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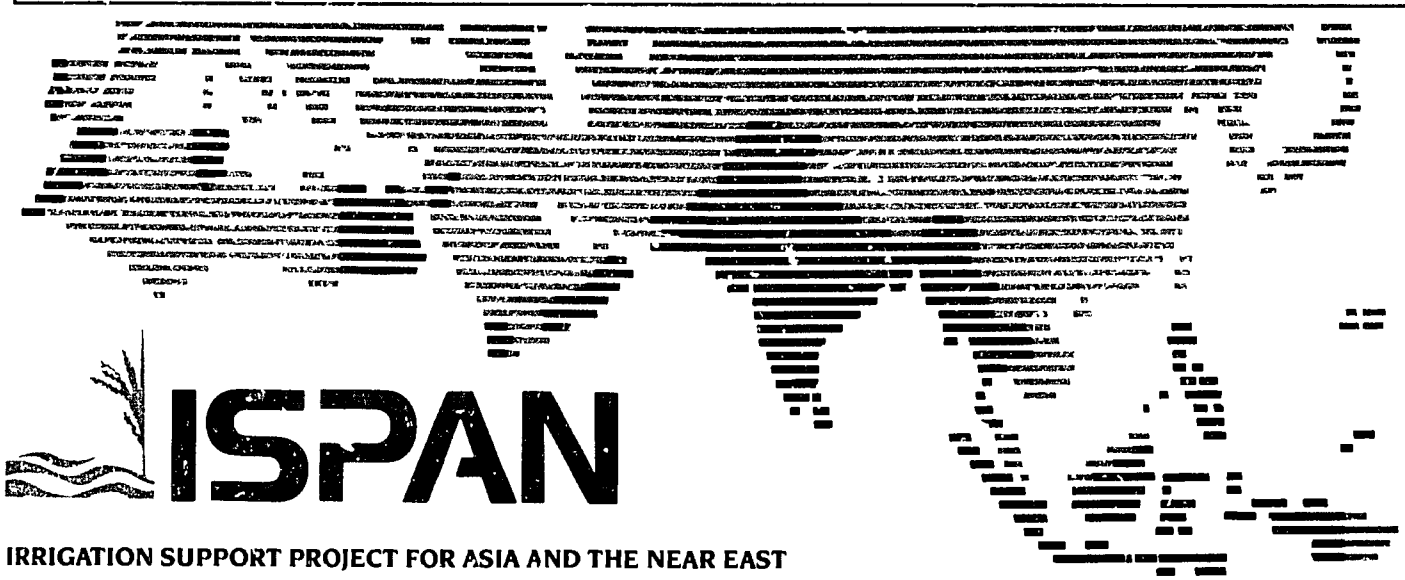
PROJECT PLANNING AND IMPLEMENTATION WORKSHOP IRRIGATION IMPROVEMENT PROJECT OF THE IRRIGATION MANAGEMENT SYSTEMS PROJECT

Alexandria, Egypt

November 11-14, 1990

ISPAN Report No. 37



ISPAN

IRRIGATION SUPPORT PROJECT FOR ASIA AND THE NEAR EAST

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Cornell University
Development Alternatives, Inc.
Harza Engineering Company
International Science and Technology Institute, Inc.
Training Resources Group
The University of Arizona

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Alexandria, Egypt
November 11-14, 1990

Prepared for the USAID Mission to Egypt,
Office of Irrigation and Land Development
under ISPAN Activity No. 714D

by
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and
Kathy Alison

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CONTENTS

APPENDIX

ACRONYMS

feddan	Unit of area equivalent to 1.038 acres
GOE	Government of Egypt
IAS	Irrigation Advisory Service
IIP	Irrigation Improvement Project
ILD	Office of Irrigation and Land Development (USAID)
IMS	Irrigation Management System Project
ISPAN	Irrigation Support Project for Asia and the Near East
LBII	Louis Berger International, Inc.
MKE	Morrison-Knudsen Engineers, Inc.
NITI	National Irrigation Training Institute
O&M	Operations and maintenance
PDP	Professsional Development Project
PIL	Project Implementation Letter
PWWR	Ministry of Public Works and Water Resources
RIIP	Regional Irrigation Improvement Project
TA	Technical Assistance
TDY	Temporary Duty Assignment
USAID	U.S. Agency for International Development
WUA	Water User Association
WRC	Water Research Center

EXECUTIVE SUMMARY

The Irrigation Improvement Project (IIP) is one of ten components of the Irrigation Management Systems (IMS) Project within Egypt's Ministry of Public Works and Water Resources (PWWR). A project start-up workshop for IIP was conducted in March 1989 by Kathy Alison, Irrigation Support Project for Asia and the Near East (ISPAN) Human Resource Development Program Manager and Dee Hahn-Rollins, management consultant with Training Resources Group.

The objectives of the IIP component are to strengthen PWWR's institutional capacity; to develop a "rational" interdisciplinary approach for planning, designing and implementing the renovation of specific commands; to develop an Irrigation Advisory Service; to organize Water User Associations (WUAs) in all IIP areas; and to establish policies and procedures for recovering an appropriate portion of operation and maintenance (O&M) costs and 100% of the costs of mesqua and on-farm improvements.

In September 1990, an interim evaluation was conducted by ISPAN, which cited the following problems in implementation:

> "With the exception of the Irrigation Advisory Service (IAS), IIP is not making acceptable progress. The project has suffered from serious delays, changes in funding levels, and unrealistic implementation planning."
>
> "Issues related to feasibility studies have brought the project to a virtual halt. Difficulties and misunderstandings exist on all sides."
>
> "The cost-recovery issue remains unresolved."
>
> "Technical assistance (TA) management has been notably unsuccessful in working with Egyptian counterparts to produce an integrated, productive project team."

Following study and some remedial actions based on the evaluation findings, IIP requested ISPAN to design and conduct a four-day workshop in Alexandria, Egypt, during November 1990, for key project staff. The consultant-facilitators who conducted the original workshop performed similar functions a second time.

The workshop was designed to provide an opportunity for key IIP staff to meet and resolve problems which have adversely affected progress in this component. Four staff groups were involved:

- PWWR/IIP headquarters staff—senior and first undersecretaries for the Ministry

- IIP directorate staff—general directors for the six project areas

- Morrison-Knudsen Engineers, Inc. (MKE)/Louis Berger International, Inc. (LBII) contract team—field engineers, social scientists and economists

- United States Agency for International Development (USAID)—Associate Mission Director for Irrigation and Land Development (ILD), ILD Office Director, IIP Project Officer and project officers who work on other components of the IMS Project.

The objectives of the workshop were to:

- Review project objectives and operating procedures with the national staff, key directorate staff, MKE staff, and USAID staff to assure that all parties have a common understanding;

- Develop strategies for improved management of the project in response to recommendations from the IMS interim evaluation;

- Review planning issues that have been identified and agree on procedures to be used for additional studies; and

- Discuss and clarify issues regarding cost-recovery and decide on the next steps for development of a cost-recovery mechanism as defined in the Grant Agreement.

Fifty-three representatives from the PWWR, TA team (MKE/LBII), and USAID/Cairo participated in the workshop, which was held in Alexandria, Egypt, November 11-14, 1990.

Prior to the workshop, the facilitators conducted interviews with 26 individuals who were to be participants in the workshop. In addition, the consultant-facilitators visited a unit command site in Minya and held informal conversations with farmers and staff within that directorate.

Three major constraints to effective and timely project implementation were identified in the interviews:

- Lack of agreement between the PWWR and USAID/Cairo regarding the development of a rational, interdisciplinary approach to feasibility studies in the planning process;

- The need for a training plan to increase the capability and capacity of IIP engineers to perform new technical tasks called for in the project; and

- The need for improved of management policies and procedures, practices, communication, teamwork and funding dispersal.

This workshop occurred at an important juncture in the life of the project and provided an excellent opportunity to

- Clearly identify the major conflicts between the PWWR and USAID concerning the priorities of the IIP;

- Strengthen team cooperation and communication among IIP staff, TA personnel, and USAID officers after a very divisive and unproductive period;

- Gain a better understanding of the history, goals, and difficulties in implementing the IIP, especially for new key players (i.e., general directors, PWWR policy makers, team leader, and TA consultants);

- Educate and involve participants in thinking strategically about long-range concerns such as the institutionalization of IAS/WUAs and developing policy initiatives for a cost-recovery program; and

- Use a participatory approach to analyze and recommend solutions to reduce the constraints on implementation.

Fifty specific agreements and recommendations relating to the three major constraints to effective project implementation identified in the interviews were reached during the workshop. (See Chapter 3 for a full statement of these specific recommendations and agreements.)

Following a panel presentation by representatives of the IAS and WUAs, recommendations were presented by the panel members for discussion and decision. Participants in the workshop agreed to the following:

- To establish a new IAS sector under the Irrigation Department;

- To work toward legalization of WUAs;

- That there is no need for a high-level workshop on IAS at this time;

- That a committee would meet to develop a proposal to hold an international conference on cost/benefits of water user associations on large public gravity irrigation systems.

The discussion of the overview of the work plan and the planning schedule for FY 90-91 reflected differences between the PWWR and USAID over which objectives have priority for the IIP, especially in the current work plan and schedule. A meeting of the IIP Steering Committee was scheduled during the week of November 18 to discuss these differences and attempt to reach a compromise. The agenda would include an initial discussion on the possible extension of the MKE contract.

Following the official closure of the workshop, a session was held for 15 participants involved in developing policy for a cost-recovery program for the IMS Project. A panel presented a conceptual analysis of cost-recovery and a possible theoretical rationale that could be used to establish policy guidelines for sharing irrigation costs. It was agreed that by February 1991, PWWR would develop a cost-recovery strategy. When an acceptable strategy is approved, within six months the IIP and MKE will develop a program of cost-recovery at the mesqua level to include: a) repayment policy, b) procedures for collection, and c) draft legislation for implementation.

Before the close of the workshop, participants were asked to evaluate how well each of the workshop objectives were achieved. In written evaluations, the participants expressed satisfaction with the outcomes of the workshop. However, there are indications, both in their ratings on the objectives and in their responses regarding unresolved issues, of continuing concern about unresolved problems and postponed decisions.

The following unresolved issues, which must be dealt with in follow-up activities, were identified most frequently.

- Differing objectives and priorities between the PWWR and USAID;

- The scope and content of feasibility studies, and who is to do them;

- Need for a cost-recovery strategy;

- Scope of the work plan;

- Mesqua design and construction schedule; and

- Ministry staffing and funding to directorates.

Fundamental differences between USAID and PWWR were identified, thoroughly discussed, and agreements were reached during the workshop. With the new TA leadership and renewed energy of TA personnel and Ministry staff, it is extremely important that those with the responsibility for following through on decisions and actions related to the agreements move on them in a timely and effective fashion. In that spirit, the consultant-facilitators make the following recommendations:

- PWWR and USAID must resolve their conflicting views about the priorities of IIP;

- The Ministry should provide the directorates with sufficient, trained Egyptian staff to carry out feasibility studies and develop construction plans. The Ministry should also provide adequate resources (i.e. survey and drafting equipment, supplies and miscellaneous funds to cover incidental expenses) in a timely fashion.

- Per diems should be reimbursed as agreed, thus preventing low morale, low motivation, and discouragement of staff.

- Training and procurement plans should be expedited.

- USAID must clarify its expectations as to what needs to be done in a feasibility study.

- There should be frequent meetings between USAID, PWWR and the TA team until there are compromises made within the boundaries of the Grant Agreement.

- All agreements reached in this workshop should be carefully monitored and designated persons held accountable for the recommended actions.

If the commitments articulated during this workshop and in the follow-up session on cost-recovery strategies are implemented effectively and expeditiously, then IIP's future accomplishments toward its goals will certainly be enhanced.

Chapter 1

INTRODUCTION

1.1 Background of the Assignment

The Irrigation Improvement Project (IIP) is one of ten components of the Irrigation Management Systems (IMS) Project, located within Egypt's Ministry of Public Works and Water Resources (PWWR). The goal of the IMS Project is to provide "effective control of the Nile waters for all uses and particularly for their optimal allocation to and within agriculture as a means of helping to increase agricultural production and productivity."

The objectives of the IIP component are to strengthen PWWR's institutional capacity; develop a "rational" interdisciplinary approach for planning, designing, and implementing the renovation of specific commands; develop an Irrigation Advisory Service (IAS); organize Water User Associations (WUAs) in all IIP areas; and establish policies and procedures for recovering an appropriate portion of operation and maintenance (O&M) costs and 100 percent of the costs of mesqa and on-farm improvements.

In March 1989, the Irrigation Support Project for Asia and the Near East (ISPAN) conducted a project start-up workshop for IIP. Kathy Alison, ISPAN Human Resource Development Program Manager, and Dee Hahn-Rollins, a management consultant with Training Resources Group, facilitated the workshop.

In September 1990, an interim evaluation was conducted by ISPAN of all ten IMS components (see Appendix A). Major problems cited within the IIP were:

> "With the exception of the Irrigation Advisory Service (IAS), IIP is not making acceptable progress. The project has suffered from serious delays, changes in funding levels, and unrealistic implementation planning."
>
> "Issues related to feasibility studies have brought the project to a virtual halt. Difficulties and misunderstandings exist on all sides."
>
> "The cost-recovery issue remains unresolved."
>
> "TA management has been notably unsuccessful in working with Egyptian counterparts to produce an integrated, productive project team."

Since September several recommendations of the evaluation team have been effected. To help address remaining issues it was decided to conduct a project planning and implementation workshop and invite key players who could assist in analyzing and resolving critical issues which constrain the project's implementation efforts.

ISPAN was asked to design and conduct a four-day workshop in Alexandria, Egypt, for key project staff. Fifty-three representatives from the PWWR, technical assitance (TA) team, and USAID/Cario participated (see Appendix B). The workshop was scheduled outside of Cairo to provide maximum interaction with minimum distraction. The facilitators who conducted the March 1989 workshop performed the same function again.

1.2 Terms of Reference

The responsibilities of the facilitators included:

- Reviewing background information and interviewing key members of PWWR, project staff, and USAID personnel to identify key issues and constraints to successful project implementation

- Analyzing interview data, using results to design the specific sessions for the workshop

- Managing and facilitating the workshop discussions, emphasizing team building and problem-solving

- Preparing a brief report of issues identified, the agreements reached, and other workshop products

1.3 Interviews

Twenty-six interviews were conducted in preparation for this workshop. Interviewees included 13 Egyptians in the PWWR and IIP headquarters in Cairo and Minya. In addition, the consultants visited a unit commmand site in Minya and held informal conversations with farmers and staff within that directorate. Eight consultants from the TA team and five USAID personnel were also interviewed. The interviews focused on the following questions:

- What were the major concerns that needed to be addressed at the workshop?

- What were the current perceptions about how well the different project entities were working together?

- What did people expect as a result of the workshop?

The interview responses were analyzed and used to create the agenda for the workshop. A workshop agenda, schedule of specific sessions, and list of issues was presented to Engineer Salem Sayed Ahmed, IIP Project Director, Rod Vissia, Team Leader, and Dave Smith, USAID Project Officer, for their information and clearance.

1.4 Interview Findings and Issues Identified

Most interviewees were very concerned about the status of the project and hoped that the major constraints impeding its progress could be discussed at this workshop. Many reported feeling cautiously optimistic as a result of recent changes in personnel and management approaches within the TA team. Many attending this workshop had been present at the project start-up workshop in March 1989. They hoped this type of participatory forum would result in differences being aired, clarified and resolved among USAID, PWWR, and the TA team.

The three major constraints to project implementation, as identified in the interviews, concerned feasibility studies, training, and project management.

1.4.1 Feasibility Studies

> "Issues related to feasibility studies have brought (IIP) to a virtual halt. Difficulties and misunderstandings exist on all sides: the TA (team) has not prepared feasibility reports according to accepted standards; the Ministry does not agree with the planning process espoused by USAID, which uses feasibility studies as a key element in the planning process." (quote from IMS interim evaluation report, 1990, p 10)

It appears that there is still no agreement about how to accomplish one of the overall objectives of the project—to develop a rational interdisciplinary approach for planning, designing, and implementing the renovations of specific command areas identified in PWWR's current five-year plan. USAID stresses the importance of developing the capability of preparing and using feasibility studies as a necessary element in the planning and decision-making process for each renovation. PWWR's emphasis, on the other hand, is on the renovation and construction of the targeted irrigation systems rather than developing its institutional capacity to prepare feasibility studies.

Some of the problems which stem from these differences are the following:

- Lack of counterpart staffing for the TA team, which results in expatriate engineers doing most of the work on the feasibility studies, rather than transferring those skills to Egyptian engineers.

- Lack of an interdisciplinary approach involving engineers, agronomists, economists, and sociologists in addressing complex problems during the design and implementation phases of the project.

- Difficulty in integrating results of feasibility studies into main delivery and mesqa improvement designs. (Designs are often completed before the feasibility studies are submitted and approved.)

- Lack of criteria for scaling back the number of improvement areas. (The IMS interim evaluation report suggests that the project will have to be scaled back because of changing funding levels.)

- Lack of criteria for selection and planning of demonstration/pilot mesqas; lack of an operational plan for using the demonstration/pilot mesqas effectively.

- Lack of clarity about documentation needed in the mesqa improvement plans and feasibility studies.

- Conflicting views about which alternatives for mesqa improvements are most appropriate and cost effective. (Only two types of alternatives have been evaluated.)

1.4.2 Training

IIP's program objectives stress tying physical improvements of the irrigation system to institution-strengthening within the Ministry, with training as one of the key vehicles. Yet, according to the IMS interim evaluation, only two to three percent of the total training budget of $2.5 million has been spent, mostly on the initial development of the IAS/WUA capability within the Ministry. Very little attention has been given to increasing the capability and capacity of IIP engineers to perform new technical tasks called for by the project (i.e., feasibility studies, design of mesqas and micro irrigation systems, computer skills, etc.). After several false starts, a

training plan is now being developed by Morrison-Knudsen Engineers, Inc. (MKE) following a two-day training needs assessment meeting with general directors in September. But time is running short and there is a need to begin the training programs now.

