for the new five-year development plan were better than previous efforts, and he attributed this to the Advanced Seminar program.

Contracting

Contracting, a subject of great interest during training, received nine percent of all responses in the survey. Respondents agreed that the program has given them a better understanding of the law on public contracts and bidding, and that their organization's contracting practices, particularly in bid selection and bidding documents, has improved as a result of the program.

Respondent Comments	Percent responding (N=67)
Better understanding and application of Law #9	37%
Better contracting practices	34%

Examples?

The interviewees provided seven examples of improved contracting practices following the training. The illustrations came from six different marakez in three governorates: four marakez in Beheira, one in North Sinai and one in Beni Suef. All of the examples indicated changes in contracting processes that had been implemented following the completion of the modules.

Outside this survey, Advanced Seminar participants from North Sinai have told Chemonics trainers that they now feel more confident in preparing tendering and contract documents and in dealing with contractors.

Project Implementation

Comment categories concerning project implementation also appear under several other topics. The major impacts of the Advanced Seminar program on project implementation and management have been in time scheduling and the use of data bases. Participants also cited increased use of monitoring and evaluation procedures in project implementation.

Respondent Comments	Percent responding (N=67)
Time scheduling	24%
Relation between time schedule and cash flow	18%

Interviewees provided four examples of improved time scheduling and project flexibility from one markaz in Beheira and two marakez in Beni Suef.

Suggested Improvements to the Advanced Seminar Program

The 67 interviewees gave 159 responses when questioned about how the Advanced Seminar program could be improved. The

responses were tabulated in 54 comment categories and classified in eight topics. The tabulation and classification are displayed in Appendix A, Table A.2.

Survey respondents had a variety of suggestions to improve the program. Two topics, group composition and "more time for," dominated the interviews.

Group composition—suggestions for the target audience of the program—had the highest rate of response and the largest number of comment categories on the question, accounting for 33 percent of total responses, in 15 categories. Many interviewees, particularly in Beni Suef and Beheira governorates, suggested the program should include village chiefs as participants. North Sinai interviewees suggested various target audiences: village chiefs, budget department officials, representatives from the Tarzeem-Wa-Idara and prosecution officers were most common.

Respondents also listed areas of training which should be given more time. Of the 14 suggestions under this topic, most agreed that more time was needed for training in contracting and Law 9. More time devoted to physical planning, feasibility studies and O&M were also frequently cited suggestions.

Other suggestions for improving the program included to "reduce the theoretical part and increase the practical one" and "include field visits to real projects."

Respondent Comments	Percent responding (N=67)
Inclusion of all village chiefs	31%
Contracting needs more time	19%
Should have been held before or in the beginning of LDII	16%
Reduce the theoretical part and increase the practical one	13%
Include field visits to real projects	10%

Suggested Follow-Up Activities

Interviewees gave 54 responses on this issue, organized by the evaluator in 14 comment categories under four topics. Table A.3 in Appendix A displays the tabulation and classification of total responses.

Most follow-up suggestions in the survey, 59 percent of total responses, in seven comment categories, were for more training of Advanced Seminar participants. In the main, respondents felt that the program's impact could best be magnified by periodic refresher courses and "exchange-of-experience" courses within governorates.

Respondent Comments	Percent responding (N=67)
Periodic refresher course to correct applications	24%
Organize exchange of experience courses within the governorate	10%

Interviewees from North Sinai offered two examples of follow-up activities designed to increase the impact of the Advanced Seminar program. The governorate's training committee has decided to use the program's format and training techniques in future courses presented by the governorate. The training committee has also decided to adapt and present Advanced Seminar materials to the governorate's local units.

Participants from Abu Homos Markaz in Beheira cited the fact that they had organized a mini-Advanced Seminar training program for 45 village development officials as a follow-up to the training they received. It will involve three segments of two days each, for a total of six days of training.

Sustainability of Impact

Participants in the survey were asked for opinions on the sustainability of the impacts of the Advanced Seminar program over five years. From 67 interviews there were 103 responses in 31 comment categories. The responses and comments have been classified into five topics. The classification and tabulation are displayed in Appendix A on Table A.4.

Responses to the question of sustainability were generally positive, indicating that Advanced Seminar program impacts are sustainable into the future. Fifteen percent of respondents agreed unconditionally: "We have transferred the Advanced Seminar experience to others to ensure sustainability."

Over 70 percent of responses however, were conditional. Interviewees felt the impacts of the program were sustainable if..., and most of the if statements suggested further training. The need for refresher courses was most often cited in North Sinai, for follow-up training in Beheira, and for training "the second tier" in Beni Suef. Among other comments were "if we organize visits to projects that use the Advanced Seminar approach" and "if participants transfer the Advanced Seminar experience to others."

Respondent Comments	Percent responding (N=67)
If refresher courses are organized to keep the momentum	22%
If we organize visits to projects that use the Advanced Seminar approach	16%
We have transferred the Advanced Seminar experience to others to ensure sustainability	15%
If participants transfer the Advanced Seminar experience to others	13%
If we train the second tier	12%
If follow-up training is provided	12%

Of 103 responses, only six were negative, that impacts could not be sustained over five years or that there would be only partial sustainability .

This survey indicates that impacts of the Advanced Seminar program can be sustained into the future, but the future will not come without further effort. Respondents' suggestions to improve impact and its sustainability are similar: provide refresher courses, provide follow-up training, extend the Advanced Seminar program to more participants at the governorate and local community level. Find ways to encourage more informal transmission of the knowledge, skills and attitudes from participants to colleagues and local officials. In sum, keep the momentum going.

CONCLUSIONS

This impact evaluation of the Advanced Seminar program indicates that the four modules have had a significant impact on participants.

Planning

The predominance and depth of comments on planning is consistent with the design of the program. All four modules contained planning components in order to give participants a broad perspective on physical, sector and regional planning as well as detailed knowledge of project planning. The emphasis on project planning is reflected by the relative importance attributed to project planning in the participants' commentary.

If additional funds are allocated to the LD II governorates under the "special fund" now being discussed, the participating governorates should be encouraged to evaluate the effect of the Advanced Seminar program on the resulting planning/implementation process.

Organizational Development

Participant response to the issue of organizational development is partially related to GOE organizational ecology; Local government in Egypt operates in a highly structured environment; the management style of many top executives tends to be nonparticipatory while communication between governorate departments and agencies and between the various levels of local government is often limited. The Advanced Seminar's approach was relatively unique to Egypt. It was among the first to present these organizational concepts to a wide and mixed audience of local officials of varying specialties and levels of responsibility; it was among the first to utilize participatory training techniques and to ask staff from all levels and different agencies to work together on a team basis to solve training exercises. These training experiences generated a heightened response by participants and had significant impacts on their work styles, performance and attitudes when they returned to the workplace.

The impact evaluation thus suggests a broader emphasis on organizational development techniques in future training programs for local government managers and technicians, to include problem solving, team building, and goal setting exercises.

Contracting

This evaluation, coupled with feedback received during training sessions, indicates an increased degree of confidence by local officials when dealing with the whole contracting process. Results suggest that more training on Law 9, for additional local officials, would yield substantial results if given in a participatory environment.

