

11/11/1
383.91
G232
IIM
EGYPT

irrigation management

DM

Final

WORK PLAN

STRENGTHENING IRRIGATION MANAGEMENT IN EGYPT: A PROGRAM FOR THE FUTURE

Collaborators

***The International
Irrigation Management
Institute,
Sri Lanka***

***Ministry of Public
Works and Water
Resources,
Government of
Egypt***

***United States
Agency for
International
Development***

Cooperative Agreement Number: 263-0132-A-00-5036-00

IIMI
333.91
G232
IIM

March 1995

H. 16239

16239

C
2

TABLE OF CONTENTS

1. OBJECTIVES OF THE STUDY	1
2. BACKGROUND TO THE STUDY	2
A. Water Resources and Agriculture in Egypt	2
B. Objectives, Antecedents and Components of the Irrigation Management Systems Project	3
C. The Role of the International Irrigation Management Institute	6
3. OVERALL IMPLEMENTATION STRATEGY	7
A. Basic Principles	7
B. An Outline of the Program Strategy	8
C. Determinants of Success	9
D. The First Workshop: Achieving a Common Vision	10
4. COST RECOVERY: FEASIBLE OPTIONS AND POLICIES FOR THE FUTURE	12
A. Overview of Present Situation	12
B. Purpose of Service Charges	13
C. Work to Date	14
D. Proposed Work Program and Methodologies	16
5. IMPROVED OPERATIONS: PLANS AND STRATEGIES FOR THE FUTURE	19
A. Objective and Working Hypothesis	19
B. Overview of the IMS Project	20
C. Proposed Study Process and Methodology: Analysis of Experiences to Date	21
D. Proposed Study Topics: Analysis of Experiences to Date	22
E. Process and Methodology: Developing a Plan for Improved Irrigation Operations	28
6. EXPECTED OUTPUTS AND IMPACTS	29
A. Planned Written Outputs	29
B. Planned Workshops	30
C. Anticipated Impacts	31

APPENDICES

- I Steering Committee Members
- II Task Force Members
- III Detailed Schedule of Activities and Staff Assignments
- IV Summary Schedule of Activities
- V Schedule of Planned Workshops
- VI Summary of Planned IIMI International Staff and Consultant Inputs

TABLE

Table 1: Proposed Cost Recovery Work Program

1. OBJECTIVES OF THE STUDY

The Government of Egypt is making great efforts to improve the efficiency and productivity of water use, especially in agriculture. This goal is extremely important as demand continues to increase for the limited supply of water. The Irrigation Management Systems (IMS) Project financed by the United States Agency for International Development (USAID) represents a 14-year program of investments whose objective has been to improve water use efficiency and productivity. As the implementation of these components nears completion, the Ministry of Public Works and Water Resources (MPWWR) and USAID are discussing the shape and thrust of the next stage of investments. This next stage is likely to focus on further strengthening and refining policies, strategies and institutions to enable Egypt to use its water supply in a productive and sustainable manner.

Therefore the current study has two broad objectives:

1. To develop a long range plan that would enable the MPWWR to make effective use of IMS outputs; and
2. To make further progress towards clarifying and establishing Egypt's future policy toward cost recovery and cost sharing to ensure the sustainability and efficiency of water resource management.

Some of the results of this Study will be used to design the proposed *Water Resource Management Project*, to be supported by USAID. The IIMI Team Leader has been asked to participate in the Ministry-USAID committee overseeing the development of this Project; and IIMI has agreed to provide substantial direct assistance in designing the Project.

This document is the final version of the Work Plan as approved by the Study Steering Committee at its meeting on February 20, 1995. It includes final corrections suggested at that meeting. However, all parties recognize the need for a flexible approach as the Study is implemented; this Work Plan is a guide and not a blueprint for the Study.

2. BACKGROUND TO THE PROGRAM

A. Water Resources and Agriculture in Egypt

Agriculture accounts for some 18% of GDP in Egypt, and about 40% of employment. With annual dependable rainfall close to zero, agriculture in Egypt is unique among developing countries in having a substantial agricultural sector that is totally dependent on irrigation. Productive land resources are also constrained, although only 4% of Egypt's area is cultivated. The vast majority of the country is desert, with no economic potential for agricultural development, although the government has a strong commitment to "reclaiming" further land, by transferring water out of the valley to newly irrigated areas. Between 1960 and 1990, the cultivable area increased from 5.9 M feddans to 7.2 M feddans. However population increases have more than offset this increase, with per capita land availability falling by more than 40% over the same period (from 0.23 to 0.13 fed/capita). The total area estimated to be available for reclamation is in excess of 3 M feddans, subject to the availability of water. Loss of cultivable land within the Nile valley has in the recent past also been significant, but the rate of loss is said to have been drastically reduced in recent years.