The immediate need for staff training, including in-country courses and off-shore study tours and academic and non-academic training for entry-level and mid-level engineers and senior managers, was mentioned by most of the interviewees. A number of specific topic areas were identified: English language, computer skills, feasibility studies, mesqa/micro irrigation systems design, and project planning and management skills.

Questions for the workshop which emerged from interviews included the following:

- What is the status of the MKE training plan? When will it be completed? Who will be responsible for managing the training plan from the Ministry and from MKE? Will additional staff be needed to manage the training program?

- How will the training program be coordinated with the Professional Development Project and other IMS components?

- Area engineers are to be responsible for helping the general directors develop a training program for directorate staff. What work is being done by the area engineers and general directors to design and implement these training programs?

- Action memos are now being used for approval of specific in-country training programs, but approval is either delayed or not forthcoming. What can be done to use action memos more effectively to provide urgently needed training programs in feasibility study methodology, micro system design, and the like?

- What specific types of training programs and study tours are needed by IIP engineers to help them do their jobs better?

- What types of training courses and study tours would be useful to the general directors to help them understand such concepts as IAS and the new engineering technologies being introduced on this project?

- What other issues around training should be discussed at this workshop and what are your recommendations for dealing with these issues?

1.4.3 Project Management

The interim evaluation report identified several areas of IIP in need of improvement: management procedures and practices, communication, team work and funding for IIP activities in the directorates. Several interviewees stated that team work has improved between the TA members and Egyptians counterparts in the central office; a much better working relationship with USAID has developed; and the new team leader's managerial style is effective and has raised staff morale. Long-standing concerns are beginning to be addressed, such as developing a training plan and getting approval for necessary equipment.

Interviewees are hopeful that management problems that still exist can be solved quickly. They identified two major problems. First of all, it is very difficult to get timely approval from headquarters for activities in the directorates. It takes too long to receive an answer as to when or if in-country training can be held and when procurement items—motorcycles, survey instruments, supplies—will be secured. Money for fuel and per diems is delayed which effects work schedules. Second, the lack of adequate operating funds for IIP directorate activities continues to create problems. The amount allotted does not cover expenses for the whole month. As stated in the evaluation, insufficient funds affect "morale and implementation." When there are not enough funds for fuel or per diems, field agents cannot gather the data needed and they lose motivation and become discouraged. Work slows or stops.

Another related issue is the way in which operating funds are dispersed. Interviewees state that dispersing funds on a monthly basis is too time-consuming and not cost effective. Valuable time is often wasted in making several trips or calls to the central office before funds are released. Three questions emerged for the workshop:

- What needs to be done to insure a prompter response to requests?
- What can be done to provide adequate operating funds for the directorates?
- What system can be developed to disperse the funds more efficiently?

Chapter 2

THE WORKSHOP DESIGN

2.1 Overview of Workshop

The workshop was designed to provide an opportunity for key IIP staff to meet and attempt to resolve some long-standing problems which have adversely effected the progress of this key component of the IMS Project. Four staff groups were involved:

- PWWR/IIP headquarters staff—senior and first undersecretaries for the Ministry as well as the undersecretary for the IIP and headquarters
- IIP directorate staff—general directors from the six project areas
- MKE/LBII (Louis Berger International, Inc.) contract team—field engineers, social scientists, and economists
- USAID—associate mission director for Irrigation and Land Development, ILD office director, the IIP project officer, and other project officers who work on other components of the IMS.

Fifty-three people participated in the workshop. The workshop was designed to provide time for panel presentations, question-and-answer periods, and small group discussion of issues with report-outs to the whole group for further discussion and problem-solving.

The workshop objectives were the following:

- Review project objectives and operating procedures with the national staff, key directorate staff, MKE staff, and USAID staff to assure that all parties have a common understanding.
- Develop strategies for improved management of the project in response to recommendations from the IMS interim evaluation.
- Review planning issues that have been identified and agree on procedures to be used for additional studies.

- Discuss and clarify issues regarding cost recovery and decide on the next steps for development of a cost-recovery mechanism as defined in the Grant Agreement.

Guidelines for conduct of the workshop (i.e., "groundrules" of openness and respect for others' opinions) were also presented.

The workshop was organized as a four-day event, from Sunday evening, November 11, 1990, to Wednesday, November 14, 1990.

SUNDAY, NOVEMBER 11, 1990

4:00 PM Workshop opening

Introductions of participants

Discussion of workshop objectives, schedule and issues to be discussed

Panel presentation of project information

Engineer Salem Sayed Ahmed, Undersecretary of the Irrigation Improvement Project

Rod Vissia, Team Leader for Technical Assistance Team, Morrison-Knudsen Engineers, Inc.

Joe Carmack, Office Director of Irrigation and Land Development, USAID

Questions and answers

7:00 PM Reception

MONDAY, NOVEMBER 12, 1990

8:30 AM	Overview of day
8:45	IAS/WUA panel
	Engineer Hassan Shouman, General Director of Construction and Deputy Director, IIP
	Essam Barakat, Director of IAS
	Abdel Raof Abu El Nour, PWWR Consultant/IIP
9:15	Questions and answers
10:00	Break
10:30	Review of issues to be discussed
11:00	Small group discussions
	Feasibility studies Project management Training
1:00 PM	Lunch
3:00	Report-out/discussion — feasibility studies
4:30	Break
4:45	Report-out/discussion — project management
6:00	Adjourn

TUESDAY, NOVEMBER 13, 1990

8:30 AM	Project management
9:30	Report-out/discussion — training
10:00	Break
10:30	Continue discussion
12:30 PM	Lunch
2:30	Review of work plan - presentation by Rod Vissia, Team Leader
4:30	Break
4:45	Discussion of work plan
6:00	Adjourn
8:30	Dinner at San Giovanni

WEDNESDAY, 14 NOVEMBER, 1990

8:30 AM	Review of agreements
10:00	Break
10:30	Workshop closure and evaluation
11:00	Cost recovery panel

Mohamed Allam, Project Officer USAID
Adrian Hutchens, MKE/LBII Economist
Philip Goorian, MKE Economist, PMP/CMP

1:00 PM	Lunch
3:00	Cost recovery discussion and agreements
5:00	Adjourn

2.2 Session Descriptions

In this section, a brief description is given of each session. The outcomes of each session will be reported in the next chapter.

Opening Session

The opening session began at 4 p.m. on November 11, 1990, with introductions and a brief overview of the workshop objectives, schedule, and issues to be discussed. A panel consisting of Engineer Salem, IIP project director, Rod Vissia, team leader, and Joe Carmack, ILD office director, presented information on the current status of the project. They were asked to address the following questions:

- What is the mission of IIP?
- What are the roles of PWWR, MKE/LBI, and USAID in implementing the project?
- What are the major accomplishments of IIP since implementation began?
- What are the most important priorities of the project?
- What do you see as the major constraints facing IIP in the next year?
- What is your vision for the future of the IIP?

Following the panel members remarks (see Appendix C) participants were asked to develop questions to which they would like the panel to respond.

Irrigation Advisory Service and Water User Association Session

A panel including Engineer Hassan Shouman, Essam Barakat, and Abdel Raof Abu El Nour gave a brief history of the findings from the 1984 Egyptian Water User Project and results and suggestions from the Regional Irrigation Improvement Project (RIIP) concerning the involvement of farmers in proposed water delivery systems and the roles and responsibilities WUAs would have in the ongoing operation and maintenance of the system at the mesqa level. The panel described the critical issues regarding the institutionalization of IAS/WUAs. IAS recommendations were put forth by the panel members for discussion and decision (Appendix D).

Overview of Project Issues

The facilitators presented the three major issues identified in the interviews—feasibilities studies, training, and project management — and the questions related to them for discussion and problem-solving. The interview data and the findings of the IMS interim evaluation report provided the rationale for focusing workshop discussions on these particular issues.

Discussion of Project Issues

Participants were asked to select one of the three issues in which they were most interested. For each issue two small groups were created. Each of the small groups was asked to further analyze that issue and its attendant problems and develop recommendations or proposed agreements to be presented to the whole group for further discussion and decision making. The issue groups met for an extended period of time.

As each issue was discussed in the whole group, the two small groups that worked on that specific issue were asked to make presentations and report their recommendations. Following the small groups' reports, a total group discussion was held noting similarities and differences. After much discussion, tentative agreements were reached on how to resolve the problems of that issue. These agreements were recorded on flipcharts.

Presentation of Work Plan

Rod Vissia, team leader for MKE/LBII, presented the annual work plan for the remainder of the project (July 1990 to June 1991). He proposed a work program compatible with available staff, anticipated training, transport, equipment, and other resources. His presentation was followed by questions and reactions to the proposed plan.

Final Review of Workshop Agreements

Copies of agreements relating to each issue were distributed to each participant. The facilitators reviewed the agreements and discussion of each issue to ensure understanding and group agreement. As needed, follow-up steps were identified and an individual was assigned responsibility for ensuring future actions.

Evaluation and Closure

A written workshop evaluation was distributed and completed by the participants. Engineer Salem, IIP project director, thanked everyone for their participation.

Session on Cost Recovery

Following the official closure of the workshop a session was held for those participants involved in developing policy for a cost-recovery program for the IMS Project. Approximately 15 people were involved in this discussion. A panel presented a conceptual analysis of cost recovery (Appendix E) and a possible theoretical rationale that could be used to establish policy guidelines for sharing irrigation costs (Appendix F).

Chapter 3

OUTCOMES AND AGREEMENTS

3.1 Overview of Outcomes

This chapter contains the specific agreements and recommendations developed during the workshop to address critical problems hindering successful implementation of IIP. This workshop occurred at an important juncture in the life of the project. It provided an excellent opportunity to:

- Clearly identify the major conflicts between the PWWR and USAID concerning the priorities of IIP
- Strengthen team cooperation and communication among IIP staff, TA personnel, and USAID officers after a very divisive and unproductive period
- Gain a better understanding of the history, goals, and difficulties of implementing IIP, especially for new key players, i.e., general directors, PWWR policy makers, team leader, and TA consultants
- Educate and involve participants in thinking strategically about long-range concerns such as the institutionalization of IAS/WUAs and developing policy initiatives for a cost-recovery program
- Use a participatory approach to analyze and recommend solutions to reduce the constraints on implementation

3.2 Specific Recommendations and Agreements

This section lists specific recommendations and agreements reached regarding the problems with feasibility studies, project management, and training. It also gives the recommendations of the group in response to the panel presentations with discussion of IAS and the IIP work plan.

3.2.1 Feasibility Studies

Based on discussion during the workshop, the small groups addressing feasibility studies were asked to consider and make recommendations about the following points:

- Who has responsibility for preparation of feasibility studies — MKE or PWWR?
- How extensive should the feasibility studies be? What should be included?
- Is staffing adequate to complete the feasibility studies?
- How can feasibility studies be made more useful to PWWR in decision-making?
- What is the role of the technical committee and steering committee in decision-making concerning improvements?

The following agreements were reached:

- It was agreed that preparation of feasibility studies is now a joint (PWWR plus MKE) responsibility. This will lead to total Ministry responsibility in the future. Building this capability within the Ministry will be done through a variety of activities.

  The Ministry has responsibility for administrative areas, i.e., objectives, scope, resource commitment, and allocation of resources. The TA team initially carries the major role in technical analysis and performs technical oversight during the phase-in process, with the intent that the Ministry assume more responsibility as the project progresses.

- The feasibility study guidelines presented by MKE are close to what the final product should be. It was agreed that David Smith, Joe Carmack, Eng. Salem, Rod Vissia, Adrian Hutchens, Ali But, and Hassan Shouman would meet on November 19 to work out details and reach agreement.

  The meeting on November 19 will consider the following suggestions:

- Because of limited time and resources, accept MKE's guidelines for feasibility studies (Appendix G). It was noted, however, that the guidelines do not address specific agreements in PIL 102 (Appendix H) about problems other than water delivery. These additional problem areas need to be further resolved.

- Water users' involvement in mesqa alternative selection.

- In areas where there are no MacDonald studies, use of standardized cost-benefit parameters and data from correlation areas.

- Criteria for water-short conditions in feasibility studies.

- Financial analysis including cost recovery in each feasibility study.

The group will also discuss how to move forward on the implementation of the three areas that have been approved for improvements to the branch canal. (In order for continuous flow to work effectively, improvements should be made concurrently on the branch canals and mesqas.)

- Following the November 19 meeting, a meeting will be held with area engineers and directorate staff to review the agreed-upon feasibility study guidelines and get input on how to implement them. The results will be discussed at the December 10 staff meeting with general directors and engineers.

- Additional staff should be identified and assigned to work on the feasibility studies. Recommendations included one economist in Cairo, one soil scientist in Cairo, agronomists in two directorates assigned to feasibility studies, and one or two experienced engineers solely assigned to feasibility studies to work with area engineers in each directorate.

  Engineer Salem and Rod Vissia will meet November 27 to review the need for additional staff and also to see if there is an issue of overstaffing. They will develop recommendations for additional staff and submit requests to Eng. Mazen.

- Duplication in feasibility studies should be avoided; this recommendation will be handled on a case-by-case basis by the feasibility study team.

- IAS staff will be used to collect data on problems of farmers in order to formulate feasibility studies. IAS staff will also be used on a periodic basis to help in feasibility study data gathering.

- Engineer Mazen and Joe Carmack will meet to discuss land-leveling policy within the Ministry.

- Appropriate alternatives will be considered for mesqa improvements, not limited to raised, lined mesqas or pipelines.

- IIP should submit requests for help in doing feasibility studies to the Project Preparation Department by December 1, 1990, if assistance is needed.

- IIP should develop a plan for monitoring and evaluation and should submit the plan to the IIP Steering Committee. Involvement of the WRC in the monitoring and evaluation plan will be discussed by the Steering Committee. The plan will be developed by Ali Morsi within the next six months (by May 1991).

3.2.2 Project Management

The questions to be addressed for improved management of the project were as follows:

- What needs to be done to insure a prompter response to requests?

- What can be done to provide adequate operating funds for the directorates and what system can be developed to disburse the funds more efficiently?

- What can be done to reduce staffing and communications problems?

The following agreements and recommendations are made:

LOCAL OPERATING BUDGET

- Directorates agree to submit annual funding requests to headquarters by February 1.

- At the joint meeting in December, clarification of what items can be included in the local operating budget annual request will be discussed. Each directorate's financial assistant should attend the December meeting with general directors.

- Requests for operating funds are to be based on the need of each directorate. The maximum allowed is not 2000 LE.

- At each monthly meeting in Shoubra, budget problems should be an agenda item. A report on the status of special budget requests should also be made.

- For each directorate a three-month advance budget payment should be established, with a revolving fund for monthly reimbursements based on receipt of vouchers. The three-month budget request should be submitted by December and three-month advances will begin in January 1991.

- General directors will submit vouchers on a monthly basis, by the 5th of each month.

INCENTIVES (CLARIFICATION)

There has been an amendment to the Grant Agreement. PWWR has requested LE 3 million from the Ministry of International Cooperation. The following agreement was reached:

- Request the IMS Coordinating Committee to pay incentives to cover overtime of all staff working in IIP (field and headquarters). Eng. Taha will put this on the Coordinating Committee agenda.

PER DIEM

- Staff should be reimbursed for per diem costs on a monthly basis. Per diem is not an incentive and should not be used as such. When criteria for per diem is met, it should be paid without any delays.

- IIP will reimburse per diem costs of staff seconded from other ministries as well as from PWWR.

- Every three months, Eng. Salem will evaluate per diem against the budget to insure reasonable expenditures.

- General directors agree to bring per diem reimbursement requests to monthly staff meetings in Shoubra for approval.

- A recommendation will be submitted to the IMS Coordinating Committee requesting that general directors (rather than the project director) be given the authority to approve per diem reimbursements. Eng. Taha will put this on the committee's agenda for consideration.

OTHER AGREEMENTS

- Rest houses will be constructed if housing is needed after implementation. If housing will not be needed after implementation, housing will be rented, not built. Directors are responsible for insuring that housing construction costs are included in the contract when needed.

- In Bahig, the general director and area engineer agree to develop a plan on how to pay expenses of the study team in the field and submit the plan for approval to the project director.

- The Structural Replacement Project has developed a system and criteria for pre-qualifying contractors and will share this information with general directors. Evan Krith will distribute it to IIP staff (headquarters and directorates).

- Suggestions for increased information-sharing among staff:

  - A newsletter should be established

  - Short training sessions should be designed and delivered, e.g. how to write reports, how to run effective meetings, how to build teams, etc. Hassan Shouman will take the lead in these activities.

- Written requests from IIP headquarters will receive a written response within one week.

- IIP staff should not be transferred, except for promotional reasons or in case of misconduct or overstaffing.

- Job descriptions and training plans should be developed for each position. The Inception Report contains this information. General directors are responsible for making sure there are job descriptions and training plans.

- A system for evaluation of staff performance will be developed and reviewed by general directors based on the IIP work plan.

- General directors agree to meet regularly with IIP staff (weekly or monthly) in directorates.

- Results of this workshop should be discussed with the IIP staff at headquarters and in the directorates.

- The special study on groundwater could be funded by Ministry funds if necessary to overcome any further delay in beginning the study.

- Max Laudermilk will be responsible for leading a discussion on how to improve communications among the IIP staff at the January staff meeting.

3.2.3 Training

The following questions were addressed at the workshop:

- What is the status of the MKE training plan? When will it be completed? Who will be responsible for managing the training plan from the Ministry and from MKE? Will additional staff be needed to manage the training program?

- How will the training program be coordinated with the Professional Development Project and other IMS components?

- Area engineers were to be responsible for helping the general directors develop a training program for directorate staff. What work is being done by engineers and general directors to design and implement these training programs?