Follow-up Training

Chemonics staff members and Advanced Seminar program moderators and lecturers have advocated follow-up training to hone participants' skills, to train replacement and second tier personnel and to reinforce participatory management styles, teamwork and better communication at the governorate and local level. That judgement has been ratified by the survey respondents as well as by the actions of Gharbiya Governorate and Abu Homos Markaz in Beheira Governorate, which have, with limited resources, developed training courses for other local units using Advanced Seminar techniques and modified curriculum materials.

The results of the impact evaluation suggest that the five remaining governorates would benefit from receiving participatory, organizational development-type training in planning and implementation of infrastructure projects, similar to the Advanced Seminar program.

Selected Technical Courses

SCOPE AND METHODOLOGY

Using the criteria detailed in the introduction, Chemonics selected four LD II-P technical courses in four governorates selected for impact evaluation. The courses are Building (BD) Section's seminar series on site selection, site planning and building design; Potable Water (PW) Section's course on laying pipelines and installing pump sets; Environmental Engineering (EE) Section's course on design of wastewater treatment systems and Equipment (EQ) Section's technical training for operational and maintenance supervision (engineers) course.

These courses were evaluated in Menufiya, a high performance governorate located in Lower Egypt; Minya, located in Upper Egypt and considered a high performer; Sharqiya, a low performance governorate in Lower Egypt; and Gharbiya, a high performance governorate in Lower Egypt.

The evaluator interviewed 45 participants, 70 percent of those who enrolled in the courses from the four governorates. Interviews were collected at the governorate and markaz level. Five marakez were visited in Menufiya, Minya and Sharqiya, and three marakez in Gharbiya, where only the O&M supervision course was evaluated.

The interview techniques described in the introduction were followed in all cases. The evaluation was built around the three core questions presented in the introductory section of this report. All participants were asked the same questions and their comments and observations were sorted and analyzed in the context of the core questions.

DESCRIPTION AND GOALS OF THE TECHNICAL COURSES

The goals of the courses in this section of the study vary. They reflect the intentions of the Chemonics technical sections that planned, designed and delivered them. Each course was evaluated with its own statement of goals and objectives as a standard.

- **Seminar Series on Site Selection, Site Planning and Building Design (Buildings Section)**

This series of three related sessions was evaluated as a single course because of their interrelationships. BD designed this

series to give similar seminar portions to two audiences, then to bring the audiences together in a follow-up conference. Participants in the technical seminar—governorate and markaz building engineers and technicians—were given a five-day course; financial, legal and planning officials attended a separate two-day managers Seminar.

The two seminars had essentially the same objectives: to improve the site selection, site planning, and buildings design skills of participants; to increase participants' understanding of the importance of site selection, site planning, and building design; to provide a forum for exchange of ideas among participants and to improve participants' ability to produce projects (a goal for the engineering group but not for the officials group). The objectives of the follow-up conference were to resolve problems encountered when applying concepts presented in the two seminars.

The overall objective for this set of training events was to "improve participants' ability to produce quality architectural project documentation."

- **Laying Pipelines and Installing Pump Sets (Potable Water Section)**

PW objectives were that, by the end of this five-day course, the participants would be able to: remember the basics of the subject and the importance of good supervision on the quality of the construction work; understand potable water network components and the technical methods used in its construction; know and apply the instructions and procedures for installing electrical pump units as well as their operation, maintenance, and safety considerations; and know the technical conditions and specifications for mechanical and electrical components of electrically driven pumping units.

- **Design of Wastewater Treatment Systems (Environmental Engineering Section)**

The objectives of this 10-day course given by EE were to provide engineers with the knowledge and design procedures that would enable them to review design documents and reports prepared by consultants.

- **Technical Training for Operational and Maintenance Supervision Engineers (Equipment Section)**

The objectives of EQ for this five-day course were to increase participants' knowledge in managing and supervising the use of heavy equipment and to know how to manage and organize

equipment maintenance centers in order to obtain the maximum benefits from the equipment maintenance center facilities.

GENERAL FINDINGS IN TECHNICAL COURSE EVALUATION

In general, technical course participants who were interviewed for this study responded that the courses had positive and sustainable impacts on job performance, work style and attitudes in their work environment.

- QUESTION 1: What are individuals and local government institutions doing differently as a result of these technical courses?

Interviewees made a variety of comments on the ways that governorate and markaz staff are operating differently as a result of having taken the courses. Most of the comments were on improvements in technical skills specific to the course taken, but only the interviewees from the PW course failed to mention attitudinal and organizational changes. Such comments as "better role definition" and "importance of coordination" had response rates of 40 percent or better in interviews among participants in the BD, EE and EQ courses.

Interviewees from the PW and EE courses valued the exchanges of experiences among participants which the course design facilitated.

Respondents from all but the EE course were able to provide examples of specific tasks or procedures being done differently as a result of training in the courses. The examples are summarized on Table B.17 in Appendix B.

- QUESTION 2: How can the impact of the technical courses be improved? What follow-up activities should be pursued?

"Give more time to practical training and field visits" ranked highest among the improvements suggested by interviewees from all four technical courses, followed by a variety of topics they felt should be included.

The emphasis on more practical, hands-on training is perhaps predictable, given that the courses focused on technical subjects and addressed primarily technically trained audiences. It may also stem from the training techniques used in the courses. Field visits and exercises were secondary to lecturing by specialists who, while experts in their field, were not well versed in modern adult participatory training methods.

Respondents were less inclined to comment on group composition; when they did, it was usually to recommend including second tier technical personnel.

To follow up the technical training programs, participants generally recommended more and higher-level technical training for those who had already received instructions.

- QUESTION 3: How and to what extent do participants expect the impacts of the courses to be sustained?

Most interviewees felt the impacts of the technical courses were sustainable, and, except for the BD course, they did not often give conditional answers to this question. This may be because these courses focused on tangible, discrete technical skills that are easier to transfer to colleagues, and need less reinforcement, than the attitudinal and behavioral changes such as these targeted by the Advanced Seminar program.

FINDINGS

In the discussions below, comments cited by the highest percentage of interviewees are displayed in the respondent comments tables

Seminar Series on Site Selection, Site Planning and Building Design (Buildings Section)

The evaluator interviewed 25 participants of this course, 68 percent of enrollment from the governorates in the study. Tabulations of responses appear in Tables B.1 through B.4 of Appendix B.

Impacts of the Course

Of 26 comments, the seven comments listed below had response rates of greater than 20 percent of interviewees. Together with a number of other comments, they indicate a better appreciation of general site selection and planning concepts as the main impacts of the course. "The importance of coordination among all involved parties" the highest ranked, perhaps also reflects the fact that technical and managerial personnel were trained separately, then brought together for a follow-up conference.

Respondent Comments	Percent responding (N=25)
Importance of coordination among all involved parties	40%
Applying scientific rules in site planning	36%
More keen on involving project user in all the phases	32%
Site selection better understood	32%
Land borings are important	28%
Effective visual aids	20%
Building design better serves its purpose	20%

The interviewer collected six examples of improved practices resulting from this course. Two were from marakez in Minya demonstrating user involvement in the project design and planning phase; another demonstrated development of alternate sites in a third Minya markaz. Three from Zagazig Markaz in Sharqiya were examples of orienting buildings on-site, planning a site for future expansion and redesigning buildings for better utilization.