Construction of the High Aswan Dam significantly increased the usable water, and resulted in dramatic increases in cropping intensity and much improved scope for growing water-sensitive, high value crops. The policy of land reclamation as a basic national objective was also encouraged by the improved water availability. However, during the 1980s Government policy changed, as the results of state-dominated farming in the new areas fell short of expectations. Three fifths of newly developed areas are now allocated to investors with adequate capital to develop commercially-oriented farms.

Although there are ten riparian nations on the Nile, only two, Egypt and Sudan, make significant withdrawals. The mean annual flow of the river, estimated at 84 billion cubic meters (bcm) is divided in accordance with a 1959 agreement between the two states, providing Egypt with 55.5 bcm, and Sudan with 18.5 bcm. Evaporation losses from Lake Nasser are estimated at 10 bcm.

The future balance between water supply and demand poses problems.

Incremental increases in demand, aside from vertical and horizontal expansion of agriculture, will be significant. Industry and commerce will underpin Egypt's future economic development and demand for water from these sectors will increase significantly over time. On the supply side, incremental sources are limited: groundwater reserves are largely non-renewable; and the proposed project to canalize the Nile at Jonglei, thus saving evaporation from the marshes, has been stalled for some years due to the situation in Sudan.

The prospects for saving water within the Nile basin are controversial. One view is that measured low irrigation efficiencies at field and farm level offers prospects of substantial water savings for use elsewhere. Others have argued that since the Nile is a closed basin,

such "savings" are largely illusory as the losses observed at the field level are re-captured and used elsewhere in the system, once the basin is taken as the reference frame. Questions about water quality trends and solutions further complicate the issue of water "savings."

This debate on the prospects for saving and re-allocating Nile water resources within Egypt underlines the need to specify very carefully the objectives of improvements.

Over the last 10-15 years, the policy environment for the agricultural sector has changed dramatically. Up to the mid-1980s, the Government of Egypt set prices for major crops, specified the areas to be planted, and also controlled the supply and price of many inputs. Wheat and cotton markets were particularly distorted, with wheat sold to consumers at extremely low prices, and cotton purchased from farmers at low, controlled prices for sale by government agencies on the world market.

Price liberalization, and the removal of most quantitative restrictions have had substantial effects on the mix of agricultural production -- for example the area under wheat increased by 75%, and production by 150%, between 1985 and 1992. The area under fruits and vegetables has also increased sharply, especially on larger farms, while the area under berseem has declined. A less desirable effect of liberalized prices has been an increase in the area under water-intensive crops, particularly rice. These changes in the policy environment will affect future approaches to managing water resources.

B. Objectives, Antecedents and Components of the Irrigation Management Systems Project

The IMS Project is a major element of the long term strategy to improve water resources management in Egypt. The composition of the IMS Project was largely shaped by the UNDP/World Bank Master Water Plan Project which began in 1977, and the Egypt Water Use and Management Project (EWUP), also started in 1977 and assisted by Colorado State University with funding from USAID.

The IMS Project began in 1981. During the first six years of the project the three major components were Structural Replacement, Professional Development, and the Project Preparation Department. In 1987 IMS expanded to ten components with large funding levels for six of them (Irrigation Improvement, Preventive Maintenance, Main Systems Management, Planning Studies and Models, National Water Research Center, and Surveying and Mapping).

The IMS components and their objectives are as follows:

Irrigation Improvement Project (IIP):

- * Strengthen MPWWR's institutional capacity to continue the National Irrigation Improvement Project (NIIP), a successor of EWUP, with limited expatriate assistance.

- * Develop a rational interdisciplinary approach for planning, designing, and implementing the renovation of specific canal commands identified in the Ministry's five year plan.
- * Organize operational Water User Associations in the IIP canal commands 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 conflicts.
- * Establish policies and procedures for recovering an appropriate portion of the O&M costs of the irrigation system and one hundred per cent of the costs of mesqa and on-farm improvements.

Structural Replacement:

- * Replace, rehabilitate, or construct 12,500 small and medium structures.

Preventive Maintenance/Channel Maintenance:

- * Increase agriculture production by improving water delivery and drainage.
- * Reduce maintenance costs through improved management of the O&M function.
- * Eliminate current maintenance practices that lead to channel deterioration.