- Action memos are now being used for approval of specific in-country training programs, but approval is either delayed or not forthcoming. What can be done to use action memos more effectively to provide urgently needed training programs in feasibility study methodology, micro system design, and the like?

- What specific types of training programs and study tours are needed by IIP engineers to help them do their jobs better?

- What types of training courses and study tours would be useful to the general directors to help them understand such concepts as IAS and the new engineering technologies being introduced on this project?

- What other issues around training should be discussed at this workshop and what are your recommendations for dealing with these issues?

The agreements reached were as follows:

- Additional training-needs information will be gathered from directorates by the end of November. Rod Vissia will send guidelines on how to provide the needed information to the general directors. The information will be used to complete the IIP training plan which will be submitted to the Ministry by the end of December for approval and submission to USAID.

- Off-shore training participants must still be approved by the IMS Coordinating Committee (Ministerial Decree required) and then sent to USAID for action.

- Off-shore training must be planned in advance. Personnel should be nominated at least four months — and submitted to USAID for approval at least three months — before departure. It was agreed that at least 80 percent of the nominations will be submitted within the three-month time frame.

- TOFEL scores must be submitted at the same time candidates' names are submitted to USAID.

- Requests for off-shore study tours and training which will be held in a country other than the U.S. must be submitted to USAID/Cairo within the three to four month time frame, in

order to apply for and receive a waiver from USAID/Washington.

- Each individual on TDY should present a seminar to appropriate GOE personnel and TA staff. This should be a part of each TDY's scope of work.

- IIP should request the Professional Development Project/National Irrigation Training Institute (NITI) to provide special courses needed by its staff. IIP will coordinate with NITI after the IIP training plan is developed.

- IIP should plan to "over-train" (in terms of number of people) to allow for the inevitable transfer or promotion of some personnel. Personnel should be kept in their positions unless promoted. Engineer Salem should estimate the percentage of loss/transfer of personnel for inclusion in the project training plan.

- General directors will be invited to participate in IIP training courses being held in their governorates, at least on the first day and the closing day, to understand and support the training.

- Computer training needs to be held for all relevant staff and can proceed without waiting for procurement of computer equipment.

- Staff in directorates can receive computer training in Shoubra (NITI) if training is not available in directorates. If computer training is needed, directorates should send a written request to Eng. Salem. No action memo is required.

- If private firms in the governorates provide computer training, IIP staff can be trained there rather than traveling to Shoubra. An Action Memo is required for this type of training.

- Computer equipment can be leased until the IIP computer plan is approved.

- IIP will continue to provide quick approval for English language training.

- The TA team and Egyptian counterparts will continue to be closely involved in on-the-job training.

- Special workshops should be planned and implemented specifically for the general directors on such topics as orientation to the project, management, etc. This type of training is included in the training plan now being developed.

3.2.4 IAS Agreements

Following the panel discussion, the participants agreed to take the following actions to continue the successful efforts of IAS:

- Establish a new IAS sector under the Irrigation Department
  - Engineer Mazen's office will develop an initial organization chart for this new sector within the next three months.
  - Establish an advisory board with representatives from WRC and other concerned agencies.
  - The sector will have sections which are related and responsible to the undersecretary in governorates.
  - WRC could be requested to conduct research on the effectiveness of WUA/IAS.
- Work toward legalization of WUAs
  - WUAs in Minia will be temporarily registered with the Ministry of Social Affairs as a test case.
  - The Special Committee looking at this issue should move forward on the Action Memo to legalize WUAs. Eng. Hassan Shouman will complete the Action Memo for submission to Eng. Salem by the first week in December.

Plans and needs for additional equipment, transportation, and funds for IAS should be prepared and submitted to the team leader by November 20 for inclusion in the project plans. All components/directorates have the same deadline. USAID has approved the procurement plan for vehicles, with an estimated delivery time of four months (minimum time frame).

Agreement was reached on the following points:

- There is no need for a high-level workshop on IAS at this time. High-level personnel within the PWWR are already knowledgeable and supportive of IAS. Critical issues that arise in the future can be discussed at meetings of the IIP Steering Committee.

- A committee composed of Hassan Shouman, Essam Barakat, Max Laudermilk, Dr. Metawie, and Flynn Fuller will meet to develop a proposal to hold an international conference on cost/benefits of water user associations on large public gravity irrigation systems. The proposal will be given to Eng. Salem in February for submission to the IMS Coordinating Committee.

3.2.5 Overview of IIP Work Plan Discussion

The discussion of the overview of the work plan and the planning schedule for FY 90-91 reflected differences between PWWR and USAID over which objectives have priority for IIP, especially in the current work plan and schedule. As the differing positions were increasingly clarified, it was decided that more extensive discussions were needed to resolve issues which are currently impeding the progress of the project. These issues need to be addressed immediately in order for MKE to focus the remaining time in their contract to maximum production.

Several participants expressed hope that some compromise will be reached between PWWR and USAID on this critical problem of conflicting priorities. A suggestion was made that as a starting point for discussion at a future meeting, each party prepare a one-to-two page position paper which would include several alternatives.

It was agreed that the IIP Steering Committee would meet in the very near future to discuss these differences and attempt to reach a compromise. Joe Carmack will be invited to attend this meeting. Eng. Mazen will schedule this meeting during the week of November 18. The agenda will include an initial discussion on the possible extension of the MKE contract.

3.2.6 IIP Cost-Recovery Agreements

Workshop participants attending the session on cost recovery agreed to continue discussion of Dr. Allam's paper at the IIP Steering Committee meeting in the week of November 18. Joe Carmack and Dr. Allam will participate in the meeting. It was also agreed that by February 1991, PWWR will develop a cost-recovery strategy using

Dr. Allam's paper as a reference, plus information about practices in similar countries. When an acceptable cost-recovery strategy is approved, IIP and MKE will develop a program of cost recovery at the mesqa level within six months to include a) repayment policy, b) procedures for collection, and c) draft legislation for implementation.

3.3 Summary of Participant Evaluation

Forty-two participants completed the written evaluation. A complete report is provided in Appendix I. Participants were asked to rate how well each of the four workshop goals were achieved using a scale of 1(low, not achieved) to 5 (high, goal achieved very well). The first goal — to review project objectives and operating procedures with the national staff, key directorate staff, MKE staff, and USAID staff to assure that all parties have a common understanding — received the highest rating, 4.10. The other goals were rated as follows: discuss and clarify issues regarding cost recovery and decide on next steps for development of a cost recovery mechanism as defined in the Grant Agreement (rated 3.96); review planning issues that have been identified and agree on procedures to be used for additional studies (rated 3.86); and develop strategies for management of the project considering recommendations from the IMS interim evaluation and this workshop (rated 3.84).

The ratings reflect the continuing concern of participants. Although the workshop provided an excellent opportunity to build better relations among key parties and to clarify issues, many people still felt anxious that some problems are not yet resolved and many decisions were postponed. Several commented on the importance of those responsible for follow-up actions keeping their commitment to do so.

When asked if there were unresolved issues that should be dealt with in follow-up activities, participants mentioned the following areas most frequently:

- Differing objectives between PWWR and USAID
- The scope and content of feasibility studies and who is to do them
- Need for a cost-recovery strategy
- Scope of the work plan
- Mesqa design and construction schedule
- Ministry staffing and funding to directorates

The facilities were favorably evaluated. Some reported the travel arrangements were confused with changes at the last minute.

Comments about the facilitators were:

- "Excellent—especially when conflict between USAID and the Ministry people occurred. Follow-up questions were good and prevented many evasive answers."

- "Stood up very well under pressure and were able to clarify many issues clearly.

- "Good insight on problems resulting from in-depth interviews of participants."

- "Constant attention to detail including setting dates for completion of discussed items."

- "Some discussions tended to become overly long and tedious; needed to stop us and move on."

Chapter 4

RECOMMENDATIONS AND CONCLUSIONS

If the IIP is to move forward, the agreements reached at this workshop must be honored by all concerned. Several dates were set for key partners to meet and resolve the differences that have plagued the project from the very beginning. The issues raised at this workshop were some of the same ones that were discussed, but obviously not resolved, at the project start-up workshop in March 1989. With the change of leadership on the TA team, morale has improved and work has begun to move forward, but time is running out. There are major problems that need to be settled as quickly as possible. Therefore, the facilitators make the following recommendations:

- PWWR and USAID must resolve their conflicting views about the priorities of IIP, i.e., designing and constructing irrigation improvements or institutionalizing of the capacity within the Ministry to do feasibilities studies and the like.

- The Ministry should provide the directorates with sufficient trained Egyptian staff to carry out feasibility studies and develop construction plans. The Ministry should also provide adequate resources (i.e., survey and drafting equipment, supplies, miscellaneous funds to cover incidental expenses) in a timely fashion. The staff and resources will help the directorates provide information needed by Ministry headquarters to complete feasibility studies and get approval from USAID for construction to begin.

- Per diems should be reimbursed as agreed, thus preventing low morale, low motivation, and discouragement of staff. Currently the reimbursement of expenses (per diem) is mistakenly seen as an incentive, which causes resentment and hardship for staff when it is withheld or delayed.

- Training and procurement plans should be expedited as soon as possible.

- USAID must clarify its expectations as to what needs to be addressed in a feasibility study.

- There should be frequent meetings between USAID, PWWR and the TA team until there are compromises made within the boundries of the Grant Agreement.

- All agreements reached at this workshop should be carefully monitored, and designated people held accountable for the recommended actions.

Earlier in this report, one participant was quoted as saying that lately he felt "cautiously optimistic" that this project could move forward and begin to accomplish some of its goals. The facilitators are reassured that the fundamental differences between USAID and PWWR have been identified and discussed. But much has to be done in the near future to rescue this project from further deterioration. Because of the new TA leadership and the renewed energy of TA personnel and Ministry staff, it is extremely important that those responsible for decisions make them in a timely manner and delegate authority whenever possible to accelerate the activities needed to complete the project's goals. If the commitments articulated at this workshop are lived up to, then IIP's future warrants an optimistic outlook.

Appendix A

Summary of Components Findings, Conclusions, and Recommendations[1]

3.1 Irrigation Improvement Project

3.1.1 Background and Objectives

The Irrigation Improvement Project is the successor to the Egypt Water Use and Management Project and a continuation of the Regional Irrigation Improvement Project (RIIP).

IIP's objectives are to—

- Strengthen PWWR's institutional capacity so that it has the equipment, organization, staffing, managerial and administrative skills, and operational policies and procedures to continue the National Irrigation Improvement Program (NIIP) with limited expatriate assistance.
- Develop a "rational" interdisciplinary approach for planning, designing, and implementing the renovation of specific commands identified in PWWR's current five-year plan.
- Develop and put into place an Irrigation Advisory Service to provide for the transfer of water management technical information and assistance to farmers and water user groups.
- Organize operational WUAs in all IIP areas to provide farmer input during the renovation process, communicate local concerns to government officials, coordinate scheduling of water on mesqas, perform maintenance, and resolve local disputes.
- Establish policies and procedures for recovering an appropriate portion of the O&M costs of the irrigation system and 100 percent of the costs of mesqa and on-farm improvements.

3.1.2 Findings

IIP activities, including delivery system and mesqa improvements and IAS efforts, were expected to be carried out in 11 commands in 6 directorates throughout Egypt. The total area to be improved was targeted at 383,000 feddans. USAID agreed, within the limit of available funds, to share 80 percent of the construction costs upon approval of feasibility studies, establishment of the IAS, and formation of mesqa-level WUAs. Feasibility studies in the first six command areas have been progressing slowly; two have been submitted to PWWR and USAID but are considered inadequate by USAID and have not been approved.

In one year, IIP has made impressive progress in developing the IAS into a dynamic program. The IAS has developed a rationale, largely based on EWUP's recommendations, which has received the support of senior Ministry officials in principle. More than 300 WUAs have been formed at a very initial stage in five of the six directorates. At this point, they have discussed their role with IAS staff and have selected leaders.

Little progress has been made in designing or implementing a cost-recovery program, with the exception of a report prepared by the TA contractor. No cost and benefit data exist on which to base a policy dialogue.

There is general agreement that implementation has greatly improved with the appointment of the new project director in February 1990. However, the flow of information and resources is far smoother within the Cairo establishment than between Cairo and the directorates, despite monthly meetings between senior project management and the general directors.

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[1] Source: Irrigation Management Systems Project Interim Evaluation, September 1990. pp 9-15.

Communication between Ministry staff and the TA team is a continuing problem. TA staff do not share office space with their counterpart staff, which is essential to a good working relationship. The TA team holds monthly meetings, to which PWWR staff is not invited, although programmatic issues are discussed and decisions made. TA management has insisted upon separate resources, including secretarial support, telephone, and photocopier, although they are paid out of project funds. This division is often cited by Ministry staff and is a continuing source of tension. There is little evidence to suggest that TA management is aware of its insensitivity or is taking measures to repair the damage.

IIP has been partially successful in acquiring staff, but there are still serious shortages in fully dedicated engineering staff. IIP competes with SR for staff attention. In the directorates, IIP and SR are in the Special Projects office under the management of the general director. Directorate staff assigned to IIP are often pulled off to work on SR. Also, a number of important management positions, including general director of the IAS, remain unfilled.

Only 3 percent of the total training funds have been spent. Off-shore training has been limited to computer software training. On-shore training by the IAS has almost exclusively focused on WUA-organizing techniques for technical officers and field staff. With rare exceptions, TA has placed little emphasis on on-the-job training (OJT). Area engineers have failed to develop training programs for directorate staff.

3.1.3 Conclusions

IIP program objectives, tying physical improvements closely to institution-strengthening in the Ministry and IAS, continue to be sound, but the target of 383,000 feddans has never been realistic. At its current funding level, only 17 percent of the total can be completed with the expensive mesqa alternatives. IIP requires a more-realistic target and implementation approach.

IIP has suffered from serious delays, changes in funding levels, and unrealistic implementation planning. The project requires careful ongoing assessment to ensure its success; the HCC is an appropriate locus for overseeing the monitoring effort.

Issues related to feasibility studies have brought the project to a virtual halt. Difficulties and misunderstandings exist on all sides: the TA has not prepared feasibility reports according to accepted standards; the Ministry does not agree with the planning process espoused by USAID, which uses feasibility studies as a key element. A gulf remains between USAID and PWWR on this issue.

The issue of cost-recovery has been brought to the forefront through a covenant in the Grant Agreement, but USAID has not provided adequate guidance for what is obviously a difficult and politically sensitive issue. The present tone of the dialogue between USAID and PWWR has not been conducive to resolving the issue. Major rethinking on the part of USAID is required before a resource mobilization program can progress. The covenant requirement, as it stands, will not be effective.

The basic requirements for developing a cost-recovery program have not yet been established. Such a program needs a reliable database on which to make informed decisions. The GOE first needs to know what the IIP improvement package will look like, what it will cost, what the benefits are, and who the beneficiaries will be. Without this information, the GOE will not be in a position to institute a cost-recovery program.

The TA contractor has a cost-recovery analysis underway. Available documentation was reviewed by the team and found to be useful. In addition, IIP staff are collecting information on farmers' ability to pay. These activities should be expanded to include other beneficiaries.

The recommended shift to cost sharing is based on a recognition that farmers are only one group that will benefit from IIP. Nearby villages and towns and the general population will also benefit from the program as designed. Cost sharing will require a careful analysis of who the real beneficiaries are and how they will benefit. *Cost recovery* has become an emotionally charged, confrontational term for both USAID and PWWR; a shift to *cost sharing* might defuse the issue and encourage a reopening of the stalemated dialogue.

A convincing case has not yet been made for proposed widespread mesqa improvements. Mesqa-improvement alternatives have been investigated during the feasibility phase, including low-level, unlined mesqas. However, only the expensive concrete-lined, high-level mesqa and buried pipeline mesqa have been recommended. No persuasive reason has been provided that justifies the recommendation.

The bidding process for constructing two pumping stations in Abbadi-Radissia is too far along to halt. This construction alone will require 25 percent of the $34 million available for construction at the $77 million funding level.

TA management has been notably unsuccessful in working with Egyptian counterparts to produce an integrated, productive project staff. Most TA team members operate separately from PWWR staff. With few exceptions, OJT has been ignored. This situation has led to low morale on both sides, resulting in low productivity. Little evidence suggests that TA management will provide satisfactory leadership in the future.

Communication between the Cairo central office and the directorates is a continuing problem. Despite monthly meetings, important information is sometimes not relayed and problems are sometimes not resolved.

The IAS has made significant progress in defining responsibilities, objectives, staffing, training, and field efforts in little over a year. However, it is too early to determine whether the service will be an effective instrument for improved water management practices at the field level. The team is concerned about differences in quality of operation among the directorate field teams. Although they were not included in the project design, demonstration mesqas are important in making a convincing case to both Ministry and farmers. Access to transportation is a serious problem for the field staff.

PWWR has now approved a policy of continuous flow with downstream controls at regulating structures and raised, lined, and buried pipeline mesqas. Project management supports single-point lifting and water scheduling among mesqa farmers as an extension of this policy. This program may be difficult to implement, given that farmers now have unrestricted access to water during the rotation of their mesqas. Ministry officials assume that a virtually unproven IAS can successfully manage this daunting assignment.

If the IAS is unable to fulfill these expectations, it may find its effectiveness undermined and its present support in the Ministry eroded. The IAS needs to be involved with farmers early in the process, bringing them into mesqa planning and providing them with an understanding of the consequences of the alternatives and a means to voice their concerns and preferences.

The monitoring of improvement costs and benefits is crucial to the cost-sharing and mesqa improvement programs, but there appears little likelihood that the Planning, Follow-up, and Evaluation (PF&E) Unit will ever provide the services that IIP requires. Unit staff have been involved in construction costing, however. There has been little participation of PWWR staff in the overly sophisticated System Analysis of Agricultural Development Alternatives (SAADA).