Suggested Improvements to the Course

Nearly half the respondents agreed that the course could be improved by devoting more time to practical training and field visits, and five of the comment categories recommended additional course topics, all having to do with construction.

Two comments with relatively high consensus rates implied a frustration with governorate management cultures that prevent staff members from applying the skills they have learned in the course.

How is this re suggested improvements (5%)

Respondent Comments	Percent responding (N=25)
Give more time to practical training and field visits	48%
Site selection is a luxury that is hardly available in the valley governorates	36%
Very few decision makers changed their attitudes for consulting the technicians	20%
In reality site selection and planning are imposed on the technical people	20%
Include a topic about modern construction techniques and materials	16%
Include a topic about applications in construction	12%
Include a topic about contracting for buildings	12%

Suggested Follow-Up Activities

Five of the seven comments for this question suggested further or refresher training. The recommendation to "provide a course on building maintenance" achieved the highest rate of response, at 20 percent of interviewees, and indicates an awareness of the relationship between better building design and the cost of maintenance.

Respondent Comments	Percent responding (N=25)
Provide a course on building maintenance	20%
A course in modern construction materials	12%
Provide training on modern construction equipment	12%

Sustainability of Impact

Response to this subject was mostly skewed to the affirmative. The bulk of responses indicated that, for this course, sustainability is highly dependent on participant-to-colleague transfer of the course experience. It "depends on the willingness of participants to share experience with others" summarizes the responses.

Respondent Comments	Percent responding (N=18)
Course experience has been transferred to colleagues	22%
Manuals and books are available in the work site	17%
Momentum created is sustained	17%
Depends on the willingness of participants to share experiences with others	11%
Not sustainable	11%
Participant left his location without transferring the experience	11%

Laying Water Pipelines and Installing Pump Sets (Potable Water Section)

The evaluator interviewed seven participants of this course, 58 percent of all course trainees in two evaluated governorates. A tabulation of responses appears Appendix B, Tables B.5 through B.8.

Impacts of the Course

The seven interviewees made 20 comments on the impacts of the course. The comments in the summary statement are representative: most reported improvements were to specific technical knowledge and skills needed to install and maintain water pipeline systems. One person commented that he found the exchange of experiences during the course valuable.

Respondent Comments	Percent responding (N=7)
Installing air valves to prevent network explosions	29%
Installing good quality valves in the beginning of pipelines	29%
Proper laying of pipe beds and covering layer	29%
Testing network before starting operation	29%
Keeping pipes at one level as much as possible	29%

An example of impact was provided by an interviewee from Ashmoun Markaz in Menufiya, who demonstrated how the markaz now monitored materials furnished by contractors.

Suggested Improvements to the Course

There were 11 suggestions to improve the course. The highest ranking was to include more practical work and field visits, although two respondents felt the site they had visited was "irrelevant to the course." Two interviewees suggested including lower level staff "for exchange of experience."

Respondent Comments	Percent responding (N=7)
More practical work and field visits	43%
Include more second tier people for exchange of experience	29%
Site visited in the field visit was not relevant to course	29%

Each of the remaining suggestions had one response. Three were suggestions for other course topics, three were comments on the length of the course (both that it was too long and that it was too short), three focused on pumps and gauges.

Suggested Follow-Up Activities

Only three interviewees made suggestions for follow-up activities. One recommended a refresher course, one a course on pump maintenance, and one said course participants should "remain in their positions for a fixed period of time."

Sustainability of Impact

Five interviewees had seven responses to this question. Four responses were affirmative, that changes in the workplace due to knowledge and skills gained from the course would be sustained. The three negative respondents reasoned that the the course impacts were not sustainable because participants did not stay in their job long enough to pass on what they had learned or that "people like to keep the information to themselves."

Design of Wastewater Treatment Systems (Environmental Engineering Section)

All seven participants in this course from the sample governorates were interviewed. A tabulation of their comments appears in Appendix B, Tables B.9 through B12.

Impacts of the Course

In a unanimity rare to this survey, all respondents agreed on an impact—that this course resulted in "knowing the different treatment technologies and selecting the appropriate one." This, five elaborated further, "enabled us to review the work done by consultants."

Thirteen other comments demonstrate the depth of impact of this course. A few were citations of specific technical skills, but there were also comments on changes in organizational development matters, such as coordination and supervision, and attitudinal change, such as envisioning the future and recognizing different perspectives.

Respondent Comments	Percent responding (N=7)
Knowing the different treatment technologies and selecting the appropriate one	100%
Enabled us to review work done by consultants	71%
Conducting contour studies to calculate slopes	43%
Considering many alternatives for wastewater systems	43%
Group discussions helped us recognize different perspectives	43%
Importance of coordination with other departments	43%
Better supervision of treatment plant construction	29%
Envisioning future needs	29%
Knowing the treatment stages	29%
Provided a scientific background	29%

Suggested Improvements to the Course

The phraseology varied, but all suggestions were for more practical training and field exercises to improve the course.

Respondent Comments	Percent responding (N=7)
More field visits and practical training	86%
More practical exercises	43%
Divide the course into two weeks with application time between them	43%

Suggested Follow-Up Activities

Two respondents suggested that refresher training in the future would magnify the impact of the course.

Sustainability of Impact

All responses to this question were affirmative. Interviewees stated uncategorically that impacts of the course will be sustained and cited their reasons: the course materials are kept on-site or in a library and/or they train their colleagues on the job.

Technical Training for Operational and Maintenance Supervision (Engineers) (Equipment Section)

Six participants, 75 percent of those enrolled in the course from the sample governorates were surveyed. A tabulation of their responses appears Tables B.13 through B.16 in Appendix B.

Impacts of the Course

Two-thirds of the comments had consensus rates of 50 percent or above. Interviewees cited a variety of enhancements to their supervisory skills that have improved maintenance workshop organization: better documentation and record keeping, better work organization and role definition, and better safety conditions among others.

Respondent Comments	Percent responding (N=6)
Proper receiving and reporting of defective equipment	83%
Using maintenance and repair record books	83%
Having a useful documentation system	83%
Better role definition of workshop personnel	67%
Better safety conditions	67%
Analysis of equipment operation	50%
Better calculation of maintenance and repair costs per price of equipment	50%
Better work organization	50%
More organized maintenance cycle	50%
Preparing the organizational chart of the workshop	50%

The interviewees provided four illustrations of improved practices in Gharbiya following training. The governorate has produced new forms, organization charts and directives for the O&M workshops. Kafr El-Zayat Markaz has also developed new workshop forms.

Suggested Improvements to the Course

Interviewees unanimously agreed that the course could be best improved by devoting more time to practical training and field visits.

There were several critical comments. A majority of those interviewed said that many documents presented in the course were inapplicable to local needs, and there was more than one comment that the course should be more closely targeted to local workshop supervisors.

Respondent Comments	Percent responding (N=7)
More practical training and workshop time/field visits	100%
Not all the documents presented were applicable to local needs	83%
Course should be designed specially for local units not for diverse clientele	50%

**Suggested
Follow-Up
Activities**

The responses to this question focused on the need to attract, retain and improve the skills of the technicians these participants supervise.