Main Systems Management (MSM):

- * Improve the management and operation of the water delivery system through the installation of a telemetry data gathering system, a voice/data communications system, flow measurement equipment and a pilot automation program.

Planning Studies and Models (PS&M):

- * Promote more efficient water use in the agriculture sector through development and implementation of computer models and programs to:
 - . Develop annual and short-range operating plans and national agro-economic and water resource development plans.
 - . Allocate water to competing uses and regions of Egypt.
 - . Define the water resource constraints and opportunities to increase agriculture production through desert and land reclamation projects.

Professional Development:

Develop professional capabilities within MPWWR to improve the management and operating efficiency of the irrigation delivery and drainage system by:

- * Improving the quality , efficiency and relevance of the service, training and activities of the Training and Management Development Department (TMD).
- * Assisting in designing, planning and implementing a *National Irrigation Training Institute (NITI)* facility that can expand training assistance to MPWWR units.
- * Exploring ways to help NITI become self sustaining, self sufficient and less dependent on donor funding.

National Water Research Center (NWRC):

Develop the long term capabilities of the NWRC and its research institutes to provide the Ministry and the Government of Egypt solutions to their irrigation and water resources problems. This is to be achieved by:

- * Carrying out research and providing solutions to problems facing the Ministry in the control, use and development of Egypt's water resource for economic and social welfare.
- * Carrying out research and providing answers to key policy issues in the irrigation sector.

Project Preparation Department (PPD):

- * Provide quality technical and economic feasibility studies that analyze investment options open to MPWWR and prepare reports in English for submission to international donors.

Survey and Mapping:

- * Produce mapping and related products through the Egyptian General Survey Authority (EGSA) and the Ministry's Planning Sector by expanding EGSA capabilities through training, the improvement of existing systems and procedures, and the installation of modern systems.

Miscellaneous:

- * Provide funding for technical assistance, training and commodities to cope with problems not addressed by the other components.
- * Finance the establishment and support of a Monitoring Office for IMS which is responsible for following the progress of IMS components and providing liaison among them.

C. The Role of the International Irrigation Management Institute

The International Irrigation Management Institute (IIMI) was established in 1984 with its headquarters in Sri Lanka; today it is working in about ten countries around the world. Its mission is:

to foster the development, dissemination and adoption of lasting improvements in the performance of irrigated agriculture in developing countries.

IIMI attempts to achieve its mission through a combination of strategic and action research, training and institutional strengthening activities, and information exchange. IIMI has over the last several years been developing closer relationships with the Government of Egypt through interactions and joint planning of future projects with the Water Research Center. More recently it has been collaborating informally with the Agricultural Research Center by providing modest inputs to a joint project on natural resource management in the Nile Valley with the International Center for Agricultural Research in the Dry Areas (ICARDA).

In 1994, USAID invited IIMI to submit a proposal for carrying out work on cost recovery, building on previous studies, and for carrying out an institutional analysis of the IMS Project implementation. IIMI responded with a proposal that emphasized a very close partnership with the MPWWR: the proposal suggested a highly intensive, participatory collaborative program in which IIMI would assist the Ministry to carry out the studies. This approach was accepted and is described in Chapter 3.

IIMI places a very strong value on collaboration and partnership with interested countries, supported by sympathetic donors. Ideally, the type of Study described in this Work Plan, which addresses important and sensitive issues, should be carried out after several years of partnership in research and institutional strengthening activities. Ideally, it also should be carried out over a several-year period, not a few months. Successful implementation of the proposed Study without this previous experience of working together, and in a very short time period, will be possible only if all parties work hard, in an open, flexible and transparent manner.

IIMI has had no previous relationship to the IMS Project. As a result of its experience in other countries, IIMI has views on basic management and organizational principles that are likely to result in sustainable and high performance. But IIMI presently has no specific views on the water resource management issues confronting Egypt. Therefore, IIMI is in a position to carry out an independent analysis which will take a fresh look at selected issues; and, working closely with its partners to analyze problems, identify potential solutions, and refine them into implementation plans. IIMI will attempt to combine a high level of professional analysis, an objective and open approach to identifying problems and developing solutions, and close collaboration with all parties.

3 OVERALL IMPLEMENTATION STRATEGY

A. Basic Principles

Three basic operating principles underlie IIMI's approach.