The training program is largely moribund, with the exception of IAS staff training. TA management has spent only 3 percent of the total $2.5 million training budget to date. In the 1990 work plan, it unrealistically proposes to spend the remaining $2.4 million in one year; however, it has virtually no management dedicated to handling any volume of training activities, aside from a junior engineer in the IAS.

Training requests in action memos are not followed through and deadlines are missed. Other IIP units have not taken advantage of training funds to upgrade staff for implementation requirements. Staff members are usually not consulted for their input about training needs. Area engineers have not complied with the terms of reference (TOR) by developing training programs for directorate staff. Temporary duty (TDY) trainers have been content-oriented and have not served as suitable models in training-of-trainer (TOT) courses. Facilitation skills are required on an ongoing basis to the project.

The IAS requires the understanding of PWWR officials both in Cairo and in the directorates. General directors need an opportunity to become

more familiar with the IAS concept and with the roles of WUAs. General directors (in the company of IAS technical staff from their directorates) should observe WUAs first-hand in other countries, particularly in South and Southeast Asia, which would move the program ahead faster.

The Grant Agreement covenant calling for development and issuance of appropriate decrees defining PWWR and MALR roles in mesqa improvement and irrigation on-farm development has been met to USAID's satisfaction. The relationship between PWWR and MALR is still at issue, even though MALR has provided large numbers of staff to IIP. Roughly half the IAS team is from MALR.

At a recent workshop, MALR and PWWR collaboration focused on USAID-assisted projects. A number of agreements were reached that involved joint work between MALR and PWWR staff. These activities have been delayed for lack of active participation by PWWR.

The USAID covenant requirement for staffing confuses multidisciplinary *team* with multidisciplinary *approach*. In fact, the IAS, which is largely staffed by engineers, is already employing an interdisciplinary approach in its training and other activities. Technical staff are being introduced to sociological, economic, and agronomic approaches for their work with water users. Sensitizing staff to other perspectives and developing a synthesized approach is proving to be useful for the IAS. There are other Ministry responsibilities, such as feasibility studies, that require non-engineering inputs and must continue to be emphasized.

3.1.4 Recommendations

Revision of Targets and Implementation Approach

- Immediately establish procedures leading to agreement on implementation priorities, operating procedures, and funding levels. The agreements (between USAID and HCC) should be documented in a Project Implementation Letter (PIL).

- Reduce the command size of this phase of IIP to be consistent with available funds. Concentrate all project activities in a smaller number of commands, and expand to other areas when the approach has been satisfactorily tried and if additional funds become available in later phases. Use this phase of IIP as an opportunity to work through the planning process to determine, test, and refine physical and institutional improvement packages.

Feasibility Studies

- USAID should revise PIL No. 102 according to the suggestions included in this report to resolve the feasibility study issue.

- The TA contractor should reanalyze the improvements proposed for IIP canal commands using internationally accepted standards for feasibility analyses.

- Procedures for preparing a feasibility study should be standardized as follows:

  To estimate construction costs:

  For mesqa alternatives, use typical representative areas to do engineering analyses and prepare cost estimates and to compute per-feddan costs for each mesqa alternative. Use per-feddan costs to determine cost estimates for improving unit command areas.

  To estimate operation and maintenance costs:

  Annual O&M costs vary depending on the mesqa alternative. Estimates should include differences in farmer associated costs, including labor for mesqa maintenance, pump maintenance and repairs, and operation costs such as energy and replacement of either single-lift or multiple-lift pumps. Differences in Ministry annual O&M for each mesqa alternative should also be considered.

  To estimate project benefits:

  Use survey crop yields as a basis for projecting without-project yields, including technological advances not project related.

The with-project yields are based on the same surveyed crop yields as the starting point; are projected into the future based on available survey and other research data; and use soils classifications and climatic conditions representative of the command area.

The without- and with-project benefit calculations should reflect yield and farmgate prices projected to a common time frame.

- PWWR should assign more staff for data collection, including a full-time senior engineer to work with each TA area engineer.

- Full gravity systems should be considered only where they presently exist.

Cost Recovery

- Defuse the cost-recovery issue. Initiate a policy dialogue on cost sharing rather than cost recovery, shifting the focus from extracting payment from farmers to determining appropriate and reasonable contributions for all parties.

- Proceed with the improvement program, with all construction costs paid by the GOE with USAID support. Do not ask farmers to pay anything at this time, but advise them that a cost-sharing program is under investigation.

- Institute a rigorous cost and benefit monitoring program that includes (1) realistic mesqa-improvement packages and their costs; (2) assessment of the benefits of system improvement based upon actual field-data collection following construction; (3) identification of beneficiaries, beyond the assumption that tail-enders will receive more water than before; and (4) recognition of explicit and hidden payments now made by farmers.

- Acquaint principal GOE officials with cost-sharing issues and initiatives in other countries by arranging study tours.

- Consider acquiring additional support from A.I.D./W, which is familiar with cost-recovery issues and programs in the region, to help USAID clarify its ongoing discussions with the GOE.

- Based on the above, develop a comprehensive cost-sharing program, including the phasing of dialogue and studies, field trials, data generation and analysis, and policy and legislation development, and rewrite the cost-recovery covenant to reflect this program and its intended results.

Mesqa Improvements

- Before implementing a major mesqa improvement program in all project directorates, demonstration mesqas should be developed that show there will be (1) economic merit beyond those savings that result from main delivery system improvements and landleveling, and (2) significant water savings.

- In view of the limited funds available and the large financial requirements of the Abbadi-Radissia pumping project, the Ministry and USAID may want to review again the priority assigned to this project in relation to other IIP command areas.

Management

- Resolve the ongoing issue of divisive TA management.

- Institute a program of collaborative work between the TA and Ministry staff in which joint work is rewarded rather than discouraged. The TA team and PWWR staff should share offices by technical area.

- Make all project work a joint product of PWWR staff and the TA team. Involve Ministry staff actively in the preparation of work plans and progress reports, encouraging their sharing in the design and authorship.

- Assign TDY staff a PWWR counterpart throughout their tours of duty. Reports should be prepared jointly to assure involvement of Egyptian staff. Have every TDY conduct a seminar or short course for relevant PWWR staff prior to departure and include this requirement as part of the TOR.
- Transform the monthly meetings between Cairo senior project management and the general directors into an opportunity to share information about implementation and to discuss and resolve outstanding issues.
- Link individual incentive) a mutually understood (and preferably mutually determined) series of deliverables and according to a reasonable schedule.

Irrigation Advisory Service

- Involve farmers actively in the planning for improvement of their mesqas by reviewing alternatives with them and by showing and discussing the designs prepared by PWWR engineers. Given PWWR policy and past performance, significant changes will have to be made to give farmers a real voice in the selection of improvements.
- Begin implementing a demonstration mesqa program for farmers immediately in Herz-Numaniya, and prepare for an expansion of the demonstrations into other directorates. Include as possible elements video documentation, field visits for a wide audience, testing and promotion of new technologies, and monitoring that leads to documented case studies for evaluating and refining the methods used.
- Discourage field groups from creating paper WUAs in order to meet their superiors' expectations of "head counts." This approach undermines the efforts to create sustainable WUAs.
- Approve planned IAS workshops in Egypt and off-shore to sensitize senior Cairo and directorate officials and thereby gain support from the Ministry's top echelon.

Training

- Prepare a realistic training program that takes into account staffing needs, appropriate means of training, and a volume of training that project staff can reasonably handle.
- Immediately assign a full-time Ministry staff person as training specialist. If the Ministry cannot secure the services of a qualified staff member, fill the position with a locally contracted professional at a competitive salary.
- Redraft the current training program in the work plan with the assistance of all TA team members and Ministry staff to reflect actual staff requirements. Area engineers should prepare a training program for directorate staff as stipulated in the Request for Technical Proposal (RFTP).
- Emphasize on-the-job training.
- Process action memos for a combined Colorado State University/Asian observation tour as soon as possible.
- Immediately process action memos for IAS workshops for senior PWWR officers and for general directors.
- Design an observation tour to Asian countries (perhaps the Philippines, Sri Lanka, and Nepal) for general directors and their technical staffs.

Monitoring and Evaluation

- Second staff from the WRC to work full time in the unit. In the absence of adequate staff, assign IIP's monitoring and analytical assessment functions to WRC.
- Demonstrate SAADA's utility and determine how PWWR staff will use it, or identify a less sophisticated but more realistic methodology for the same purpose.

PWWR-MALR Collaboration

- Resolve the issue concerning the wording of PIL No. 102 so that construction-cost reimbursement can be expedited.

- Determine means to gain MALR participation in landleveling efforts in improved commands.

- Resolve issues preventing PWWR from actively collaborating with MALR as agreed in the Technology Transfer Workshop.

Multidisciplinary Staffing

- Provide training for staff in areas where specialists are not available. Use IAS training and activities as a model.

3.1.5 Future Program and Funding Requirements

IIP funding has been reduced to $77 million from its original $106 million level. At the suggested increase to $88 million, TA will be extended to 1995 for a core team of team leader, administrator, economist, senior social scientist, two sociologists, and three field engineers. The four other engineers will leave in 1993. Additional funding is to be targeted largely for construction to expand the area that can be improved from 17 percent of the original total to roughly 25 percent. Motorcycles are to be purchased for use by every IAS field supervisor and agent. Training funds at $2.5 million should remain in the Morrison-Knudson Engineering, Inc. (MKE) contract for the present but be reassessed semiannually and reduced or removed if inactivity persists.

Appendix B

Personnel Attending Workshop

USAID - Personnel	POSITION/TITLE
Doug Clark	Associate Director for Agricultural Resources
William J. Carmack	Office Director (ILD)
David Smith	Project Officer
Mohamed Allam	Project Officer
G. Flynn Fuller	Project Officer
Carl Maxwell	Project Officer
Charles R. Houston	Senior Irrigation Engineer
Mohamed Mabrouk	Construction Engineer
Olfat Gamal	Project Support Specialist
Ali Khalifa	IMS Project Consultant

MKE/LBII - Personnel	
Rod Vissia	Team Leader
Robert Lowery	General Manager, Business
Adrian Hutchens	Economist
Carroll Hackbart	Irrigation Engineer
Jim McClung	Design Engineer
Max Lowdermilk	Sociologist
Mark Schiele	Area Engineer, Zagazig
Juan Gonzalez	Area Engineer, Damanhour
John Geter	Area Engineer, Tanta
Jim Schoof	Area Engineer, Fayoum
Ed Shinn	Sociologist, Minia
Tony Gillman	Area Engineer, Minia
Brice Boesch	Area Engineer, Minia
John Cloward	Area Engineer, Esna
Bob Dixon	Team Leader, PMP/CMP
Philip Goorian	MKE Economist, PMP/CMP

PWWR - Personnel	
Ahmed Mazen	Chairman Irrigation Dept.
Gamiel Mahmoud	1st Undersecretary of Planning Sector
Mohamed El Malkh	Undersecretary of Planning
Taha Abou El Dahab	Chairman of Monitoring Office

PWWR - Personnel (Cont.)	POSITION/TITLE
Mohamed Hassan Hammaad	1st Undersecretary of Irrigation (Upper Egypt)
Mohamed A. El Zeftawy	1st Undersecretary of Irrigation (Lower Egypt)
Salem Sayed Ahmed	Undersecretary/Project Director (IIP)
Hassan Shouman	General Director of Construction & Deputy Director
Ali Morsi Batt	General Director of Planning & Follow up
Ramses Bakhoum	General Director of Design
Essam Barakat	Director of IAS
Abdel Aty El Shinawy	Economist
Ali Kamal	Computer Specialist
Wadih Botrous	General Director, Damanhour
Mohamed Assal	General Director, Tanta
Essa Sayed	General Director, Zagazig
Samir Shoubair	General Director, Fayoum
Nabil Fawzy	General Director, Minia
Ahmed El Sayed	General Director, Esna
Galal Bedah	General Director of Irrigation (Gharbia)
Mohamed Abdel Aziz	General Director of Salahai Irrigation
Directorate	
Ibrahim Tanas	General Director of Irrigation (Beni Sweef)
Evan Krith	Consultant of Structure Replacement
Mostafa El Kashef	General Director of Preventative Maintenance
Abdel Raof Abu El Nour	Consultant/IIP (Minia)
Mohd K. Tuky	Structural Replacement Consultant/IIP (Zagazig)
Abdel Fattah Metawie	Senior Researcher (Water Research Center)
Facilitators	
Kathy Alison	Irrigation Support Project for Asia and the Near East (ISPAN)
Dee Hahn-Rollins	ISPAN
Support Staff	
Nabil Youssef	Administrator, MKE/LBII
Amani George	Secretary, MKE/LBII
Dahlia A. Fouad	Office Manager, Executive Business Services
Magdi Ahmed Fouad	Driver

Appendix C

Opening Panel Presentation

Remarks by Rod Vissia

1. Mission

Identify problems inhibiting full agricultural production in the 400,000 feddans of the Project Area

- Develop solutions to these studies
- Prepare Implementation plans for the solutions
- Implement the solutions
- Organize WUA for O&M of mesqas and for close coordination with PWWR for Water scheduling and Delivery.
- Propose policy and procedures for recovering certain costs of the program
- Develop capacity of PWWR to manage and conduct an IAS Program, feasibility studies, organization of Water Users and implementation of IIP program elements.

2. Roles

PWWR -

Responsible for IIP Implementation

MKE/LBII -

- Strengthen institutional capabilities of IIP staff to continue the-IIP process with minimized expatriate assistance.
- Assist PWWR in accomplishing project objectives.

USAID-

- Provide funds for improvement. Insure that U.S. interests are being met.
- Assist the Govt of Egypt and the Contractor to reach project goals.
- Spell out expectations clearly: (for project outputs and the approval process). Review & comment on project reports + outputs and approve implementation of project programs.

3. Major Accomplishments

- Implementation of an IAS Program that is, so far, operating well. Implementation of a Program to organize Water User Associations that is operating well.
- Completion of feasibility studies for 3 areas, approval of 3 of these studies by USAID and approval to begin construction of some elements in these 3 project areas.
- Several other feasibility studies nearing completion.

4. Priorities

- To identify the problems inhibiting full production in the Project Area, develop solutions to those problems and implement plans to correct the problems.
- Organize WUA's to assume the O&M of mesqas and take a more active role in coordinating with PWWR in the delivery & control of Water to these areas.
- Formation of IAS program that will endure into the future to assist WUA's in the proper management and control of water.
- Instill in the PWWR the importance of making feasibility studies and the ability to conduct such studies.
- Assist in developing policy and an implementation program for Cost Recovery.

5. Constraints

- Lack of a clear understanding between USAID and the Project concerning a reasonable and workable Feasibility Study criteria and approval process for implementation of programs and works identified in the feasibility studies.

- Lack of enough qualified staff & loss of trained staff.

- Lack of equipment (vehicles, engineering, laboratory, survey, computers etc.).

6. Vision

- If IIP is carried out properly, the improvement in the irrigation system and irrigation practices will lead to a considerable increase in agricultural production in Egypt.

- Assumption of more responsibility by water users through WUA's for water delivery and water scheduling, O&M and cost repayment.

Remarks by Joe Carmack

1. Mission of IIP

Eliminate water-related constraints to agricultural production and improve water use efficiency.

- Delivery system problems
- Water distribution
- Land leveling
- Salinity and water logging
- Irrigation systems in sandy soils
- On farm water/agronomic coordination
- System control/O&M

2. Roles

PWWR-
- Develop plans (feasibility studies)
- Develop on-farm programs (land leveling, irrigation system charges, etc)
- Staffing and organization
- IAS and WUA
- Cost recovery
- Design and construct

MKE/LBI-
- Assistance with planning, monitoring, implementation & cost recovery.
- Leadership in planning and new technologies and special studies.

USAID-
- Provide US-funded inputs
- Review and approve plans
- Monitor progress

3. Major Accomplishments

- Establishment of WUA's
- Feasibility studies
- IAS Established
- Socio-Economic Studies
- Planning Procedures

- Collaboration between TA & PWWR

4. Priorities

- Complete plan of work
- Establish clear planning procedures and responsibilities
- Adjust annual LOP plan to available funding
- Implement the plan of work
- Complete PWWR staffing
- Training
- Pilot area
- Complete planning and get implementation under way
- Cost Recovery

5. Constraints

- Agreement on purpose (water delivery project vs water related constraints)
- Agreement on role of PWWR specialists vs contract specialists.
- Agreement on feasibility study procedures.
- Development of a systematic planning process to be carried out by PWWR staff.
- Involvement of IAS and farmers in the process, beginning with definition of problems through O&M.
- Provide interdisciplinary staffing at the Directorate level.
- Feasibility studies not seen as a PWWR decision making process.
- Administrative problems.
- Overly optimistic schedules.

6. Vision

An interdisciplinary PWWR organization that:

- Identifies all water-related problems at the farm level and then solves the problems in a professional, systematic manner.
- Involves farmers as partners in the planning, implementation, and O&M of the system, first at the mesqa level and then at higher levels.
- Generates funding without being completely dependant on the national treasury.
- Coordinates water inputs with agronomic inputs.
- Gets things done promptly.

Appendix D

Irrigation Advisory Service Panel

Panel Members: Hassan Shouman
Essam Barakat
Abdel Raof Abu El Nour

Remarks of HASSAN SHOUMAN

Egyptian Water User Project (EWUP) Findings (1984):

- Farmers should be involved whenever any proposed water delivery system is considered.

- Farmers should be encouraged to become involved in the management of water delivery at the mesqa level for:

  - efficient land leveling
  - distributary canal and mesqa renovations
  - water scheduling
  - mesqa maintenance

USAID-MPWWR-(RIIP results and suggestions):

- Operational water user associations should be organized in all IIP areas to provide farmer input during the renovation process.

  These water user associations (WUAs) would:

  - communicate local concerns to Government officials
  - coordinate scheduling on mesqas
  - perform maintenance and resolve local disputes

WHAT IS A WUA?