**Sustainability
of Impact**

Five of the six interviewees agreed that the course's impact is sustainable because "the system has already changed and it is hard to change back."

The consensus that the impact of this course is sustainable, buttressed as it is by an assertion that the system has already changed, represents one of the strongest training endorsements received during the impact evaluation study.

CONCLUSIONS

The four technical courses in this impact evaluation targeted specific skills and knowledge bases. From comments gathered in the survey of participants, it appears that EE Section's course on wastewater treatment system design and EQ Section's course for O&M supervisors have been most successful in reaching their goals. Participant comments on PW Section's course indicated gains in pipelaying knowledge and skills but less so in understanding and using the instruction provided on pump sets. While participants in BD Section's course reported increased knowledge and appreciation of site selection, site planning and building design concepts, several also pointed out the difficulty of applying what they had learned in the current management environment in their governorates.

The latter finding further reinforces findings and conclusions of the Advanced Seminar evaluation. To encourage and reinforce change in local governmental institutions, organizational development training should reach as many local officials as possible. One approach would be to develop courses for key local government decision-makers in participatory management and use of information generated by technical personnel.

Interviewees indicated that some individuals selected for training were not from related jobs or did not remain in their jobs after the training was completed. Since technical training is expensive and time consuming, the use of firm guidelines for entry to future training courses and participant retention on the job after training are important considerations.

There were many recommendations for more practical training from participants in the technical courses. This reflects the nature of the courses and may also stem from the lecture style of many of the trainers. Although they were practitioners in their fields, they tended not to be acquainted with modern adult training techniques. The Advanced Seminars sometimes suffered from the same problem when trainers relied solely on

lectures. Professionals and local government officials who are asked to be trainers would benefit by exposure to effective adult participatory training techniques before conducting training.

Many participants asked for follow-up training as well as for courses for second-tier staff. Technical training is expensive and may require the use of specialized equipment and facilities, such as those available at the NOPWASD Training Center at Damanhour, but lack of training is more expensive because it contributes to inoperative facilities and inadequate equipment maintenance. We urge the governorates to consider this.

Many interviewees cited the need for trainees to pass on their knowledge to colleagues in the workplace; such extended training can be very cost effective. Future courses should be designed with this in mind, not only by advocating participant-to-colleague transfer of knowledge and skills gained in the course, but also by discussing procedures and techniques for doing so.

APPENDICES

APPENDIX A

Respondent Comments: Survey on Advanced Seminar Impact

Table A.1

IMPACTS OF THE ADVANCED SEMINARS PROGRAM

TOPIC	COMMENTS	BENI SUEF (24 INTERVS)		BEHEIRA (20 INTERVS)		NORTH SINAÏ (23 INTERVS)		TOTAL (67 INTERVS)	
		# RESP.	%	# RESP.	%	# RESP.	%	# RESP.	%
OVERALL IMPRESSIONS	1 introduced a new scientific planning and management style	5	21	3	15	16	70	24	36
	2 application oriented training		0		0	8	35	8	12
	3 action plans helped deal with actual field problems		0		0	7	30	7	10
	4 raised performance standards of local projects		0		0	3	13	3	4
	5 helped organizing our thoughts for the whole project cycle		0	1	5	1	4	2	3
	6 quicker achievement of tasks for knowing what to do exactly	2	8		0		0	2	3
	7 added scientific dimension to our development skills		0		0	2	9	2	3
	8 established the proper style for project planning and implementation		0		0	2	9	2	3
	9 helped having shared projects		0	1	5	1	4	2	3
	10 problem solving		0	1	5		0	1	1
	11 combined practical experience and scientific approaches		0		0	1	4	1	1
	12 improved analytical skills		0	1	5		0	1	1
	13 selection of participants helped the success of the program		0		0	1	4	1	1
ORGANIZATIONAL DEVELOPMENT	14 helped coordination among different departments	14	58	11	55	17	74	42	63
	15 importance and usefulness of team work	7	29	7	35	13	57	27	40
	16 better role definition of individuals and departments	8	33	6	30	12	52	26	39
	17 exchange of experiences among governorate's different departments	4	17	1	5	6	26	11	16
	18 having top level management participants helped team work	5	21		0	6	26	11	16
	19 building common language among the different departments	7	29	2	10		0	9	13
	20 unifying concepts abt. development & project cycle planning & manage		0		0	8	35	8	12
	21 helped executive staff take planned initiatives	6	25	1	5		0	7	10
	22 utilizing the team work approach in the decision making		0		0	5	22	5	7
	23 increased cooperation among different levels		0		0	5	22	5	7
	24 more confident judgments and decisions		0	2	10	2	9	4	6
	25 training process (sm. grps. & exercises) helped us change attitudes		0	3	15		0	3	4
	26 helped coordination between merakez and governorate depts.		0		0	3	13	3	4
	27 emphasized the role of each individual in the team		0		0	2	9	2	3
	28 increased skills in cooperating with the popular councils		0		0	2	9	2	3
	29 action plans helped establish a new style of work		0	2	10		0	2	3
	30 activated GLDC & MLDCs		0	1	5		0	1	1
31 helped other depts. understand the role the Village Development Dept.		0		0	1	4	1	1	
PROJECT PLANNING	32 prioritization of projects is now more scientific	19	79	6	30	12	52	37	55
	33 pre-project situation/problem analysis	15	63	2	10	7	30	24	36

Table A.1

IMPACTS OF THE ADVANCED SEMINARS PROGRAM

TOPIC	COMMENTS	BENI SUEF (24 INTERVS)		BEHEIRA (20 INTERVS)		NORTH SINAI (23 INTERVS)		TOTAL (67 INTERVS)	
		# RESP.	%	# RESP.	%	# RESP.	%	# RESP.	%
PROJECT PLANNING	34 considering and selecting alternatives in project design	12	50	4	20	3	13	19	28
	35 relying on a data base in decision making	11	46	2	10	5	22	18	27
	36 eliminated haphazard project selection by applying scientific criteria	9	38	3	15	4	17	16	24
	37 multi-year planning	2	8	0	0	11	48	13	19
	38 starting with scientific needs assessment	9	38	3	15	1	4	13	19
	39 previously we extended pipelines without considering the source	1	4	1	5	10	43	12	18
	40 participatory planning with village chiefs and popular councils	2	8	2	10	8	35	12	18
	41 projects should address people's needs	0	0	5	25	3	13	8	12
	42 appropriate site selection for projects	0	0	7	35	0	0	7	10
	43 physical planning	4	17	2	10	0	0	6	9
	44 increased bottom-up project planning	0	0	0	0	6	26	6	9
	45 foreseeing related procedures, i.e., maintenance and labor	0	0	0	0	3	13	3	4
	46 mobilizing human resources to conduct a project	0	0	2	10	0	0	2	3
	47 rationalized resources utilization	0	0	2	10	0	0	2	3
48 translating problems into needs to be addressed	1	4	0	0	0	0	1	1	
49 considering the possible social effects of a project	1	4	0	0	0	0	1	1	
PROJECT PLANNING AND APPRAISAL	50 scientific approach in planning	11	46	1	5	0	0	12	18
	51 considering both positive and negative results of projects	2	8	4	20	0	0	6	9
	52 having an integrated look at development projects	0	0	4	20	2	9	6	9
	53 helped to reduce personal influence on project selection	0	0	3	15	1	4	4	6
	54 considering the long range costs; e.g. maintenance	3	13	0	0	0	0	3	4
	55 better dealing with popular councils based on concrete data	1	4	2	10	0	0	3	4
	56 indiv's and depts. understand development concepts and attitudes better	0	0	2	10	0	0	2	3
	57 considering the time value	0	0	1	5	0	0	1	1
SECTORAL PLANNING	58 sectoral planning is now better understood and applied	6	25	3	15	12	52	21	31
	59 strategic sectoral planning	0	0	0	0	1	4	1	1
	60 distribution of funds by sector plans gives more comprehensive look	0	0	0	0	1	4	1	1
STRATEGIC PLANNING	61 strategic planning	1	4	1	5	7	30	9	13
	62 flexibility in achieving the objectives	4	17	2	10	0	0	6	9
	63 long term planning	0	0	3	15	1	4	4	6
	64 having a long range vision	1	4	0	0	2	9	3	4
FEASIBILITY STUDIES	65 scientific feasibility studies	1	4	2	10	2	9	5	7
	66 cost estimates and financial analysis	1	4	2	10	0	0	3	4