- * **First**, IIMI will carry out its work jointly with the MPWWR to ensure that the Ministry feels a high degree of "ownership" and commitment to the product. The analytical work will be carried out by both internationally recruited IIMI staff and consultants and the best Egyptian consultants IIMI can find, working as a team, and assisted by professional staff from the Ministry through two Task Forces. The team will include a senior highly respected Egyptian co-team leader to ensure the quality and relevance of the work and access to high policy levels. The results and options arising from the analytical work will be thoroughly discussed with a wide range of Egyptian officials and experts, with a special role being played by senior officials of the MPWWR. These discussions will be informal, and later formalized through a series of consultative workshops to be facilitated by IIMI. The aim will be to achieve the highest possible degree of consensus and commitment. Integral to the Cooperative Agreement mechanism, USAID officials will also be closely involved throughout this process.
- * **Second**, the work on cost recovery and improved irrigation operations will be integrated in order to broaden IIMI's perspective with regard to possible alternative cost recovery mechanisms. Experience in other countries has shown that there is an important linkage between cost recovery mechanisms and the performance of irrigation agencies and farmers.
- * **Third**, IIMI will do its best to achieve a satisfactory balance between the need for broad and deep analysis and the need to meet USAID and Government deadlines for development of the proposed Water Resources Management Project, whose activities will be partly based on this study.

The reports products of the Study will be thoroughly reviewed by senior officials from the MPWWR and their views will be incorporated into the reports. It is expected the reports will largely reflect a consensus among the parties, including the Ministry, IIMI, and USAID. While this work is participatory joint work between MPWWR and IIMI staff, the final outputs will be subject to comprehensive revision by both MPWWR and USAID before being accepted as the final documents.

Specifically, IIMI must:

- * provide a team of high calibre international and Egyptian staff members and consultants to work on the Program;
- * play a lead role in organizing and managing the staff, collaborators, and activities to achieve the objectives in the expected time frame;
- * provide overall guidance based on its experience in other countries; and
- * complete the work required within the established time frames to the extent possible.

The Ministry must:

- * ensure the Steering Committee and Task Forces play full and active roles in the Program, including providing timely advice and review of draft reports;
- * make the necessary data and knowledgeable staff available to the IIMI team in a timely manner; and
- * participate actively and fully in the Program.

For its part, USAID must:

- * ensure that necessary approvals and other inputs are provided in a timely fashion following the procedures laid down in the Agreement; and
- * participate fully in the Steering Committee meetings, workshops, and other discussions on the substantive Program.

Finally, given the complexity of the issues involved and the constraints under which the Program will be implemented, all parties must be flexible in their approach. As the Program proceeds it may be necessary to make changes in this Work Plan through the Steering Committee.

D. The First Workshop: Achieving a Common Vision

One purpose of the first workshop will be to finalize any remaining issues related to the Work Plan, and report on interim results of the study. But the primary objective of this Workshop will be to try to develop a common vision, or shared mental picture, of what Egypt should try to achieve in terms of water resources and irrigated agriculture over the next two decades. **The confirmed dates for this Workshop are 9-12 March 1995.**

A shared vision of the future will give a sense of direction both for the present Study, and for the Ministry as a whole. Such a vision should be clear and easy to communicate and remember; it should be ambitious -- but achievable; it should be stated in broad terms, but in a manner that lends itself to identifying intermediate milestones, and clear implementation strategies during the short term; and, very important, it should be fully shared and accepted by those in a position of leadership and eventually by the larger public as well.

This vision is conceived as a set of propositions regarding the state of water resources and irrigated agriculture about 10 to 20 years into the future. In looking toward the future, it is important to try to imagine a positive state of affairs. While the present situation is obviously the starting point, it should not be allowed to become a constraint that inhibits thinking about the direction in which we would like to go. The vision statement, rather than the detailed constraints of the present, will become the criterion for judging actions proposed in the remainder of the Study: what features in the present need to be changed in order to move toward achieving the vision? Will the proposed ideas help move toward achieving the envisioned future?

The participants in this workshop will include Steering Committee and Task Force members, key USAID officials, and senior IIMI staff and consultants. IIMI has obtained the services of two highly skilled workshop facilitators to assist in achieving a consensus on a vision for the future. If the workshop succeeds and Ministry officials are able to articulate and agree upon a shared vision of the future, this will provide a basis for evaluating the findings and recommendations emerging from the detailed studies of cost recovery and irrigation operational issues.

4. COST RECOVERY: FEASIBLE OPTIONS AND POLICIES FOR THE FUTURE

This section briefly reviews the present situation with respect to taxes and other forms of cost recovery in the irrigated agriculture sector, the objectives of cost recovery and its potential impact, and the studies now available. It then discusses the proposed further studies to be undertaken. In terms of description of the present and recent past, the comments are preliminary and incomplete: an important component of the Study will be a careful review of how the relationship between agriculture and the rest of the economy has developed in recent years, and the consequent implications for cost recovery policy. The work described in this chapter is primarily intended to achieve the second objective of the Study, i.e., to make further progress towards clarifying and establishing Egypt's future policy on cost recovery and cost sharing.