A WUA is a private organization owned, controlled and operated by member users for their benefit in improving water delivery, water use and other organizational efforts related to water to increase their production possibilities.

Benefits of WUAs

- Increases saving of scarce water
- Greater agriculture production

- Improved quality of crops and income
- Improved distribution of water and equity
- Fewer conflicts between users and suppliers of water
- Increased resource mobilization
- Increased system O & M
- Sustainability of improvement programs
- Less administrative problems for engineers
- Increased sense of ownership and responsibility of water users

When is a WUA considered to be established?

- When the water users (WU) have defined their roles and responsibilities and have selected their leader.

- When the WU leaders are assisting in appropriate decision making regarding the improvement activities.

- When WUs are meeting on a regular basis and deciding their own issues.

- When WU leaders are involved in regular dialogue with engineers in the planning, designing and implementing of mesqa improvements.

What is the Irrigation Advisory Service (IAS)?

The IAS is an organizational unit of the MPWWR which provides three major type of services to WUA's formed around hydrological units.

- Improvement of water delivery
- Improvement of water use
- Building sustainable WUA's around micro and branch canal system hydrological units

Remarks of ESSAM BARAKAT

There is a need for the creation of high level support to ensure institutionalization of IAS/WUA.

The IAS is a link from the IIP to farmers, and also a link to the village banks, cooperatives and other Ministry of Agriculture activities like land leveling, etc.

Critical issues being faced by IAS include:

- Need for legal basis for WUAs
- Need for clarification of relationship between IAS and Extension Service (MOA)
- Need for future permanent home for IAS
- Need for funds to support IAS in the future
- Need for decision on whether to federate WUAs and at what levels of the command areas

Remarks of ABDEL RAOF ABU EL NOUR

The IAS is facing the following problems:

- LACK of trained IAS staff
- LACK of training for IAS staff
- LACK of transportation, equipment, funds and supplies, etc
- Transfer of trained IAS staff away from project after they have been trained
- WUAs are illegal organization.
- New General Directors & Engineers at IIP who transferred recently have no cle & complete idea of IAS & WUAs.
- LACK of coordination between IAS staff, extension staff and other organizations wh have relationship with irrigation and agricultural processes, especially at the fiel level.

Appendix E

A Conceptual Analysis of Irrigation Cost Recovery in Egypt
by Dr. Mohamed Allam

1.Background

The irrigation distribution system in Egypt consists of the High Aswan Dam(HAD), barrages, regulators, pump stations,and canals of various orders. Water of the Nile River, the main irrigation source in Egypt, is stored in Lake Nasser (the reservoir associated with the HAD). The dam releases the irrigation water to the river to be diverted by a series of barrages into the main irrigation canals, and pump stations to secondary canals. Water from the secondary canals is diverted by small regulators and/or pump stations to branch canals feeding Mesqas, from which farmers pump water to Marwas for irrigating their fields.

The Government of Egypt, represented by Ministry of Public Works and Water Resources (MPWWR), is responsible for the operation, rehabilitation, and maintenance of the whole irrigation system. The farmers are required to maintain only their Mesqas. With the limited budget of the Ministry, the irrigation system is not being adequately maintained. As a result, many irrigation structures have deteriorated. In 1982, the Government started a long-term program for structure replacement, preventive maintenance, and irrigation improvement with a financial support from USAID as well as other donor organizations. The issues of sustainablity and generation of revolving funds for extending the capital improvement to the various parts of Egypt are now being addressed by both the Government and the donor organizations. Apparently, a cost recovery mechanism is a key solution for these two critical issues.

Establishment of a cost recovery scheme for such a complex irrigation system is a difficult task as many problems are involved. Among these problems are identification of the beneficiaries of the system and fair cost allocation among them. In a recent study by Allam (1987), two cost allocation models were developed to estimate the irrigation water cost at the intakes of the secondary canals of the Nile Valley. The first model was to allocate cost of the HAD among the different use sectors (irrigation, hydropower, and navigation). The second model was to allocate cost of barrages and regulators among the various canal command areas. In this study, the values of capital and O&M costs

as provided by MPWWR, were utilized.The annual irrigation water cost was found within the range of L.E 10-20/1000 m**3,Which is about L.E 80-160/feddan. These cost estimates would be higher if more adequate maintenance budget was considered. The cost at the fields should be higher than this estimate as cost of irrigation structures and pump stations of the branch canals, and cost of water lifting from Mesqas to Marwas should be considered. Currently, farmers are getting the irrigation water free. They are only required to lift the irrigation water from Mesqas up to their fields.

The purpose of this discussion paper is to help analyzing the cost recovery issues. Also objectives of irrigation cost recovery are discussed, mechanism for cost recovery is proposed, and finally unresolved problems associated with cost recovery are addressed.

2. OBJECTIVES

In literature there are numerous objectives of irrigation cost recovery. The focus of this paper however is only on two main objectives. These objectives are:

1.SUSTAINABLITY, which can be achieved through efficient operation and maintenance of the irrigation system. Generation of funds to operate and maintain the system.

2.CREATION OF REVOLVING FUNDS FOR CAPITAL IMPROVEMENT.

These two objectives can be met only if a full cost recovery program is implemented. This is a very difficult goal to achieve not only in Egypt but also in most parts of the world. In the following section, a three-phase cost recovery plan is presented. Under this plan, the total O&M costs and a proportion of the capital cost will be recovered.

3. A Cost Recovery Scheme

3.1 Phase No.1 - Mesqa Level

Cost of irrigation system rehabilitation and irrigation improvement may be classified into two components:1. Capital and O&M costs of Mesqa improvement and associated pumping facilities,and 2. Cost of structure replacement and preventive maintenance for branch and secondary canals. The main beneficiaries of irrigation system improvement are the farmers. The Government, representing the other sectors of the society,

may be thought off as another beneficiary of this program given that the water saved due to the expected reduction in the conveyance losses and more efficient water allocation, may be used for land reclamation minicipal and industrial uses. Accordingly The irrigation cost should be allocated among the farmers and the Government. Apparently, however, via any rational cost allocation procedure most of the cost will be allocated to the farmers. Moreover, the farmers are required at least to pay their share of the O&M costs of conveying the irrigation water from the HAD down to the secondary canals. In this case, it may be better to have farmers involved in the operation of the irrigation system at least up to the secondary canal level. Farmers involvement should not be from the technical but from the planning side. But according to the Egyptian law, farmers are responsible only for the O&M costs of Mesqas. The Government on the other hand believes that, in case of Mesqa improvement, farmers should afford a major portion of the capital cost. The other costs associated with branch and secondary canals are being afforded by the Government.

In establishing a charging mechanism for Mesqa improvement, a differentiation should be made between capital cost and O&M costs. Charges for the capital cost may be collected from the farmers, via a mechanism similar to the collection of drainage installation cost, back to the central treasury or to be set under a separate account as revolving funds for capital improvements. Charges for O&M on the other hand may be collected by the Water Users Associations (WUAs) to be deposited in the Village Bank for covering the O&M costs. In order to open an account in the Village Bank, the WUAs should be registered by the Ministry of Social Affairs. The MPWWR should be responsible for monitoring the O&M conditions of Mesqas and have the legal capability of setting charges against WUAs if Mesqas are found in poor operational and/or maintenance conditions.

3.2 Phase No.2

At a later stage (timing is a decision making process), the cost recovery program should be extended to account for structure replacement, preventive maintenance, and irrigation improvement costs up to secondary canals level (command areas are within the range of 10,000 to 100,000 feddans). Farmers will be charged for the O&M costs as well as a proportion of the capital cost. It is proposed here to establish an account under the MPWWR supervision through which the collected

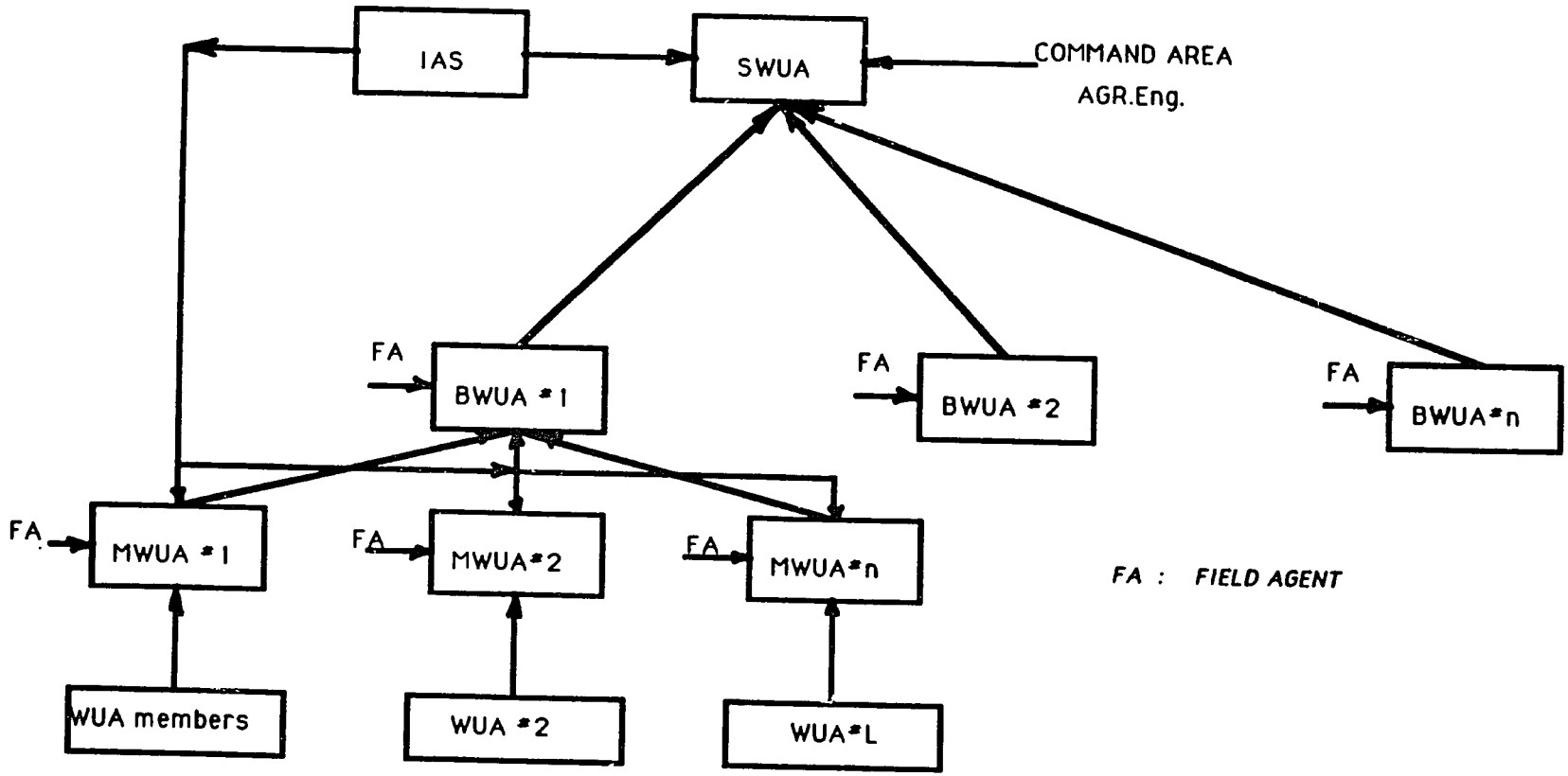


Fig.#1 A Schematic Diagram for the Proposed Organizational Structure of WUA's

charges can be used for O&M and capital improvement. It will be difficult from technical and organizational points of view to leave the operations and maintenance processes to the WUAs. In the long range perhaps O&M could be turned over to water groups. It will be more appropriate to continue the role of the MPWWR of operating and maintaining the branch and secondary canals. Involvement of WUAs in the planning process (such as water allocation planning, maintenance plan,...etc) is probably required.

For efficient participation in the planning process at the branch and secondary canals levels, it is proposed here to organize the WUAs in three levels hierarchically. More specifically, it is to form three boards for WUAs, as shown in fig.1. The first board is at the Mesqa level,and will be of 5-10 members (based on size of the Mesqa); 3-8 farmers elected by the WUA members, a staff of the IAS, and the field agent. The elected members should be representing the three reaches of the Mesqa; head, middle, and tail. This condition is to insure that all groups of the WUA will be represented in the board. The second board (BWUA) is at the branch canals level. The members of this board will be: a representative of each MWUA, a representative of the IAS, and the field agent. The third board (SWUA) is at the secondary canals level with members representing the IAS, and each BWUA in addition to the senior agricultural engineer of the area.

3.3 Phase No.3

In this phase (timing is a decision making process), farmers will be charged for the O&M costs of the irrigation system from the HAD down to the main canals level. Farmers will be charged for a proportion of the capital (replacement) cost. The collected charges will be deposited in the MPWWR account which is proposed to be established in phase No.2, for O&M and capital improvement.

A summary of this tree-phase plan is provided in table 1.

4. ISSUES

This cost recovery plan can not be implemented unless several issues are resolved. such issues are :

Table 1. A summary of the Proposd Three - Phase Plan For Irrigation Cost Recovery IN Egypt

Phase No:	Charges	Actions	Timing
1	• O&M cost of Mesqa and a proportion of the capital improvment cost	• open a WUA account in the Village Bank for the O&M budget	• probably one year after Mesqa improvement
2	• O&M cost of branch and secondary canals, and a proportion of Structur Replacement Cost	• Hierarchical organizational structure of WUAs • Establish an account under MPWWR for O&M and capital improvement budget	• To be decided
3	• O&M cost and a proportion of replacement cost of the irrigation system starting from the HAD down to the main canals	• Deposit the collected charges in the MPWWR account for O&M and capital improvement established in Phase NO:2	• To be decided

1. Social and political implications of irrigation cost recovery.

2. Willings and capacity of farmers to pay for the irrigation cost. The present direct and indirect charges and taxes on the farmers should be considered in the analysis of this issue.

3.Timing and duration of each cost recovery phase.

4. Legal and institutional procedures to establish a MPWWR account for O&M and capital improvement.

5. The need for demonstrating irrigation improvement sites. Size and locations of these sites

6. Cost recovery versus level of WUAs involvement in system operation and planning.

7.Official registration of the WUAs, and their legal support and capacity to collect payments and to set charges against farmers violations to irrigation or payments rules.

8. IAS and WUAs coordination.

9.Allocation of capital improvement and/or replacement cost among the Government and farmers.

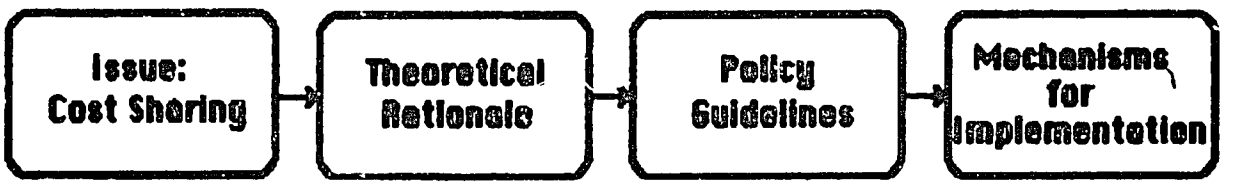
10. Possible conflicts between WUAs and the agricultural cooperatives.

Appendix F

Theoretical Rationale for Sharing Irrigation System Costs
(Draft for Review Only)

CSTSHR2
10 Nov 90
Adrian Hutchens, IIP

The Ministry of Public Works and Water Resources (MPWWR), in conjunction with USAID and World Bank, is now in the process of formulating a fair and equitable policy for sharing costs associated with the development, operation, and maintenance of the Egyptian irrigation system and establishing a mechanism for implementing that policy. A conventional approach to carrying out such an effort is illustrated in the following simplified diagram which consists of sequentially defining the issue, developing a theoretical rationale on which policy can be based, defining the policy guidelines under which implementation will be executed, and establishing the mechanism for implementation.



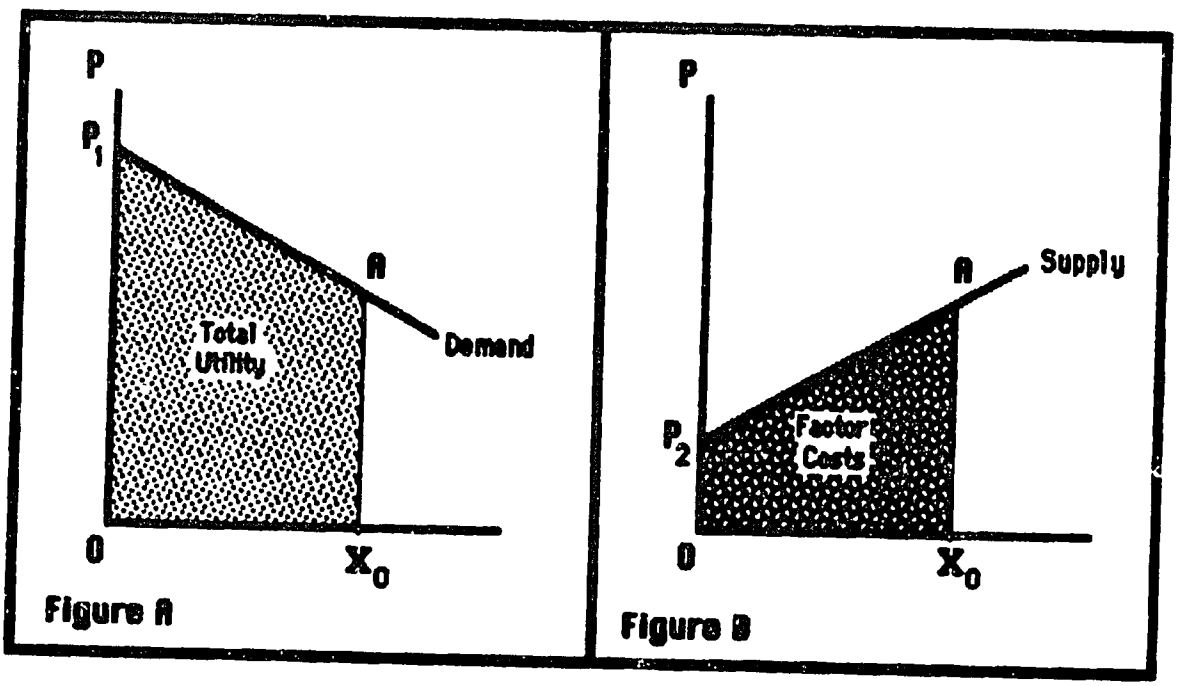
The approach used, to date, has followed a somewhat different pattern, skipping from the issue all the way to attempting to develop a mechanism for implementation. The issue has been well defined although there has been considerable uncertainty regarding appropriate terminology with the initial descriptive term being "cost recovery", followed briefly by "cost sharing", more recently by "financial requirements". (This paper uses the term "cost sharing" simply because it implies more of a partnership relation between farmers and MPWWR.) Much work has been completed on describing, in a general sense, alternative mechanisms for implementation and an intensive effort has been initiated to develop a specific mechanism for actual application. However, these efforts have been handicapped by the fact that there is not a clearly established policy on the issue, possibly because there has been no theoretical rationale on which to base policy.