Table A.1

IMPACTS OF THE ADVANCED SEMINARS PROGRAM

TOPIC	COMMENTS	BENI SU'EF (24 INTERVS)		BEHEIRA (20 INTERVS)		NORTH SINAI (23 INTERVS)		TOTAL (67 INTERVS)	
		# RESP.	%	# RESP.	%	# RESP.	%	# RESP.	%
FEASIBILITY STUDIES	67 considering the number of beneficiaries of a project		0		0	3	13	3	4
	68 raising technical awareness of lay people	2	8	1	5		0	3	4
	69 technical feasibility studies		0	1	5		0	1	1
	70 combining technical and financial feasibility studies		0		0	1	4	1	1
	71 it has an impact on commercial/productive projects	1	4		0		0	1	1
	72 feasibility studies for services projects		0	1	5		0	1	1
	73 considering cost per person in selecting alternatives	1	4		0		0	1	1
	74 setting the current value of a project	1	4		0		0	1	1
CONTRACTING	75 better understanding and application of Law # 9	4	17	8	40	13	57	25	37
	76 better contracting practices	12	50	8	40	3	13	23	34
	77 bidding documents are done better to guarantee good implementation		0		0	4	17	4	6
	78 better balance between technical and financial aspects in bid selection		0		0	2	9	2	3
	79 provided useful skills and attitudes for dealing with contractors		0		0	2	9	2	3
	80 better role definition in committees for selecting bids		0		0	1	4	1	1
PROJECT M&E	81 project field monitoring & evaluation	1	0	6	30		0	7	10
	82 systematic project M&E		0		0	6	26	6	9
	83 emphasized the role of management in project M&E		0		0	1	4	1	1
	84 provided new useful skills in project M&E		0		0	1	4	1	1
PROJECT IMPLEMENTATION	85 time scheduling	5	21	7	35	4	17	16	24
	86 relation between time schedule and cash flow	4	17	6	30	2	9	12	18
	87 setting scientific criteria for project cycle	3	13	1	5		0	4	6
	88 better project implementation		0	4	20		0	4	6
	89 increasing flexibility in project management		0		0	2	9	2	3
	90 maintenance management		0	2	10		0	2	3
	91 supervision is now done better		0		0	1	4	1	1
	92 importance of documentation	1	4		0		0	1	1
	93 better O&M management		0		0	1	4	1	1
	FINANCIAL MANAGEMENT	94 cash management		0	2	10	7	30	9
95 utilizing surpluses for other projects			0	1	5		0	1	1
96 cost accounting is now scientifically done			0		0	1	4	1	1
TOTAL:		210		162		281		653	

Table A. 2

SUGGESTED IMPROVEMENTS TO THE ADVANCED SEMINARS PROGRAM

TOPIC	COMMENTS	BENI SUEF (24 INTERVS)		BEHEIRA (20 INTERVS)		NORTH SINAI (23 INTERVS)		TOTAL (67 INTERVS)	
		# RESP.	%	# RESP.	%	# RESP.	%	# RESP.	%
GROUP COMPOSITION	1 include all village chiefs	10	42	8	40	3	13	21	31
	2 include representatives of popular councils	1	4	1	5	2	9	4	6
	3 include the second row, e.g., village secretaries	1	4	2	10	1	4	4	6
	4 include representatives from Tanzeem-Wa-klara		0	0	0	3	13	3	4
	5 include public and administrative prosecution officers in M4		0	0	0	3	13	3	4
	6 include marakez financial auditors	1	4	2	10		0	3	4
	7 include representatives from budget dept.		0		0	3	13	3	4
	8 include village financial officers in M4		0		0	2	9	2	3
	9 include physical planning officers		0		0	2	9	2	3
	10 marakez contracting depts. be represented in the course	1	4		0	1	4	2	3
	11 include marakez maintenance officers in the 4 modules		0	1	5		0	1	1
	12 include planning officers in the 4 modules		0	1	5		0	1	1
	13 marakez building engineers should attend module 4	1	4		0		0	1	1
	14 include housing roads personnel		0		0	1	4	1	1
	15 participants should have been kept for all modules		0	1	5		0	1	1
MORE TIME FOR	16 contracting needs more time		0	3	15	10	43	13	19
	17 physical planning needs more time		0	2	10	4	17	6	9
	18 need additional module for O&M		0		0	5	22	5	7
	19 give more time for feasibility studies	1	4		0	4	17	5	7
	20 give more time for contracting and Law # 9	3	13		0	2	9	5	7
	21 O&M planning and management need more elaboration		0		0	3	13	3	4
	22 give more time to wastewater topics	1	4	2	10		0	3	4
	23 cash management should be given more time		0		0	2	9	2	3
	24 give more time for financial analysis		0		0	2	9	2	3
	25 general planning needs more time		0		0	1	4	1	1
	26 give more time and content to monitoring	1	4		0		0	1	1
	27 give more time for project O&M		0		0	1	4	1	1
	28 give more time for project M&E		0		0	1	4	1	1
	29 project implementation supervision needs more time		0		0	1	4	1	1