A. Overview of Present Situation

Up to the mid-1980s, the Egyptian agricultural sector was heavily discriminated against through low, controlled prices for inputs and outputs, and enforced cropping patterns. These measures effectively generated substantial revenues for the Government, while expenditures for operation, maintenance and construction of irrigation and drainage works were not recovered. However, the controls also limited farmers' incentives to maximize production and allocate scarce land and water resources efficiently.

Guidance and advice from some donors, combined with a realization among Egyptian policy-makers that excessive controls were counterproductive, led to rapid reform and liberalization of these policies in the late 1980s. The results, in terms of productivity and cropping choices, have been impressive.

During this period, cost recovery policies for irrigation and drainage services remained essentially unchanged in the three areas where costs are incurred: irrigation services above the *mesqa*; irrigation services at the *mesqa*; and drainage services. As government revenues from control of output prices (especially cotton) have declined, the net cost of irrigation and drainage services become a matter of increasing concern.

The present status of the Government of Egypt's policy regarding the recovery of fees for irrigation and drainage services (as recently amended through Law Number 213 for the year 1994³) may be summarized as follows.

³. The Irrigation and Drainage Law Number 12 (1984) was amended by Law Number 213 of 1994; and Decree Number 1490 (1995) of the Minister of Public Works and Water Resources provides administrative guidelines for the new law.

Farmers are responsible for the operation and maintenance of "private" irrigation canals and drains (that is, mesqas, *marwas*, and field drains). Where maintenance of the common facilities (mesqas and shared drains) is inadequate and their condition detrimental to proper functioning, the MPWWR can undertake the work and charges the farmers, plus a 10% administration fee.

In the traditionally irrigated old lands there are presently no procedures for recovering capital or O&M costs beyond the mesqa. Where improved irrigation facilities are to be provided at the mesqa level (consisting of a single pumping point and either a buried pipe or raised mesqa distribution system), specific provisions apply. First, capital costs of such facilities are collected from the beneficiaries over a period of up to 20 years, with payments in the first three years set so as to recover the cost of installed pumping equipment and land leveling. No interest rate is specified. Second, the beneficiaries are responsible for maintenance of the pump as well as the civil works, and pay for the operation of the pump in accordance with usage. Water User Associations are expected to take responsibility for these actions as well as to oversee drawing up irrigation schedules and resolving conflicts.

In the new lands, farmers are further responsible for the operation and maintenance of the irrigation facilities, including booster pumps delivering water to the irrigation command, subject to similar provisions in case of failure to do so as described above. On-farm irrigation works in the new lands are to be undertaken by the beneficiaries, or at their expense. Capital costs are to be recovered as described above. Establishment of Water User Associations is required in the new lands, with similar functions to those set out above.

B. Purpose of Service Charges

Service charges are imposed for a number of reasons:

- * To recover the costs of the service (operation, maintenance and rehabilitation--OM&R);
- * To induce efficient use of the input provided; and
- * To tax beneficiaries in accordance with benefits derived, either proportionately or progressively.

How these objectives are met is determined by the *level* and the *structure* of charges. The study to be undertaken here is specifically aimed at the first objective, recovery of the cost of providing the service. Thus, provided the level of charges is sufficient to cover costs incurred in OM&R, the objective is met. At one extreme, the imposition of a high tax on all cotton production, and at the other extreme, a low tax on all agricultural land could generate adequate funds and in principal meet the desired objective. Other options, such as charging per unit of water delivered, offer the possibility of meeting the general objective together with other positive potentials such as better allocation of water and

positive marginal pricing. These alternative *structures* of charges may have quite different, sometimes positive and sometimes negative impacts. In general, policy makers will wish to test any cost recovery proposal against a number of criteria:

1. Impact on production

Would a high tax on cotton, for example, substantially reduce incentives and productivity?

2. Equity

Should only cotton farmers, for example, pay for the irrigation service? Or should all farmers pay equally, irrespective of the quality of the service received, and quantity of water delivered?

3. Administrative efficiency

How much would it cost to install the facilities needed for volumetric delivery if this approach were adopted? How much will billing and collection costs increase overall OM&R costs?