The theoretical rationale developed here is based on the contention that sharing costs in proportion to benefits received between farmers and the rest

of society, as represented by MPWWR, will be fair, equitable, and effective in sustaining the operational integrity of the irrigation system. The task, then, is to determine the appropriate proportioning of benefits. This can be done using the concepts of consumers' and producers' surpluses. Consumers' and producers' surpluses are market determined phenomena resulting from the interaction of supply and demand. Figures A, B, C, and D illustrate the roles of demand and supply functions in the theoretical derivation of consumers' and producers' surpluses, and show the proportioning of each as a result of market interaction.

Economic Theory

Figure A presents a demand curve and the total utility derived by consumers in the consumption of quantity X_0. The negative slope of the demand curve is derived from the definition of demand, which states that for any commodity that can be purchased in a market, the quantity demanded in a given period of time varies inversely with the price, other things equal. The demand curve consists of the locus of points of marginal utility associated with each incremental unit of a commodity consumed. Consequently, total utility is the integral represented by the area under the demand curve.



The area under the demand curve within the points $0,P_1$, A, and X_0 represents the maximum amount consumers would be willing to pay for the consumption of X_0 units of the commodity rather than go without it. This maximum willingness to pay reflects the total utility or benefit to the consumer. However, resources were expended to produce that output and the value of those expended resources must be deducted from the total benefit. Figure B illustrates the cost of resources (factors of production) required to produce X_0. The supply curve represents the locus of marginal cost associated with producing each increment of commodity X. The integral of that function, represented by the area under the supply curve delineated by points $0,P_2$, A, and X_0, is the total cost of the resources required to produce X_0. This cost represents the minimum amount that the producer will accept for X_0 units and, therefore, the minimum amount that the consumer must pay.

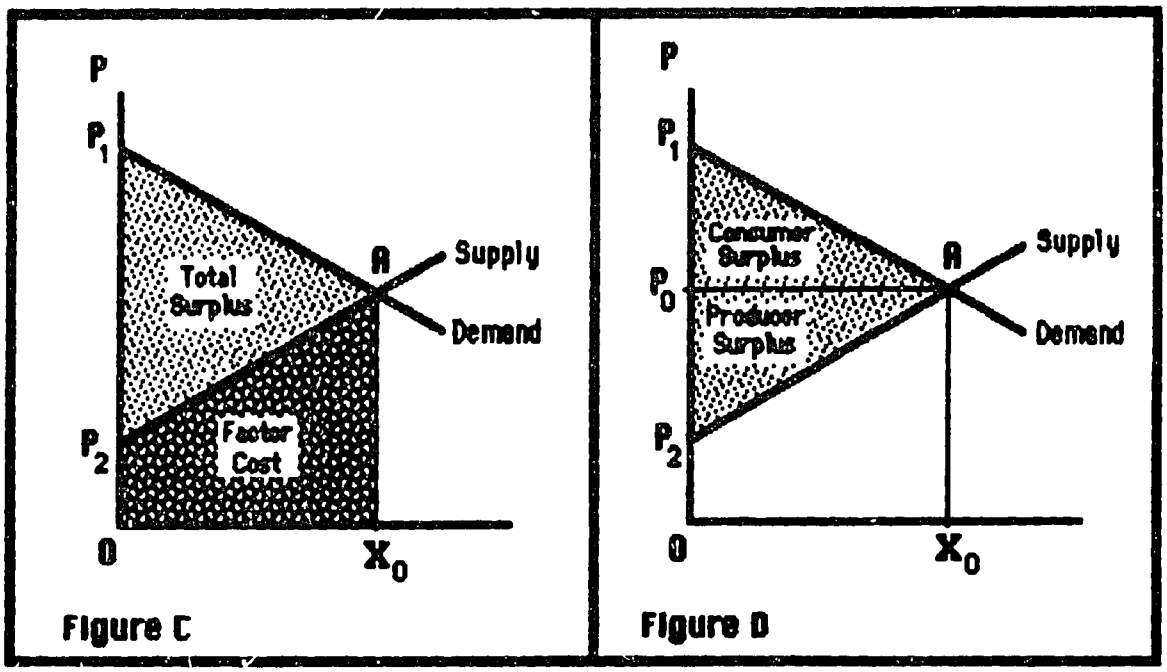


Figure C presents the results of superimposing Figure B onto Figure A. The total utility or benefit illustrated in Figure A minus the total factor cost in Figure B yields the total surplus net of resource costs delineated by P_2, P_1, A. This, then, represents the difference between the maximum the consumer would be willing to pay rather than go without and the minimum he must pay in order to cover costs of production.

The crucial issue of how this surplus is shared or proportioned between producers and consumers is determined by the interaction of supply and demand in the market to determine the market price, which is illustrated in Figure D. The area 0, P_0, A, X_0, represents the amount that the consumer actually pays and, also, the amount that the producer actually receives. Therefore, the price line P_0, A, divides the total surplus into the amount the consumer would have been willing to pay, but did not have to, (consumers' surplus) and the amount in excess of what the producer would have been willing to accept (producers' surplus). **Costs shared in proportion to producers' and consumers' surpluses will be shared in proportion to benefits received.**

A theoretical demonstration that costs shared in proportion to producers' and consumers' surpluses assures that costs will be shared in proportion to benefits received has no practical value unless a reasonable determination of the actual value of producers' and consumers' surpluses can be made. Fortunately, there has been much mathematical modeling work done in Egypt in this area on which we can rely.

Estimation of Consumers' and Producers' Surpluses

Output from the Egyptian Agricultural Sector Model (EASM) was used to derive estimates of consumers' and producers' surpluses under both financial and economic (free market) prices. EASM, originally called the Agro-Economic Model, was developed by the Water Master Plan (WMP) component of MPWWR in conjunction with the World Bank. The model was updated by WMP in 1986 and provided to the Undersecretary for Agricultural Economics and Statistics, where it was again updated and refined to address policy questions concerning decontrol of the agricultural sector. A run of this refined version (EASM89) derived the following estimates of producers' and consumers' surpluses:

	Base Case (1986)		Free Market	
Consumers' surplus	10067	55	6767	32
Producers' surplus	8236	45	14662	68
Total surplus	18303	100%	21449	100%

This shows that under 1986 financial price conditions, i.e., actual price controls and subsidies, consumers realized 55% and producers 45% of the "surplus value" in the agricultural sector. Under free market conditions, i.e., elimination of price, area and procurement controls, consumption subsidies, input subsidies and trade barriers, the proportions were estimated to be 32% consumers' surplus and 68% producers' surplus.

Note: It is recognized that the exact correspondence between the area under the demand curve and the willingness to pay only holds in the special case where the income elasticity of demand is zero. If the consumer actually has to pay the alternative prices for each unit of output as reflected in the demand curve, it would reduce the amount of income remaining to purchase successive units and thus reduce the subsequent quantities the consumer would be willing to purchase. Therefore, the area under the demand curve overestimates the total utility. However, Freeman points out that "even when these conditions are not met, these measures are close approximations and can be used for policy evaluation."(1) Since policy is precisely the issue we are dealing with and our concern is more with the relative proportioning of surpluses (benefits) between consumers (the general public as represented by MPWWR) and producers (farmers) than we are with the absolute magnitude of those benefits, any deviation resulting from income elasticity not equaling zero is considered negligible.

Comparison of EASM Output and Saidiya Feasibility Study Results

No cost sharing formula has been established for any of the IIP study areas; however, merely for illustrative purposes, an example of the results of a hypothetical formula where MPWWR would cover all costs of the main system and the farmers would cover all costs on private land, i.e., capital costs as well as operational and maintenance cost of all mesqa and on-farm improvements was presented in the Supplemental Feasibility Report for Saidiya (UCA 1,4 &5).

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(1) Freeman, A. Myrick III, *Intermediate Microeconomic Analysis*, Harper Row, New York, 1983.

The example cost sharing scheme presented in the Saidiya Supplemental Feasibility Report did not take into account the timing of cost occurrences. Table 1 presents the distribution of costs between MPWWR and the farmers using a 12% discount rate to take into consideration the time that costs occur. Tables 2 through 5 present the assignment of costs between MPWWR and farmers by specific cost item which constitute the data base for the development of Table 1.

In addition to the assignment of costs between MPWWR and the farmers, Table 1 reflect the results of three adjustments to the Feasibility Report, the net results of which bring the project from being barely feasible economically and very marginal financially to being quite strong on both counts:

(1) The drainage improvement program for Saidiya is scheduled to be formulated, but not implemented, during this 5-year plan so, instead of costing it to occur during years 2 and 3 of this 5-year plan, it is uniformly programmed for implementation from year 6 through year 20.

(2) Since the drainage program is delayed from the schedule in the Feasibility Report, the 10% of the project area that has a moderate soil salinity condition was assumed to have no increase in yields due to project improvements; therefore, benefits were reduced 10%. This is a very severe assumption.

(3) Water saved as a result of project improvements was presumed to be worth at least what farmers were willing to pay for it. It is quite evident that farmers are willing to pay at least the cost of pumping from the mesqas to get water; therefore, that value was assigned to the water saved and added to the annual benefits.

The results in Table 1 show project costs being distributed between MPWWR and the farmers in about a 30% to 70% ratio, respectively. Assuming farmers paid a constant annual equivalent cost based on 12% interest over a 30 year period, the annual cost would be about LE 170 per feddan. At zero interest, the annual cost would be about LE 87 per feddan. In either case, these values are well within the range of financial benefits the project would provide the farmer which are calculated to be approximately LE 390 per feddan (Table 5-7, Feasibility Report).

The 30% to 70% split in cost between the MPWWR and the farmers is quite close to what the EASM model indicates the split to be in consumers' and producers' surpluses under free market conditions. However, the farmer is not functioning under free market conditions. This formula for cost sharing would certainly be unfair to the farmers under the EASM base-case conditions of 1986. However, price controls and quotas that have benefited the consumer at the expense of the producer have been relaxed considerably in recent years and the expected trend is for that to continue toward free market conditions.

One basis for policy that seems reasonable would be to adopt a phased cost sharing formula that would reflect current controlled economy conditions with adjustments tied to phasing out of price controls and quotas that have placed a financial burden on the farmer. The cost sharing (financial requirements) investigation currently under way could include an update of EASM specifically address estimating consumers' and producers' surpluses under current conditions and for planned adjustments in price controls subsidies, and quotas.

Table 1: DISTRIBUTION OF SAIDIYA COSTS BETWEEN MPWWR AND FARMERS
(ALTERNATIVE #1, RAISED LINED MESQA)

	MPWWR Costs			Farmer Costs					
Year	Capital Costs	Op., Maint. Repl& Fuel	Total	Capital Costs	Farm Improve	Replcmnt	Op., Maint. & Fuel	Total	Grand Total
1	724	0.00	724.00	0	45.77		0	45.77	769.77
2	1884	10.77	1894.77	5489	32.90		0	5521.90	7416.67
3	1771	30.22	1801.22	5489	32.90		46.86	5568.76	7369.98
4	611	49.79	660.79	0	32.90		114.29	147.19	807.98
5		61.63	61.63		32.90		139.59	172.49	234.12
6		78.08	78.08		45.77		164.89	210.66	288.74
7		110.21	110.21		32.90		189.75	222.65	332.86
8		94.36	94.36		32.90		189.75	222.65	317.01
9		114.32	114.32		32.90		189.75	222.65	336.97
10		84.07	84.07		32.90	276	189.75	498.65	582.72
11		114.00	114.00		45.77	276	189.75	511.52	625.52
12		114.00	114.00		32.90		189.75	222.65	336.65
13		114.00	114.00		32.90		189.75	222.65	336.65
14		114.00	114.00		32.90		189 75	222.65	336.65
15		114.00	114.00		32.90		189 75	222.65	336.65
16		114.00	114.00		45.77		189.75	235.52	349.52
17		114.00	114 00		32.90		189 75	222 65	336.65
18		114.00	114 00		32.90	276	189 75	498.65	612.65
19		114 00	114 00		32.90	276	189.75	498.65	612.65
20		114 00	114 00		32.90		189 75	222 65	336.65
21		114.00	114.00		45.77		189.75	235.52	349.52
22		114 00	114 00		32.90		189 75	222.65	336 65
23		114.00	114.00		32.90		189 75	222.65	336.65
24		114.00	114.00		32.90		189.75	222.65	336.65
25		114.00	114.00		32.90		189.75	222.65	336.65
26		114.00	114.00		45.77	276	189.75	511.52	625 52
27		114.00	114.00		32.90	276	189.75	498.65	612.65
28		114.00	114.00		32.90		189.75	222.65	336.65
29		114.00	114.00		32.90		189.75	222.65	336.65
30		114.00	114.00		32.90		189 75	222.65	336.65
NPV at 12%int			4363.90	8282.76	290.69	1134.75	1017.06	9854.10	14217.99
ANNUAL EQUIV. at 12% int.			541.75	1028.25	36.09	140.87	126.26	1223 32	1765.07
PERCENT OF TOTAL			30.7					69.3	100.0
Cost per feddan (LE)			75.7	143.6	5.0	19.7	17.6	170.9	246.5
NPV at 0% int.			7903.45	10978.00	1064.22	1656.00	5019.63	18717.85	26621.30
ANNUAL EQUIV at 0% int			263.45	365.93	35.47	55 20	167 32	623.93	887 38
PERCENT OF TOTAL			29 7					70.3	100 0
Cost per feddan			36 8	51 !	5.0	- -	23.4	87.1	123.9
Net benefit per feddan (Table 5-7, Feasibility Report)								390	

Table 2: ESTIMATE OF TOTAL CAPITAL COSTS -- SAIDIYA COMMAND AREA, ALTERNATIVE # 1

Cost Item	UCA 1					UCA 4 & 5					UCA 1, 4 & 5				
	Total	Annual Cost Distribution				Total	Annual Cost Distribution				Total	Annual Cost Distribution			
		1	2	3	4		1	2	3	4		1	2	3	4
MPWWR Costs															
IRRIGATION AND DRAINAGE SYSTEM															
Canal control structures	691	115	230	230	115	217	36	72	72	36	908	151	302	302	151
Other structures	130	22	43	43	22	77	13	26	26	13	207	35	69	69	35
Canal improvements	0	0	0	0	0	1226	204	409	409	204	1226	204	409	409	204
Mesqa offtakes	278	46	93	93	46	225	38	75	75	38	503	84	168	168	84
Direct offtakes (gravities)	41	7	14	14	7	48	8	16	16	8	89	15	30	30	15
SUPPLEMENTARY WATER SUPPLY															
Drainage re-use															
Pumping plant	0	0	0	0	0	172	86	86	0	0	172	86	86	0	0
Civil works	0	0	0	0	0	10	5	5	0	0	10	5	5	0	0
Land acquisition	0	0	0	0	0	4	2	2	0	0	4	2	2	0	0
OPERATIONAL IMPROVEMENTS															
General improvements	47	8	16	16	8	47	8	16	16	8	94	16	32	32	16
Sub-total	1187	198	396	396	198	2026	400	707	614	307	3213	598	1103	1010	505
Contingencies (10%)	119	20	40	40	20	203	40	71	61	31	321	60	110	101	51
Sub-total	1306	218	436	436	218	2229	440	778	675	338	3534	658	1213	1111	556
Engineering & Admin. (IAS)(10%)	131	22	44	44	22	223	44	78	68	34	353	66	121	111	56
Eng & Admin (IAS Mesqa)	373	0	187	187	0	725	0	362	362	0	1098	0	549	549	0
TOTAL	1436	240	479	479	240	2451	484	855	743	371	3888	724	1335	1222	611
TOTAL (Including IAS Mesqa)	1809	240	666	666	240	3176	484	1218	1105	371	4986	724	1884	1771	611
Farmer Costs															
MESQA IMPROVEMENTS															
Channel works	1537	0	769	769	0	2898	0	1449	1449	0	4435	0	2218	2218	0
Structures	535	0	267	267	0	436	0	218	218	0	971	0	485	485	0
Gravities	137	0	69	69	0	448	0	224	224	0	585	0	293	293	0
Pumping plant	214	0	107	107	0	552	0	276	276	0	766	0	383	383	0
Field drainage	968	0	484	484	0	2255	0	1127	1127	0	3223	0	1611	1611	0
Sub-total	3391	0	1696	1696	0	6589	0	3294	3294	0	9980	0	4990	4990	0
Contingencies (10%)	339	0	170	170	0	659	0	329	329	0	998	0	499	499	0
Sub-total	3730	0	1866	1866	0	7248	0	3623	3623	0	10978	0	5489	5489	0
Engineering & Admin (10%)	373	0	187	187	0	725	0	362	362	0	1098	0	549	549	0
TOTAL	4103	0	2052	2052	0	7973	0	3986	3986	0	12076	0	6038	6038	0
TOTAL (Excl Eng & Admin)(IAS)	3730	0	1866	1866	0	7248	0	3623	3623	0	10978	0	5489	5489	0
GRAND TOTAL	5539	240	2531	2531	240	10424	484	4841	4729	371	15964	724	7373	7250	611