Table A.2

SUGGESTED IMPROVEMENTS TO THE ADVANCED SEMINARS PROGRAM

TOPIC	COMMENTS	BENI SU'EF (24 INTERVS)		BEHEIRA (20 INTERVS)		NORTH SINAI (23 INTERVS)		TOTAL (67 INTERVS)	
		# RESP.	%	# RESP.	%	# RESP.	%	# RESP.	%
COURSE PLANNING	30 should have been held before or in the beginning of LD II	5	21	2	10	4	17	11	16
	31 no thorough training needs assessment was done before the course	3	13		0		0	3	4
COURSE DESIGN	32 reduce the theoretical part and increase the practical one	6	25	1	5	2	9	9	13
	33 include field visits to real projects	1	4	1	5	5	22	7	10
	34 too much content for the given time	1	4	1	5		0	2	3
	35 evaluation groups were boring		0		0	1	4	1	1
	36 financial auditor should have been invited as a trainer		0	1	5		0	1	1
	37 reduce the technical topics and provide more for the management issues	1	4		0		0	1	1
	38 cash management & project M&E should have been handled together		0		0	1	4	1	1
	39 M&E was insufficient in content		0		0	1	4	1	1
	40 marakez chiefs should have been considered resource persons		0		0	1	4	1	1
	41 examples not pertinent to desert governorates		0		0	1	4	1	1
	COURSE CONTENT	42 behavioral management was not useful		0		0	2	9	2
43 tendering process in contracting needs more elaboration			0		0	2	9	2	3
44 technical feasibility studies for WW could be dropped (for NSI only)			0		0	1	4	1	1
45 too complicated calculations in M3			0		0	1	4	1	1
46 cash flow was too complicated for most participants		1	4		0		0	1	1
47 rate of return on investment in M3 was overdone			0		0	1	4	1	1
48 too much content in the MIS topics		1	4		0		0	1	1
APPLICATION	49 financial analysis cannot be applied as presented in the course		0		0	2	9	2	3
	50 fear of funding for multi-year plans being inconsistent	1	4		0		0	1	1
NEW TOPIC	51 new topic about operation skills in post establishment phase		0		0	2	9	2	3
	52 problem-solving techniques should be added		0		0	1	4	1	1
	53 emphasize environment protection issues	1	4		0		0	1	1
TRAINING SITE	54 hold Adv. Sem. outside the governorate for training dedication	3	13		0		0	3	4
TOTAL		45		29		85		159	

Table A.3

SUGGESTED FOLLOW-UP ACTIVITIES TO THE ADVANCED SEMINARS PROGRAM

TOPIC	COMMENTS	BENI SUEF (24 INTERVS)		BEHEIRA (20 INTERVS)		NORTH SINAI (23 INTERVS)		TOTAL (67 INTERVS)	
		# RESP.	%	# RESP.	%	# RESP.	%	# RESP.	%
TRAINING FOR PARTICIPANTS	1 periodic refresher courses to correct applications	5	21	9	45	2	9	16	24
	2 organize specialized courses for each specialization	1	4	2	10	2	9	5	7
	3 hold another course to evaluate the applications	0	0	3	15	0	0	3	4
	4 hold a fifth module for O&M		0	1	5	2	9	3	4
	5 organize exchange of experiences meeting between groups A & B		0	2	10		0	2	3
	6 periodic refresher courses on management topics for top level managers	2	8		0		0	2	3
	7 organize a follow-up course for contracting		0	1	5		0	1	1
TRAINING FOR OTHERS	8 organize exchange of experience courses within the governorate		0		0	7	30	7	10
	9 organize a similar program for the Popular Councils	3	13		0	1	4	4	6
	10 organize simplified Advance Seminar for local units	4	17		0		0	4	6
ORGANIZATIONAL ACTIONS	11 government training should follow the example of the Adv. Sem.		0		0	2	9	2	3
	12 keep the participants in their positions for few years	2	8		0		0	2	3
	13 governorate should direct deots and marakez to apply Adv. Sem. ideas	1	4	1	5		0	2	3
	14 should work to reduce the central influence over the local units	1	4		0		0	1	1
TOTAL		19		19		16		54	

Table A. 4

SUSTAINABILITY OF IMPACTS OF THE ADVANCED SEMINARS PROGRAM

TOPIC	COMMENTS	BENI SUEF (24 INTERVS)		BEHEIRA (20 INTERVS)		NORTH SINAI (23 INTERVS)		TOTAL (67 INTERVS)	
		# RESP.	%	# RESP.	%	# RESP.	%	# RESP.	%
YES	1 we have transferred the Adv. Sem. experience to others to ensure sustainability	4	17	5	25	1	4	10	15
	2 we made the Advanced Seminars books available in the site library	3	13	1	5		0	4	6
	3 a new system has already been established in the work site	2	8	2	10		0	4	6
	4 it certainly will have a long term impact	2	8		0		0	2	3
	5 second tier will continue using the Adv. Sem. approaches		0	1	5		0	1	1
	6 Adv. Sem. introduced a management style, but not an emotional push	1	4		0		0	1	1
	7 state's new policy is to support performance, which will help sustainability	1	4		0		0	1	1
CONDITIONAL	8 if refresher courses are organized to keep the momentum	3	13		0	12	52	15	22
	9 if we organize visits to projects that use the Adv. Sem. approach		0		0	11	48	11	16
	10 if participants transfer the Adv. Sem. experience to others	3	13	6	30		0	9	13
	11 if we train the second tier	5	21		0	3	13	8	12
	12 if follow-up training is provided		0	8	40		0	8	12
	13 if participants keep referring to the Advanced Seminars materials		0		0	3	13	3	4
	14 it depends on succeeding managers		0	3	15		0	3	4
	15 if we establish a system for the second tier to follow	3	13		0		0	3	4
	16 if participants hold on to their positions for enough time	2	8		0		0	2	3
	17 if participants are keen on applying the Advanced Seminars		0		0	2	9	2	3
	18 if we keep meeting with the Popular Councils		0		0	2	9	2	3
	19 if we have local trainers to conduct similar training	1	4		0		0	1	1
	20 if further training is provided to the leaders	1	4		0		0	1	1
	21 it depends on the competence of the manager	1	4		0		0	1	1
	22 if Village Development Department is turned into a directorate	1	4		0		0	1	1
	23 it depends on the manager's willingness to transfer experience		0	1	5		0	1	1
	24 if popular councils receive similar training		0		0	1	4	1	1
	25 if the leader acts also as a trainer to his subordinates	1	4		0		0	1	1
	PARTIAL	26 a complete change in performance is unexpected	1	4		0		0	1
27 impact is on individuals only			0	1	5		0	1	1

Table A. 4:

SUSTAINABILITY OF IMPACTS OF THE ADVANCED SEMINARS PROGRAM

TOPIC	COMMENTS	BENI SUEF (24 INTERVS)		BEHEIRA (20 INTERVS)		NORTH SINAI (23 INTERVS)		TOTAL (67 INTERVS)	
		# RESP.	%	# RESP.	%	# RESP.	%	# RESP.	%
NONE	28 no real change has happened to our management system		0		0	2	9	2	3
	29 I keep the Advanced Seminars manuals at home	1	4		0		0	1	1
	30 in 5-year time we would not find the impact	1	4		0		0	1	1
CANNOT TELL	31 It is too early to judge this point now	1	4		0		0	1	1
TOTAL		38		28		37		103	