4. Political and social feasibility

Traditionally, water charges have been close to zero. What forms of charge, and what rates of increase will be politically and socially acceptable and enforceable?

A viable service charge policy will:

- * have few or no negative impacts (in terms of distorting incentives, inequity of impact);
- * be transparent in calculation and application;
- * be administratively simple; and
- * be politically and socially acceptable.

C. Work to Date

A number of substantial studies have already been undertaken falling into three categories:

1. A cost allocation study⁴, designed to assess the appropriate disposition of costs incurred in system operation among beneficiaries (power, fisheries, irrigation, municipal, navigation);
2. Cost recovery studies⁵, designed to assess the repayment capacity of beneficiaries of IIP investments; and
3. General studies⁶ of the agricultural sector that give indications of the value of water to agriculture.

An important part of the proposed work program includes the detailed review and assessment of these and other reports. *Preliminary* indications are as follows:

1. The analysis of the cost of delivering irrigation water suggests a *per feddan* total cost of LE 80-120 in 1991 prices, or about LE 0.016/m³.
2. The average net benefits to agricultural users from irrigation water (a measure of capacity to pay for irrigation services) are substantially more than this -- in the order of LE 1,500/feddan or some LE 0.25/m³.
3. Agricultural net benefits per feddan have increased during the liberalization process by 25-40 %.
4. The marginal value of water (that is, the incremental net value of production which would accrue from the availability of 1 m³ extra water to agriculture) is variously estimated in the range LE 0-0.5. This apparently wide range reflects the fact that there is debate about whether water is currently constraining production. Some argue that it is not, but there is general agreement that foreseeable incremental demand from new agriculture, industry, and municipal users make values towards the higher end of the range inevitable. Thus for planning purposes, water should be treated as a constraining input.

⁴. *Irrigation Water Cost Recovery in Egypt: Determination of Irrigation Water Costs*, ISPAN, January 1993.

⁵. *Cost Recovery for the Irrigation Improvement Project*, Morrison-Knudsen Engineers, Inc. and Louis Berger International, Inc., October 1991.
Staff Appraisal Report for the Irrigation Improvement Project (World Bank report No 13454-EGT), December 1994.

⁶. *Water Security Project--Nile Economic Model*, Gary Kutcher, July 1993;
Land Water and Agriculture in Egypt: the Economywide Impact of Policy Reform, Sherman Robinson and Clemen G. Gehlar. IFPRI September 1993;
Arab Republic of Egypt--An Agricultural Strategy for the 1990s, World Bank 1993;
Value Added, Crop choice and Agricultural Production in Egypt, Z. Hussain, David Seckler and Farouk Abd Aal.

D. Proposed Work Program and Methodologies

Table 1 summarizes the proposed work program and comments briefly on the methodologies to be used. This program is being further developed and elaborated in consultation with the Cost Recovery Task Force.

Table 1. Proposed Cost Recovery Work Program

COST RECOVERY STUDIES	NOTES AND METHODOLOGIES
-Assign Tasks to Task Force	
+2.2.1:Agricultural Cost Recovery	
+Analyze/Update Cost Data	
-Review existing CR Reports	
-Comment on Methodology	
-Identify data update requirements	Review cost information on which existing analyses are based; identify areas needing updating.
-Collect data	Collect revised cost information from field staff
-Update Analyses	Incorporate revised data into cost allocation models
-Discuss with SteerCom	
+Update Economic Analyses	
-Review Existing Reports	
-Identify Updated Data Requirements	Review agricultural prices to identify significant changes
-Collect revised Data	Collect updated price information from local and international sources
-Revise Analyses	Incorporate revised data into economic/financial farm models
-Review allocation of System Costs	Joint review of Agricultural/on-agricultural cost allocation
-Assess Cost Recovery Experience	Historical review of cost recovery from agricultural sector
-Discuss with SteerCom	
-Recommend Cost Recovery Phasing Options	
-Recommend Criteria for Updating	Define suitable frequency and key indicators for cost recovery reviews and updates
-Prepare draft Final report	
-Discuss with SteerCom	
-Final Report on Cost Recovery Recommendations	
+2.2.2:Non-Agricultural Cost Recovery	
-Discuss with SteerCom	
-Review Existing Data and Analyses	Review of existing reports and discussion with government and TA experts
-Develop Framework for Assessing Policy Implications	Define alternative bases for assessing and allocating costs, and analyze impacts on sectors
-Review existing Demand and Charges	Historical description of cost recovery mechanisms in non-agricultural sectors; review of trends and analysis of present situation
-Analyze Phasing and Sharing Options	Assess financial implications of alternative phasing of introduction of cost recovery mechanisms by sector
-Assess future non-ag Demand	Project future demands based on discussions with municipal water supply, urban, industrial and other ministries.