Table 3: ESTIMATE OF TOTAL OPERATION, MAINTENANCE, & REPLACEMENT COSTS -- SAIDIYA COMMAND AREA, ALTERNATEVE # 1

Cost Item	Total	Annual Cost Distribution for UCA #1										
		1	2	3	4	5	6	7	8	9	10	11-30
HPWWR Costs												
IRRIGATION AND DRAINAGE SYSTEM												
Staff	2.09	0.0	0.0	0.4	0.8	1.3	1.7	2.1	2.1	2.1	2.1	2.1
System maintenance	8.20	0.0	0.0	1.6	3.3	4.9	6.6	8.2	8.2	8.2	8.2	8.2
Replacement	2.16	0.0	0.0	0.0	0.0	0.0	1.1	1.1	0.0	0.0	0.0	0.0
SUPPLEMENTARY WATER SUPPLY												
Power	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Staff	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spares and maintenance	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Replacements	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total	12.45	0.0	0.0	2.0	4.1	6.2	9.4	11.4	10.3	10.3	10.3	10.3
Contingencies (10%)	1.25	0.0	0.0	0.2	0.4	0.6	0.9	1.1	1.0	1.0	1.0	1.0
Sub-total	13.70	0.0	0.0	2.2	4.5	6.8	10.3	12.5	11.3	11.3	11.3	11.3
Engineering & Admin. (10%)	1.37	0.0	0.0	0.2	0.5	0.7	1.0	1.3	1.1	1.1	1.1	1.1
Eng & Admin. (IAS Measures)	5.68	0.00	0.00	1.39	3.43	4.20	4.97	5.68	5.68	5.68	5.68	5.68
TOTAL	15.06	0.0	0.0	2.4	5.0	7.5	11.4	13.8	12.5	12.5	12.5	12.5
TOTAL (Incl IAS Measures)	20.75	0.00	0.00	3.81	8.39	11.70	16.35	19.47	18.14	18.14	18.14	18.14
Farmer Costs												
MESQA IMPROVEMENTS												
Staff (pump operation)	15.14	0.0	0.0	5.0	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1
System maint. & replacement	34.40	0.0	0.0	6.9	14.0	21.0	28.0	34.4	34.4	34.4	34.4	34.4
Lubrication	2.13	0.0	0.0	0.7	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Sub-total	51.67	0	0	12.6	31.2	38.2	45.2	51.6	51.6	51.6	51.6	51.6
Contingencies (10%)	5.17	0	0	1	3	4	5	5	5	5	5	5
Sub-total	56.84	0	0	14	34	42	50	57	57	57	57	57
Eng & Admin. (10%)(IAS)	5.68	0	0	1	3	4	5	6	6	6	6	6
TOTAL	62.52	0	0	15	38	46	55	62	62	62	62	62
TOTAL (Excl Eng & Admin)(IAS)	56.84	0.00	0.00	13.86	34.32	42.02	49.72	56.76	56.76	56.76	56.76	56.76
GRAND TOTAL	77.59	0.00	0.00	17.67	42.71	53.72	66.07	76.23	74.90	74.90	74.90	74.90

Table 4: ESTIMATE OF TOTAL OPERATION, MAINTENANCE, & REPLACEMENT COSTS -- SAIDIYA COMMAND AREA, ALTERNATIVE # 1

Cost Item	Total	Annual Cost Distribution for UCA #4 & 5										
		1	2	3	4	5	6	7	8	9	10	11-30
HPWWR Costs												
IRRIGATION AND DRAINAGE SYSTEM												
Staff	4.89	0.0	0.0	1.0	2.0	2.9	3.9	4.9	4.9	4.9	4.9	4.9
System maintenance	2.94	0.0	0.0	0.6	1.2	1.8	2.4	2.9	2.9	2.9	2.9	2.9
Replacement	5.04	0.0	0.0	0.0	0.0	0.0	2.5	2.5	0.0	0.0	0.0	0.0
SUPPLEMENTARY WATER SUPPLY												
Power	15.55	0.0	5.6	11.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	15.5
Staff	5.65	0.0	2.3	4.5	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
Spares and maintenance	14.20	0.0	1.0	2.0	2.7	6.8	11.0	14.0	14.0	14.0	14.0	14.2
Replacements	25.00	0.0	0.0	0.0	0.0	0.0	0.0	18.0	8.5	25.0	0.0	25.0
Sub-total	73.27	0.0	8.9	19.1	27.6	33.2	41.5	64.0	52.0	68.5	43.5	66.2
Contingencies (10%)	7.33	0.0	0.9	1.9	2.8	3.3	4.2	6.4	5.2	6.9	4.4	6.6
Sub-total	80.60	0.0	9.8	21.0	30.4	36.5	45.7	70.4	57.2	75.4	47.9	73.1
Eng & Admin. (10%)(IAS)	8.06	0.0	1.0	2.1	3.0	3.7	4.6	7.0	5.7	7.5	4.8	7.5
Eng & Admin (IAS Measures)	13.2902	0	0	3.3	7.997	9.757	11.517	13.299	13.299	13.299	13.299	13.2
TOTAL	88.66	0.0	10.8	23.1	33.4	40.2	50.2	77.4	62.9	82.9	52.6	82.6
TOTAL (Incl IAS Measures)	101.95	0.00	10.77	26.41	41.39	49.93	61.73	90.74	76.22	96.18	65.93	95.86
Farmer Costs												
MESQA IMPROVEMENTS												
Staff (pump operation)	35.28	0.0	0.0	12.0	35.3	35.3	35.3	35.3	35.3	35.3	35.3	35.3
System maint & replacement	80.16	0.0	0.0	16.0	32.0	48.0	64.0	80.2	80.2	80.2	80.2	80.2
Lubrication	5.38	0.0	0.0	2.0	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
Sub-total	120.82	0	0	30	72.7	88.7	104.7	120.9	120.9	120.9	120.9	120.9
Contingencies (10%)	12.08	0	0	3	7	9	10	12	12	12	12	12
Sub-total	132.90	0	0	33	80	98	115	133	133	133	133	133
Eng & Admin. (10% IAS)	13.29	0	0	3	8	10	12	13	13	13	13	13
TOTAL	146.19	0	0	36	88	107	127	146	146	146	146	146
TOTAL (Excl Eng & Admin IAS)	132.90	0	0	33	79.97	97.57	115.17	132.99	132.99	132.99	132.99	132.99
GRAND TOTAL	234.85	0.00	10.77	59.41	121.36	147.50	176.90	223.73	209.21	229.17	198.92	228.85

Table 5 ESTIMATE OF TOTAL OPERATION, MAINTENANCE, & REPLACEMENT COSTS -- SAVOYA COMMAND AREA, ALTERNATIVE # 1

Cost Item	Total	Annual Cost Distribution for Years # 1 & 5										
		1	2	3	4	5	6	7	8	9	10	11-30
Manpower Costs												
IRRIGATION AND DRAINAGE SYSTEM												
Staff	6.98	0.00	0.00	1.40	2.80	4.20	5.60	7.00	7.00	7.00	7.00	6.99
System maintenance	11.14	0.00	0.00	2.20	4.50	6.70	9.00	11.10	11.10	11.10	11.10	11.14
Replacement	7.20	0.00	0.00	0.00	0.00	0.00	3.60	3.60	0.00	0.00	0.00	0.00
SUPPLEMENTARY WATER SUPPLY												
Power	15.55	0.00	5.60	11.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	15.55
Staff	5.65	0.00	2.30	4.50	5.70	5.70	5.70	5.70	5.70	5.70	5.70	5.65
Spares and maintenance	14.20	0.00	1.00	2.00	2.70	6.80	11.00	14.00	14.00	14.00	14.00	14.20
Replacements	25.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	8.50	25.00	0.00	25.00
Sub-total	85.72	0.00	8.90	21.10	31.70	39.40	50.90	75.40	62.30	78.80	53.80	78.53
Contingencies (10%)	8.57	0.00	0.89	2.11	3.17	3.94	5.09	7.54	6.23	7.88	5.38	7.85
Sub-total	94.29	0.00	9.79	23.21	34.87	43.34	55.99	82.94	68.53	86.68	59.18	86.39
Eng & Admin (10%)(IAS)	9.43	0.00	0.98	2.32	3.49	4.33	5.60	8.29	6.85	8.67	5.92	8.64
Eng & Admin (IAS Manpower)	18.97	0.00	0.00	4.69	11.43	13.96	16.49	18.98	18.98	18.98	18.99	18.98
TOTAL	103.72	0.00	10.77	25.53	38.36	47.67	61.59	91.23	75.38	95.35	65.10	95.02
TOTAL (Incl IAS Manpower)	122.70	0.00	10.77	30.22	49.79	61.63	78.08	110.21	94.36	114.32	84.07	114.00
Farmer Costs												
MEDIA IMPROVEMENTS												
Staff (comp operation)	50.42	0.00	0.00	17.00	50.40	50.40	50.40	50.40	50.40	50.40	50.40	50.40
System maint & replacement	114.56	0.00	0.00	22.90	46.00	69.00	92.00	114.60	114.60	114.60	114.60	114.60
Lubrication	7.51	0.00	0.00	2.70	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
Sub-total	172.49	0.00	0.00	42.60	103.90	126.90	149.90	172.50	172.50	172.50	172.50	172.50
Contingencies (10%)	17.25	0.00	0.00	4.26	10.39	12.69	14.99	17.25	17.25	17.25	17.25	17.25
Sub-total	189.74	0.00	0.00	46.86	114.29	139.59	164.89	189.75	189.75	189.75	189.75	189.75
Eng & Admin (10%)(IAS Manpower)	18.97	0.00	0.00	4.69	11.43	13.96	16.49	18.98	18.98	18.98	18.98	18.98
TOTAL	208.71	0.00	0.00	51.55	125.72	153.55	181.38	208.73	208.73	208.73	208.73	208.73
TOTAL (Excl IAS Manpower)	189.74	0.00	0.00	46.86	114.29	139.59	164.89	189.75	189.75	189.75	189.75	189.75
GRAND TOTAL	312.45	0.00	10.77	77.08	164.08	201.22	242.97	299.96	284.11	304.07	273.82	303.75

Appendix G

Feasibility Studies
Scope and Guidelines

INTRODUCTION

One of the IIP objectives is to develop a "rational" interdisciplinary approach for planning, designing, and implementing the renovation of specific commands identified in MPWWR s current five year plan. Considerable work had been done concerning the planning element of this objective prior to IIP. Sir MacDonald, CSU (CWUP) and others have produced planning studies concerning rehabilitation and betterment of the main and secondary delivery systems.

Good quality feasibility studies were done by Sir MacDonald for part of the IIP area. For the remaining project areas (most of Saidiya, Serri Canal, Bahr El Gharaq and Bahig) lesser quality studies, or no studies exist.

Planning activities to date in IIP have consisted of reviewing the MacDonalds reports, and conducting supplementary feasibility studies for the areas covered in those reports. These supplementary studies are in various stages. Some have been completed and submitted to USAID, some are in the final stages of completion, and some are still in the field activity stage. All of these studies will be completed using procedure and premises similar to the studies already completed; i.e; Qiman El Arus and Qahwagi.

For the remaining areas, for which no MacDonalds studies exist, a different planning procedure will be followed.

PREMISE

To obtain and sustain the benefits of the IIP program, solution of all the problems identified in the area are necessary. Solution will vary and may include drainage works, land leveling, system reoperation, groundwater development, reuse of drainage water, rehabilitation of and changes to structures in the conveyance system, and mesqa improvement. Additionally the organization of water users is necessary to participate in the planning, design, construction an operation stages of mesqa rehabilitation.

The purpose of the feasibility study is to determine the physical, economic and financial feasibility of the rehabilitation program for the canal command area. The economic analysis will compare the values of the resources required to accomplish the rehabilitation program (costs) with the value of the resulting effects (benefits). Only tangible benefits will be considered in the economic and financial analysis. Benefits will be based upon

the increase in crop yields and water saved with the assumption that all solutions are implemented. Costs will be assigned to each solution and allocated to the program that will be involved i.e; IIP, Drainage Authority, Telemetry System etc. Intangible benefits can be discussed, but will not be assigned value.

PROCEDURES

Feasibility studies will be conducted for the four remaining large areas (Saidiya except subarea 1,4,5, Serri Canal, Bahr El Gharag, and Bahig). Feasibility studies will not be made for subareas.

For each area, problems will be identified, and solutions developed for resolving the problems. A system hydraulic study will be made and all structures to be upgraded or added in the system will be identified and a feasibility level design and cost estimate will be made for these structures. For mesqa improvements in the area, cost estimates will be based upon work done in previous studies in other areas and/or upon studies of sample subareas in the subject feasibility study area. For other actions ie, land leveling, system reoperation etc, costs will be estimated and an implementation plan will be developed.

The following process will be followed:

- Review existing reports and data to determine the problems needing resolution. If additional data is required to define the problems, identify what data requires gathering, determine the level of detail necessary, program the data collection.
- Collect any additional required data
- Conduct the necessary feasibility level studies of the area and its irrigation system to determine the existing problems.
- Identify solutions to the problems.
- Prepare and evaluate alternative plans to resolve the problems, i.e; structure improvements, new structures, operational changes, additional water supply systems, drainage, land leveling etc.
- Prepare reconnaissance level plan and cost estimates for the alternatives.
- Select the best alternative and refine the plan and cost estimate to feasibility level.
- If the area is similar to areas previously studied in IIP use mesqa improvement cost data from the previous studies to develop a range of unit mesqa improvement costs depending on the type of mesqa improvement. Extrapolate these costs to cover the entire study area.

- If the area is significantly different from areas previously studied, perform reconnaissance level analysis of sample subareas to obtain unit cost estimates for mesqa improvements, and extrapolate these costs to cover the entire area.

- Identify the effects of the proposed conveyance system alterations, drainage improvements, reoperation of the system, mesqa improvements, and other changes i.e; water quality improvement, reduction of shortages, increased efficiencies, reduction in saline lands etc. These effects induce changes in productivity that can be converted into monetary benefits of the proposed plan i.e; higher crop yields, change to higher income crops, higher intensity cropping pattern, and water savings.

- Prepare an estimate of the monetary benefits for the entire area based upon the effects identified. This analysis assumes implementation of all the plans developed to resolve identified problems. Benefit analysis will not be separated between various improvements i.e, drainage, land leveling, conveyance system improvement and mesqa improvements.

- Compare costs and benefits through benefit cost ratio analysis and internal rate of return analysis. Make this comparison using the upper and lower range cost estimates for mesqa improvements.

- A "without" project and "with" project economic analysis will be made.

- A sensitivity economic analysis will also be made in which various factors are changed such as crop yields, crop prices, higher costs etc.

- A financial analysis will be made to show the relationship between project cost and the farmers ability to repay costs.

- If the proposed plan for the entire area is feasible, prepare an implementation plan. This plan should identify and schedule future activities and define the parties responsible for the activities.

Implementation Plan activities include:

1. IAS activities
2. WUA organization and input activities
3. Definite plans and designs for mesqas in subareas of the larger canal command.
4. Designs for conveyance system alterations and structures.
5. Land leveling program.
6. Drainage program.
7. Changes in operation.
8. Other plan elements.
9. Construction specification and IFB's.
10. Construction

REPORT

The feasibility analysis will be explained in a report with the following major sections:

I Introduction
- Background
- Study Objective
- Previous Studies and Data

II Present Conditions
- Soils
- Agriculture
- Irrigation and Drainage System

III Problem Identification

IV Plan Formulation
- Process and Criteria
- Alternatives - Conveyance System, Drainage, Land Leveling, System Reoperation
- Mesqa Improvement, etc

V Economic and Financial Analysis

VI Recommended Plan
- Description
- Costs

VII Implementation Plan
- IAS & WUA Activities
- Program for all plan elements
- Definite Plans and Designs for mesqas by subareas.
- Construction specification and IFB
- Construction.

REVIEW AND AUTHORIZATION PROCESS

1. Directorates prepare the first draft of the feasibility report, including as much of the economic analysis as possible, and send the draft report to IIP headquarters in Cairo.

2. IIP headquarters staff will review the report for technical adequacy (engineering, economics, pedology, etc) and format and presentation.

3. IIP Headquarters staff will work closely with the Directorate staff to revise the report as necessary to make it accurate, clear and logical.

4. The revised report will be sent to USAID informally for their initial review.

5. After receiving comments from USAID's informal review, the report will be finalized and submitted officially to USAID.

6. Upon approval of the final report by USAID, USAID will approve proceeding with implementation and construction programs on all elements of the plan except mesqa improvements.

7. Definite plans and designs for mesqa improvements will be formulated according to the priority schedule developed for blocks of mesqas in the feasibility report - implementation plan. WUAs will have been developed and will participate in this process.

8. A design memo will be prepared for each block of mesqas, and as they are completed, sent to IIP Headquarters for review and approval.

9. After finalization of these design memos by IIP Headquarters and the Directorate, and satisfaction of criteria for IAS and WUAs, the memo will be sent to USAID requesting their approval to commence construction.

10. USAID reviews the design memo and approves construction of the mesqas outlined in the design memo.

Appendix H

Project Implementation Letter No. 102

UNITED STATES AGENCY for INTERNATIONAL DEVELOPMENT

CAIRO, EGYPT

August 29, 1990

Engineer Salem Sayed Ahmed
Project Director
Irrigation Improvement Project (IIP)
Ministry of Public Works
and Water Resources (PWWR)

Subject: Procedures for Funding of Local Construction Contracts
Irrigation Improvement Project (IIP)
Irrigation Management Systems (IMS)
Project No. 263-0132
Implementation Letter No.102
Project Element No. 1

Dear Engineer Salem:

According to the description of this activity in the IMS Project Paper, "The IIP component will establish and field test an organizational structure within the PWWR capable of providing technical assistance, construction assistance, economic analysis, on-farm development assistance, and user involvement to remodel selected irrigation canal commands. The objective is to make the system more responsive to the needs of farmers and to assure that water is available in the quantities needed at the time it is needed to support increased agricultural output."