APPENDIX B

Respondent Comments: Survey on Technical Course Impact

SEMINAR SERIES ON SITE SELECTION, SITE PLANNING AND BUILDING DESIGN
TABLE B.1 IMPACTS OF THE COURSE

COMMENTS		(25 INTERVS)	
		# RESP.	%
1	importance of coordination among all involved parties	10	40%
2	applying scientific rules in site planning	9	36%
3	more keen on involving the project user in all phases	8	32%
4	understanding site selection better	8	32%
5	land borings are important	7	28%
6	effective visual aids	5	20%
7	building design to serve its purpose	5	20%
8	using the model tenders and contracts provided in the course	4	16%
9	emphasized referring to the technical people in the decision making	3	12%
10	planning for everything before starting saves a lot of troubles	3	12%
11	field work was very useful in the course	3	12%
12	the course reorganized our thoughts	3	12%
13	importance of coping with the environment	3	12%
14	enabled us to confidently reject projects if technically unacceptable	2	8%
15	added some technical considerations such as building orientation	2	8%
16	considering the possibility of using some building areas for more than one activity	2	8%
17	having a long range vision	2	8%
18	better contracting for building construction	1	4%
19	emphasized the importance of quality work	1	4%
20	maintenance plan for the building	1	4%
21	importance of paying field visits to the site	1	4%
22	emphasized the importance of team work	1	4%
23	introduced a scientific way of site selection and planning	1	4%
24	considering expansion in the future	1	4%
25	importance of good finishing	1	4%
26	importance of locating the site on a map	1	4%
TOTAL		88	

SEMINAR SERIES ON SITE SELECTION, SITE PLANNING AND BUILDING DESIGN
TABLE B . 2 SUGGESTED IMPROVEMENTS TO THE COURSE

COMMENTS		(25 INTERVS)	
		# RESP.	%
1	give more time to practical training and field visits	12	48%
2	site selection is a luxury that is hardly available in the valley governorates	9	36%
3	very few decision makers changed their attitudes for consulting the technicians	5	20%
4	in reality site selection and planning are imposed on the technical people	5	20%
5	include a topic about modern construction techniques and materials	4	16%
6	include a topic about computer applications in construction	3	12%
7	include a topic about contracting for buildings	3	12%
8	include a session about prefabricated construction	2	8%
9	include decision-makers together with technical people in one course	2	8%
10	a theoretical course	1	4%
11	confine the course to top-level managers	1	4%
12	decision-makers course should be for a week	1	4%
13	do not combine supervisors and subordinates in one course	1	4%
14	give more technical input to the decision makers course	1	4%
15	give more time to designing the open spaces of the site	1	4%
16	hold the course in the governorates worksites	1	4%
17	in reality coordination among departments does not happen	1	4%
18	include a topic on construction management	1	4%
19	select those whose work is directly related to the course	1	4%
20	should collect a symbolic course fee to guarantee commitment	1	4%
21	time of course was too short	1	4%
TOTAL		57	

SEMINAR SERIES ON SITE SELECTION, SITE PLANNING AND BUILDING DESIGN
TABLE B.3 SUGGESTED FOLLOW-UP ACTIVITIES

COMMENTS		(25 INTERVS)	
		# RESP.	%
1	provide a course on building maintenance	5	20%
2	a course in modern construction materials	3	12%
3	provide training on modern construction equipment	3	12%
4	organize refresher courses for participants	2	8%
5	organize course for the second tier	2	8%
6	invite the same participants in case of future training	1	4%
7	keep the participants in their position for a fixed period of time	1	4%
TOTAL		17	

TABLE B.4 SUSTAINABILITY OF COURSE IMPACTS

COMMENTS		(18 INTERVS)	
		# RESP.	%
1	course experience has been transferred to colleagues	4	22%
2	manuals and books are available in the worksite	3	17%
3	momentum created is sustained	3	17%
4	depends on the willingness of participant to share experiences with others	2	11%
5	not sustainable	2	11%
6	participant left his location without transferring the experience	2	11%
7	if I go away, no one will continue	1	6%
8	if everyone is willing to change, which is not true	1	6%
9	if participants are kept in their positions for enough time	1	6%
10	manuals are not available at the worksite	1	6%
11	need issue directive systems	1	6%
12	need refresher courses to support sustainability	1	6%
13	need to train the second tier	1	6%
14	reporter met colleagues and found them aware of the course	1	6%
TOTAL		24	

* this issue was not discussed with the Menuliyá participants

LAYING PIPELINES AND INSTALLING PUMP SETS
 TABLE B . 5 IMPACTS OF THE COURSE

COMMENTS		(7 INTERVS)	
		# RESP.	%
1	installing air valves to prevent network explosions	2	29%
2	installing good quality valves in the beginning of pipelines	2	29%
3	proper laying of pipe beds and covering layer	2	29%
4	testing network before starting the operation	2	29%
5	keeping pipes at one level as much as possible	2	29%
6	exchange of experiences among participants	1	14%
7	water towers are important to support water pressure	1	14%
8	the shorter the line the better for the network	1	14%
9	pipelaying supervision	1	14%
10	using the model tenders and contracts provided in the course	1	14%
11	installing pipelines in cities	1	14%
12	calculating water pressure in the network	1	14%
13	building valve chambers properly as needed	1	14%
14	utilizing PVS pipes	1	14%
15	refreshed our knowledge about water pipe networks	1	14%
16	building thrust blocks by the bending joints	1	14%
17	installing inspection holes	1	14%
18	scientific approach in pipelaying	1	14%
19	O&M of water networks and stations	1	14%
20	regular purification of artesian wells	1	14%
TOTAL		25	

LAYING PIPELINES AND INSTALLING PUMP SETS

TABLE B . 6 SUGGESTED IMPROVEMENTS OF THE COURSE

COMMENTS		(7 INTERVS)	
		# RESP.	%
1	more practical work and field visits	3	43%
2	include more second tier people for exchange of experience	2	29%
3	site visited in the field visit was not relevant to course	2	29%
4	give a whole week for pipelaying	1	14%
5	horizontal pumps are not used in our sites	1	14%
6	include a topic on conducting borings for wells deeper than 65 m.	1	14%
7	include a topic on gauge maintenance	1	14%
8	include training on other types of pumps	1	14%
9	network maintenance topic did not add new information	1	14%
10	too long time given to course	1	14%
11	too short time for the course	1	14%
TOTAL		15	

TABLE B . 7 SUGGESTED FOLLOW-UP ACTIVITIES

COMMENTS		(7 INTERVS)	
		# RESP.	%
1	keep the participants in their position for a fixed period of time	1	14%
2	organize refresher courses for participants	1	14%
3	organize a course on pump maintenance	1	14%
TOTAL		3	

TABLE B . 8 SUSTAINABILITY OF COURSE IMPACTS

COMMENTS		(5 INTERVS)	
		# RESP.	%
1	manuals are kept at the worksite	3	60%
2	momentum created is sustainable	1	20%
3	need to keep participants in their positions for a fixed time	1	20%
4	participant left without transferring the experience	1	20%
5	people like to keep information for themselves	1	20%
6	participant's position was not related to the course	1	20%
TOTAL		8	

* this issue was not discussed with the Merufiya participants

DESIGN OF WASTEWATER TREATMENT SYSTEMS
TABLE B . 9 IMPACTS OF THE COURSE

COMMENTS		(7 INTERVS)	
		# RESP.	%
1	knowing the different treatment technologies & selecting the appropriate one	7	100%
2	enabled us to review work done by consultants	5	71%
3	conducting contour studies to calculate slopes	3	43%
4	considering many alternatives for wastewater systems	3	43%
5	group discussions helped us recognize different perspectives	3	43%
6	importance of coordination with other departments	3	43%
7	better supervision of treatment plant construction	2	29%
8	envisioning future needs	2	29%
9	knowing the treatment stages	2	29%
10	provided a scientific background	2	29%
11	considering the appropriate proportions of concrete for WW networks	1	14%
12	designing gravity lines and the pump stations	1	14%
13	feasibility studies of treatment plants	1	14%
14	improving the manholes	1	14%
15	knowing about mechanical treatment	1	14%
TOTAL		37	