-Prepare Draft Report	
-Discuss with SteerCom	
-Prepare Final Report	
+2.2.3:Cost Sharing and Phasing	
-Discuss with SteerCom	
-Cost Recovery Options/Trade-offs	Assess impact on production and equity of alternative allocation and charging mechanisms using the AGRO-ECONOMIC model to explore impacts
-Water Sharing Options	Describe options in allocation of water among sectors, and mechanisms to accomplish objectives.
-Further Studies	Define further studies needed to clarify outstanding issues.
-Prepare Draft Report	
-Discuss with SteerCom	
+Workshop on Cost Sharing Mechanisms and Selected International Experiences	Hold workshop for GoE officials on conclusions for cost recovery policies and options, including a presentation of selected experiences of other countries in cost recovery from agricultural and non-agricultural users
-Discuss with SteerCom	
-Final Report	

5. IMPROVED IRRIGATION OPERATIONS: PLANS AND STRATEGIES FOR THE FUTURE

A. Objective and Working Hypothesis

The work described in this chapter relates primarily to Objective number 1, to develop a long range plan that would enable the Ministry to make more effective use of IMS Project inputs, and thereby improve the management of water resources. The final product -- a detailed plan of action -- will also include findings and recommendations emerging from the cost recovery and sharing work. Some of the results of both the cost recovery and irrigation objectives studies will be used to design the proposed Water Resources Management Project.

The basis for the *Plan for Improved Irrigation Operations* will be a shared understanding of the IMS implementation experience, supplemented by lessons from the implementation of selected other donor-funded projects. The shared understanding will be achieved by carrying out an analysis of the outputs, progress, problems, and lessons learned from IMS implementation. This will lead to identification of strengths and weaknesses in implementation, the opportunities for making further progress quickly, and any threats to further progress that need to be addressed. It is important to emphasize the Study will not duplicate, or replace, the important work of many people under the IMS umbrella. It will build on the IMS foundation, drawing upon the findings and lessons to date.

The *conclusions and recommendations* emerging from this analysis of experience will be presented in the report on "Objectives for Improved Irrigation Operations in Egypt." The "Plan for Improved Irrigation Operations in Egypt" will develop these conclusions and recommendations into detailed *plans and strategies* for implementation, including criteria for monitoring progress.

A basic **working hypothesis** underlies USAID's invitation to IIMI to undertake this Study, the Program Description contained in the Cooperative Agreement and agreed to by the Ministry, and this Work Plan. That working hypothesis is that the most important opportunities for making better use of IMS inputs lie in a program of institutional strengthening and change. IIMI's initial interviews and observations confirm the overall validity of this working hypothesis.

The IMS and other projects have introduced modern technologies, supported training and improvement of staff skills to use these technologies, and have also supported important *institutional changes. Nevertheless, an institutional analysis may find, as has been the case in many countries, that further institutional changes would greatly enhance the capacity of the Ministry to make best use of IMS outputs and -- perhaps more important - - enhance the capacity of the Ministry to attract additional donor support for future investments.

B. Overview of the IMS Project

The aims of the Egyptian Water Use Project (EWUP) were to develop improved irrigation and agronomic practices on the farm level, and strengthen the institutional capacity of the MPWWR and the Ministry of Agriculture and Land Reclamation to develop and implement improved on-farm water management programs. Many of the findings of EWUP were used to develop a follow-up program, the Irrigation Improvement Project (IIP), which is an important component of the IMS Project.

The IMS Project was designed to strengthen further the capacity of the MPWWR to plan, design, operate, and maintain the water distribution system in Egypt. The implementation of this multi-component project has made much progress toward the objectives. However, most observers agree that there are still some issues and problems which should be addressed to achieve further improvements in the management of the Egyptian irrigation system.

As the end of IMS draws near, the Government and all the other interested parties are thinking about the sustainability of the activities which were initiated in the mid-seventies. To be more effective in managing the irrigation operations in future, it is critical to make use of the lessons learned during the last almost two decades.