The purpose of this Project Implementation Letter (PIL) is to set forth the implementation criteria leading to AID reimbursement of local currency funded construction activities needed for renovation of selected canal command areas. This PIL establishes reporting and certification procedures, and general guidelines for approval of USAID funded Irrigation Improvement Project (IIP) construction activities.

Planning and Feasibility Studies

The first step in the process is the preparation of a comprehensive plan and feasibility study for each canal command area. This study should contain: (1) a description of the project area and location including crops and crop yields; (2) a soil survey and analysis; (3 problem identification; (4) formulation and analysis of the alternatives to solve the identified problems; and (5) an economic analysis of the alternatives. This plan should provide an implementation strategy including priorities.

The implementation strategy should break the area into manageable units or unit command areas (UCA) for more detailed planning, design, construction, and operation after renovation is completed. The studies prepared by the UNDP in eight command areas, the broad study of the Serry Canal prepared with assistance under the CID contract, and the study by the Project Preparation Department (PPD) for the Gharaa Canal in Fayoum should satisfy these feasibility study requirements with little modification. Some work has been done in the Bahiig Canal Command but in our judgment, much work remains to be done in this command area for an acceptable comprehensive plan.

The second step is to develop a more detailed plan for the respective UCAs. This should include a more detailed analysis of the problems, development of specific measures to be implemented to solve the problems of the UCA, cost comparison of alternative types of structures or measures to solve the problems, description of the implementation procedures and responsibilities, and description of the operation and maintenance requirements of the UCA.

The remaining steps are design, contracting, construction and, finally, operation and maintenance of the renovated system. These steps are not discussed in detail in this PIL.

Irrigation Advisory Service and Farmer Organizations

An Irrigation Advisory Service (IAS) should be formed during the comprehensive planning stage and prior to finalizing the implementation plan in each UCA. In the event that technical specialists required to carry out the work of the IAS are not available from existing PWWR staff, PWWR can provide the needed expertise by either contracting with indviduals or seconding staff from other Ministries. The purpose of the IAS is to organize farmer groups and, after implementation, to provide advice and assistance

to the farmers on the full range of issues in irrigation at the on farm level and in the operation of the commands proposed for rehabilitation. Once organized, a dialogue must be maintained with the farmer groups for (1) their assistance in problem identification; (2) concurrence in selection of alternatives; (3) cooperation during implementation; and (4) involvement in the operation and maintenance of the renovated system. We also envision that the IAS and farmer organizations will form a critical link in the cost recovery program also discussed in this PIL.

The IAS should continue to cooperate with the Ministry of Agriculture and Land Reclamation to assure that the farmers receive information and technical assistance from both the PWWR's IAS and the Ministry of Agriculture's extension service. Farmer input should be incorporated into the entire process from initial planning through construction, design and implementation, and operation and maintenance.

Cost Recovery Program

A cost recovery mechanism must be designed and implemented. The requirements for establishment of a cost recovery mechanism are defined in Article 5.13 of the Grant Agreement. Although this is not a requirement for initial AID funding it could become critical in AID's decisions to fund this and similar programs in the future. Cost recovery is necessary to assure the funding needed to operate and sustain the renovated systems in the future. It is essential that this program be developed and, once developed, its implications be explained to and understood by farmers in the renovation areas. This issue is covered in the Project Paper, the Grant Agreement and in previous correspondence.

Interdisciplinary Approach

The Project Paper and Grant Agreement both describe an interdisciplinary process, accepted by PWWR and USAID, to be used in the implementation of this project. An interdisciplinary approach involves agronomists, economists, sociologists and other specialists working together with engineers to solve the complex problems associated with delivery of irrigation water and irrigation of crops. To implement this program effectively using the interdisciplinary approach, teams including the disciplines listed above must be used to develop the comprehensive plan and the more detailed plans for the UCAs described above.

The issuance of Ministerial Decree No. 53 of 1989 established an interdisciplinary organizational structure for IIP at both the Cairo and Directorate levels. Emphasis now must be given to staffing and training to develop the interdisciplinary staff.

USAID Approvals

The commitment of USAID funds to help finance irrigation system improvements will be contingent upon USAID approval of feasibility studies, along with progress in meeting objectives related to the establishment of the IAS, the formation of water users associations and the involvement of interdisciplinary teams in the planning process. Specific requirements for main delivery system improvements and unit command area improvements are listed in detail below:

Main Delivery System Improvements:

The commitment of USAID funds for the construction of main delivery system improvements will be contingent upon:

1. Establishment of an operational multi-disciplinary study team.

2. USAID concurrence with the feasibility study recommending the proposed main delivery system improvements. Feasibility studies must meet the requirements of the Planning and Feasibility Study section of this Project Implementation Letter.

3. USAID concurrence with the implementation plan for renovation of the command area. The implementation plan should include schedules and plans for all aspects of improvement of the command area including, but not limited to: additional, more detailed feasibility studies; socio-economic studies; soils and drainage investigations; engineering design; construction; and organization of water users associations. The implementation plan should also include a financial plan reflecting both USAID and PWWR's contributions to the project.

4. Certification that the Irrigation Advisory Service (IAS) has been formed and is operational and that a plan has been developed to organize water user associations.

Reimbursement Procedures

In accordance with the Grant Agreement, USAID will finance 80 percent of the cost of construction of approved irrigation system improvements.

Following USAID approval of an irrigation improvement activity as described in the preceding section, and submittal of the Ministry's request for USAID commitment of funds, USAID will commit funds in the amount of 80 percent of the contract amount. PWWR will be responsible for providing funding adequate to initiate construction and make periodic payments to the contractor. USAID will reimburse PWWR in the amount of 80 percent of the value of work accomplished, on a quarterly basis, not to exceed 80 percent of the contract amount. An amendment to this Project Implementation Letter will clearly describe the method of reimbursement and required documentation and certification. The method envisioned will be similar to that now being utilized under the Structural Replacement Component.

Standard GOE competitve procurement procedures will be used for contractor selection and contract award, but the Ministry will endeavor to utilize private sector contractors to the maximum extent possible.

Quality of Construction

USAID's concurrence to fund an activity is made with the understanding that PWWR will provide adequately trained staff and will take actions necessary to assure continued quality construction as per provisions of the Grant Agreement. The Irrigation Improvement Project will utilize the mutually agreed to contracting, construction and inspection standards developed for the Structural Replacement Project.

USAID will monitor construction by making periodic site insepctions to verify that the work meets the agreed standards. USAID will only fund construction which meets acceptable standards and construction which is completed before the end of the project. Full refunds of our 80 percent contribution may be required if, in our judgment, the construction does not meet those standards, or is finished after the PACD.

PWWR and USAID Concurrence

The Irrigation Improvement Project has made significant progress in developing the planning process and instituting the other measures required prior to USAID's commitment of funds for construction. We look forward to continued acceleration of project activities and the initiation of construction of the irrigation improvements.

Please indicate your concurrence with the foregoing by signing below and returning one signed copy to USAID.

Sincerely yours,

William J. Carmack
Office Director
Irrigation & Land Development

Approved: Salem Mouza
By: Engineer Salem Sayed Ahmed
Project Director
Date: 4/9/1990

Appendix I

Results of Final Evaluation

A. Workshop Goals

The goals of the workshop are listed below. Workshop participants were asked to rank how well each goal was achieved. The scale is from 1 (low, goal not achieved) to 5 (high, goal achieved very well).

1. To review project objectives and operating procedures with the National Staff, key Directorate staff, MKE staff and USAID staff to assure that all parties have a common understanding.

4.10

2. To develop strategies for management of the project considering recommendations from the IMS evaluation and this workshop.

3.84

3. To review planning issues that have been identified and agree on procedures to be used for additional studies.

3.86

4. To discuss and clarify issues regarding cost recovery and decide on next steps for development of a cost recovery mechanism as defined in the Grant Agreement.

3.96

B. Opinions and Feedback

The group was requested to answer the following questions in order to identify any concerns that need to be addressed in follow-up activities.

1. What do you think has been the primary benefit of this workshop?

   - Taking decisions in solving some problems.

- Some actions will be taken based on agreements which have been reached at the workshop. As a result, the project will hopefully move forward.
- Open discussion of issues and many decisions.
- Knowing our solution for the project.
- Defining the issues and discussing them.
- Stronger relationship - More clear objectives.
- Stronger relationship - More clear objectives -Solved some problems that might delay the project.
- Better relationships - More clear objectives - Solved all problems.
- We have information about the project as a whole.
- Highlighting problem areas.
- Getting everyone together for good discussions.
- It has identified a very serious problem between IIP and USAID on the goals of the project.
- Meetings between USAID, Ministry, and MKE people - private discussions were very useful.
- Solution of some delayed component of the project (i.e. ground water study) and clarification of some administrative problems.
- Better relationship - good understanding of the project objectives.
- To make <u>everyone</u> aware of concerns of the various participants (PWWR/MKE/USAID). A <u>beginning</u> has been made to address most problems.
- The divisive issue of different objectives by USAID and PWWR which clearly shows why progress has been slow or non existent.

- Getting acquainted and bringing issues into the open between USAID-PWWR-MKE.

- Brought together AID-PWWR -TA and helped PWWR personnel understand better (but not completely) their role in IIP and what is expected of them.

- Critical agreements in areas such as IAS, feasibility studies, project management, have been reached and major differences have been clarified and a course of action for resolution has been set in motion.

- To raise issues such as the polarization of project objectives between USAID and PWWR

- Ownership in IIP decision making
  Building understanding of issues
  Open discussion of issues
  Mechanism created for decisions and implementation
  Time to focus on project
  Sharing information

- Commencement of approach of cast recovery to PWWR personnel

- Left all parties in full understanding about the IIP situation now and in the future

- The more clearance of all objectives in the project and how to be fulfilled by the work plan and the thinking of PWWR, AID, MKE and project staff on the work plans and objectives

- Better understanding of what is going on with the project and try to solve all the problems facing the project

- Identified all problems facing the progress of the project and solved some of it

- Bringing people closer

- Have agreement about things which aren't clear

- Getting together
  Sharing ideas and experience

Resolving critical issues
Identification of unresolved issues

- The realization of just how far apart USAID & PWWR are regarding key issues holding up implementation, and then the mapping out the next steps for addressing the differences so that implementation can proceed
- Defining of fundamental issues
- Dispelling the illusion that there was common understanding concerning certain project objectives
- Share ideas, information for the benefit of IID
- Good communications for persons in the W.Sh.
- Better push towards goals
- Communication
- More clear ideas for everybody in the workshop
- The workshop was able to discuss in depth all the activities of the project within the limited time available
- To discuss issues in an open atmosphere
- Get all parties moving in the same direction toward the same objectives
- Identification of the conflict between PWWR and USAID concerning project objectives

2. What workshop activity could have been done better?

- objective # 1
- very well done
- I do not think any activity could have been done any better than this.
- The review of the project objectives
- O.K. - good job.
- Feasibility study (5)
- Feasibility study issue. Could have been resolved in an earlier meeting.
- Translation of all papers received to Arabic.
- Agreement that a problem exists and/or the magnitude of the problem.
- Mixing of the different groups during to breaks, etc.
  - Ministry staff should be prevented putting on shows such as mass agreements and presenting misinformation.
  - Being left out of cost recovery sessions.
  - Some discussions dragged out too long.
  - Silence linking training with rewards/incentives.
- Training
- Consider written, unsigned questions to panel members and senior management staff.
- Too much emphasis and time wasted on trivial matters under Project Management, i.e. revolving funds, per diem and PWWR in-house problems.
- Identification of issues. IAS given a key billing while issues such as how and when continuous flow can begin are ignored. Mesqas design and construction ignored.

- All activities were handled O.K. However everything was focused on IAS, allowing no time for other issues to be discussed equally.
- Very well done (2)
- Presentation by Engr. Mazon
- Put highlights on problem of the projects especially feasibility study
- All activities handled sufficiently
- Annual work plan
- This was the best possible
- All
- Same type of workshops but ONE of the groups whenever addressing critical issues should be of very senior staff only
- All activities were adequately covered especially feasibility study
- The W.Sh. have given successful progress to the project
- W.P.
- None.
- Training
- The feasibility studies activity and work plan
- The cost recovery
- Feasibility studies scope and content
- Limit attendance to only those who have major contributions and are in decision making positions

3. Do you believe there are unresolved issues that should be dealt with in follow-up activities? What are they, and what should be done about them?

- Yes - such as feasibility study - funding projects - (these issues need more discussions and decision for solving it, especially from USAID)
- Training
- Mesqa development is a major part of the project. These need to be researched and developed before going into large scale construction. Eng. Mazen's comment that R&D is complete is not true. If we can build some pilot mesqas, it still will be nearly another year before appropriate designs and demonstrations of their working can be available. A rush into construction of large areas soon can destroy the future of this great project idea.
- What will happen if some of determined dates and promises are not kept? And who will follow-up those promises?
- None left.
- Feasibility studies (7)
- Yes - The maintenance of the projects after they are carried out and in operation.
- Follow-up activities, as identified, where assigned as appropriate.
- Water user selection of alternative mesqas.
- Several issue were left to future meetings of the steering committee, or staff meetings.
- Yes. More product and decision-oriented workshops.
- Clear role of area engineers.
- Some of the critical issues (staffing and funding to the directorates) where discussed by my feeling is that these problems will continue to plague the project. I still don't understand why funding is proceeding at only 10% of schedule.

- There have been many issues declared for follow up. The major issue is differing objectives between PWWR/USAID. USAID should change their objectives if success for the project is expected.

- It is obvious that there are many unresolved issues identified in recommendations and follow up is identified. Issues of mesqa design and construction were not addressed at all.

- Clear understanding of the IIP project and role of AID/PWWR-TA need additional clarification and prioritization.

- the agreement on the role and function and operation, including tech transfer for F.S. must be resolved, for the sake of the beneficiaries, namely, Egyptian farmers.

- Staff performance evaluation. Method? Where is it? What is it?
  More clarity on the fact that per diem is not linked to job performance
  Need for high level IAS/WUS workshop
  Need for Training of DGs in management. How to manage a project.

- Final forum of PWWR/MKE (IIP) & PM/CM Program on subject of cost recovery

- The performance of T.A. in training the PWWR personnel in directorates

- Two issues which still need more discussion: implementation activity concerning delivery system and mesqa system, also cost recovery strategy

- No (2).

- Yes, some issues still need more communication (2)

- Work plan
  Training
  Institutional considerations
  Regular meetings between USAID, MK, and PWWR senior staff

- The follow-up activities have been agreed upon and scheduled

- Objectives-Feasibility process-Cost recovery
- Project objective of Institution Building - talk and accept the reality of it
- The issues remaining can be resolved within the implementation agencies according to the dates due in the agreements
- Many
- W.P. & C.R.
- I believe all unresolved issues are now in the hands of the decision makers
- Cost recovery needs more discussions
- The workshop members need to do all that they can to resolve all pending issues
- The communication between IIP and the other components of IMS. An action should be done about this point.
- Feasibility studies, scope and content
- Project objectives via meeting of USAID & PWWR
  Extension of IIP

4. What comments do you have about the workshop arrangements and accommodations?

- Excellent arrangements and accommodations (6)
- It is well arranged.
- Good (10)
- Good - but start earlier and end earlier.
- Very good (6)
- The accommodations were very good (4)
- Adequate.
- Fine
- Arrangements and accommodation were excellent. Transport arrangements, as usual, were confused due to the many changes at the last minute, typical in Egypt.
- O.K.
- Very good except language was a problem--communications
- O.K. One banquet has enough
- There are agreements and disagreements, and that is good
- Super
- Other than the AC system, it was great
- It was excellent (2)
- No comment but there was a need for pre-meeting with all the participants or the parties

5. What final comments do you have for the workshop facilitators on their performance?

- Excellent (12)
- Excellent performance, especially where conflict between USAID and Ministry people occurred. Follow-up questions were good and prevented many evasive answers.
- Very good to excellent.
- They are outstanding, keep on.
- Very well done. There were a few times when progress dragged but that is probably not avoidable.
- Good in-sight on problems resulting from in-depth interviews of participants the preceding week.
  Constant attention to detail including setting dates for completion of discussed items.
- Very good (2).
- Good (3).
- Facilitator's performance was outstanding in every respect.
- None.
- Stood up very well under pressure and were able to clarify many issues clearly.
- Some discussions tend to become overly long and tedious - need to stop and move on. Other than this minor criticism I thought this workshop a great improvement over the initial workshop in March '89. Venue, also a great improvement -- very important.
- This workshop included many personnel who actually have no "say" in matters addressed. There should be workshops for higher management to develop a clear objective and path for accomplishment, then smaller workshops by lesser management to determine methods of accomplishment. Considering the lack of the above, the facilitators did a creditable job.

- Surprising -- Nice Job.

- The level of language of many participants in not adequate to allow them to understand and participate freely in the discussion of complex issues. How do we know this was communicated. Expatriates tend to talk too much and dominate.

- Could scarcely have been better! They had good background, did excellent reconnaissance and pre-consult interviews, moved the process forward, listened very carefully to the participants and got agreements articulated and into the hands of all with dispatch. Too weli done!

- A-O-K

- I appreciate very much their job and no comments

- Thank you for the excellent work and for the big effort

- Keep going

- Job WELL done

- Great job under trying circumstances

- Always control the workshop to the objectives and goals, concentration on the specific issues

- Excellent - Able to control the group under some difficult situations

- They did their job more than excellent

- Absolutely essential. There would have been little to no positive progress without them.