TABLE B . 10 SUGGESTED IMPROVEMENTS TO THE COURSE

COMMENTS		(7 INTERVS)	
		# RESP.	%
1	more field visits and practical training	6	86%
2	divide the course into 4 weeks with application time between them	3	43%
3	more practical exercises	3	43%
4	provide a list of related publications to participants	1	14%
TOTAL		13	

TABLE B . 11 SUGGESTED FOLLOW-UP ACTIVITIES

COMMENTS		(7 INTERVS)	
		# RESP.	%
1	organize refresher courses for participants	2	29%
TOTAL		2	

TABLE B . 12 SUSTAINABILITY OF COURSE IMPACTS

COMMENTS		(7 INTERVS)	
		# RESP.	%
1	reporter checked that colleagues are aware of the course contents	3	43%
2	we keep course materials in the worksite	2	29%
3	we conduct on the job training with our colleagues	1	14%
4	momentum created is sustainable	1	14%
5	we have a library of all course materials	1	14%
TOTAL		8	

TECHNICAL TRAINING OPERATIONAL AND MAINTENANCE SUPERVISION
TABLE B. 13 IMPACTS OF THE COURSE

COMMENTS		(6 INTERVS)	
		# RESP.	%
1	proper receiving and reporting of defective equipment	5	83%
2	using maintenance and repair record books	5	83%
3	having a useful documentation system	5	83%
4	better role definition of workshop personnel	4	67%
5	better safety condions	4	67%
6	analysis of equipment operation	3	50%
7	better calculation of maintenance and repair works per equipment	3	50%
8	better work organization	3	50%
9	more organized maintenance cycle	3	50%
10	preparing the organizational chart of the workshop	3	50%
11	better anticipation of resources required for O&M plan	2	33%
12	Using a procurement book	2	33%
13	awareness of safety measures	1	17%
14	expecting breakdowns	1	17%
15	labor needs assessment	1	17%
TOTAL		45	

TABLE B. 14 SUGGESTED IMPROVEMENTS TO THE COURSE

COMMENTS		(6 INTERVS)	
		# RESP.	%
1	more practical training and workshop time/field visits	6	100%
2	not all the documents presented were applicable to local needs	5	83%
3	course should be designed especially for local units not for diverse clientele	3	50%
4	better lodging facilities	2	33%
5	practically speaking, manpower planning is much simpler than was presented	1	17%
6	should only include workshop supervisors	1	17%
7	theoretical training	1	17%
8	time of course was too short	1	17%
TOTAL		20	

TABLE B. 15 SUGGESTED FOLLOW-UP ACTIVITIES

COMMENTS		(6 INTERVS)	
		# RESP.	%
1	need new system to attract skilled labor	2	33%
2	increase resources allocated to O&M	1	17%
3	organize a workshop on workshop construction	1	17%
4	organize training for technicians	1	17%
TOTAL		5	

TABLE B. 16 SUSTAINABILITY OF COURSE IMPACTS

COMMENTS		(6 INTERVS)	
		# RESP.	%
1	system has already changed and it is hard to change it back	5	83%
2	need to organize training for technicians also	1	17%
3	we extended on-the-job training to our colleagues	1	17%
4	partial sustainability	1	17%
TOTAL		8	

TABLE A.5 EXAMPLE OF ACTIVITIES BEING DONE DIFFERENTLY AS A RESULT OF THE ADVANCED SEMINARS PROGRAM

TOPIC	ACTIVITY	GOVNT.	MARKAZ
ORGANIZATIONAL DEVELOPMENT	1 coordination among departments	Beheira	Kafr El Dawar
	2 role definition	Beheira	Kafr El Dawar
	3 coordination among departments	Beni Suef	Beni Suef
	4 coordination among departments	Beni Suef	Naser
PLANNING	5 prioritization	Beheira	Kafr El Dawar
	6 strategic planning	Beni Suef	Beni Suef
	7 relying on data base for good planning	Beni Suef	Beni Suef
	8 problem / situation analysis	Beni Suef	Beni Suef
	9 scientific project planning	Beni Suef	Beni Suef
	10 strategic planning	Beni Suef	Beni Suef
	11 relying on data for decision making	Beni Suef	Beni Suef
	12 sector planning	Beni Suef	
	13 problem description	Beni Suef	
	SECTOR PLANNING	14 transportation sector 5-year plan: 3rd five year plan	North Sinaï
15 potable water 5-year sector plan: 3rd five-year plan		North Sinaï	
FEASIBILITY STUDIES	16 conducting land tests before announcing tenders	Beheira	Damanahour
	17 financial analysis: cost per person	Beni Suef	Beni Suef
	18 considering and selecting alternatives	Beni Suef	Beni Suef
PROJECT IMPLEMENTATION	19 time schedule	Beni Suef	Kafr El Dawar
	20 flexibility in project implementation	Beni Suef	Somosta
	21 time schedule	Beni Suef	Somosta
	22 time schedule	Beni Suef	Ahmasia
PROJECT M&E	23 project monitoring forms as presented in the Advanced Seminars	North Sinaï	Nikhel
CONTRACTING	24 tender of the all the markaz annual operations	Beheira	Damanahour
	25 practices of dealing with bidders	Beheira	Damanahour
	26 conducting land tests before announcing tenders	Beheira	Edko
	27 terms of reference as indicated in the Advanced Seminars	Beheira	Kafr El Dawar
	28 formulating contracts as indicated in the Advanced Seminars	Beni Suef	Somosta
	29 tender prepared as indicated in the Advanced Seminars	North Sinaï	Nikhel
	FOLLOW-UP	30 mini Advanced Seminars done by participants to the local units	Beheira
31 gov. trig. committee wants to follow Advanced Seminars example in all future training		North Sinaï	
32 gov. trig. committee organizes extending adapted Advanced Seminars for local units		North Sinaï	

**EXAMPLES OF ACTIVITIES BEING DONE DIFFERENTLY
AS A RESULT OF TECHNICAL TRAINING**

TABLE B.17

Course/ Governorate	Markaz	Activity
<i>Site Selection</i>		
Minya	Samalout	Project users involved in design phase
Minya	Malawi	Alternate sites developed
Minya	Deir Mowas	Project used involved in site planning
Sharqiya	Zagazig	Building reoriented on site
Sharqiya	Zagazig	Site planned for future expansion
Sharqiya	Zagazig	Building redesigned for better utilization
<i>Laying Pipes</i>		
Menufiya	Ashmoun	Materials provided by contractor
<i>O&M</i>		
<i>Supervision</i>		
Gharbiya	Kafr El Zayat	New forms for workshop implemented
Gharbiya	Governorate	New forms for workshop implemented
Gharbiya	Governorate	Organization charts for workshop developed
Gharbiya	Governorate	Directives for workshops developed