From a preliminary review of project reports and evaluations of IMS components, as well as interviews with Ministry officials and technical assistance personnel, a brief summary of some of the problems and issues perceived is as follows:

1. Management and communication problems between the donor agency and the implementing Ministry;
2. Management and communication gaps within the different departments of the Ministry;
3. Insufficient enthusiasm among the participating staff due to the absence of financial incentives;
4. Difficulties associated with retaining qualified, trained and experienced staff;
5. Shortage of qualified staff;
6. Slow decision-making in the Ministry;
7. "Compartmentalization" within the Ministry and its main components;
8. Less than desirable "housing" of some projects (in terms of the implementing unit);
9. Less than desirable coordination and level of communication between the field and head office staff;

10. In some cases, lack of a multi-disciplinary approach to solving problems;
11. Fuzzy criteria for water distribution; and
12. Insufficient emphasis on continuing field research.

This list is indicative, not exhaustive. Some are more important than others, and some problems may be closer to solution than others. In addition to these problems of program implementation, there are water resource issues that need re-examination.

For example, recent draft reports of work carried out by the Strategic Research Project (SRP) have questioned the traditional importance given to maximizing local irrigation efficiencies. The research suggests that future planning should be based on global irrigation efficiencies which are based on basin-wide water and salt balances. Obviously, these findings, if confirmed, affect investments in on-farm improvements where spilled water can be recovered for reuse. However, in those areas where the underground water is or may become brackish, the draft findings propose on-farm improvements to minimize deep percolation.

On the other hand, there are people who feel that the on-farm improvements may still be needed within fresh groundwater zones for the following reasons: (i) to avoid waterlogging and salinity; (ii) to save additional cost of groundwater pumping; (iii) to reduce water quality degradation; (iv) to increase agricultural production; and (v) to minimize the leaching of nutrients. These issues must be considered and resolved in developing a strategy for planning future on-farm irrigation improvements.

Integrating the successful elements of IMS into the regular operations and management activities of the Ministry requires a review of the IMS programs, their relationship to the Ministry's normal programs, a review of the institutional set-up of the Ministry, and a plan to implement the integration successfully.

C. Proposed Study Process and Methodology: Analysis of Experiences to Date

The first stage of the Study is diagnostic, to understand the experiences and lessons, and underlying strengths and weaknesses that affect implementation. The IIMI team, assisted by the Task Force members, has developed a set of questions and the team members and task force members are carrying out interviews with a wide variety of officials in the Ministry and outside. These interviews are providing the team with insights into issues and problems, and also ideas regarding future trends, roles and issues. The results of these interviews will provide an important basis for the first workshop on achieving a common vision.

The overall sequence of activities in this diagnostic phase will be:

- * Collection and analysis of existing reports
- * Interviews with Ministry officials, consultants, a few farmers, and others

- * Workshop on achieving a common vision (March)
- * Informal discussions and brainstorming -- team members, task force members, and officials close to the Study
- * Setting possible objectives
- * Identification of possible issues, constraints, opportunities
- * Further investigation through more interviews, field trips, informal discussions, analysis of data
- * Discussion with Steering Committee members if necessary
- * Revision and confirmation of objectives and associated issues, constraints, opportunities
- * Development of draft conclusions and recommendations
- * Informal discussion of draft conclusions and recommendations with task force members and officials close to Study
- * Discussion with Steering Committee members
- * Preparation of draft Report
- * Workshop to discuss objectives and recommendations to achieve them (April)
- * Discuss with Steering Committee
- * Preparation of final report on *Objectives for Improved Irrigation Operations in Egypt* (April)

Early drafts containing preliminary conclusions and recommendations will be made available to the extent possible to the Ministry and USAID for inclusion in the "New Activity Description" for the proposed Water Resources Management Project.

D. Proposed Study Topics: Analysis of Experiences to Date

Based on discussions of the first draft of the Work Plan, it was agreed the Study should take an integrated approach, focusing on issues and questions that seem likely to be important to understanding the IMS experiences and results to date. The integrated approach outlined here is subject to adjustment and modification if other issues or topics emerge in the course of the Study. These topics are identified largely based on the problems and issues emerging from our initial analysis of project reports and evaluations (given above) as well as discussions and interviews held so far. For the purpose of presenting and organizing the work, they are subdivided into two levels or categories, but these are obviously not separate compartments. **It should be clear that IIMI cannot address all of these issues in equal detail; as the Study proceeds IIMI will concentrate on priority issues that emerge.**

1. Organization and Management: Ministry Level

a. Water resources

IIMI does not propose to do detailed work on the areas noted in this subsection, except cost recovery and sharing (described in Chapter 4). However, it will be important to achieve a good understanding of the issues in these areas, and highlight areas needing further attention from the Ministry as a foundation for the work on institutional issues.

Technical issues. Many important macro-level issues face Egypt's water resource managers. For example, the Ministry needs to take a position on the question of the relationship between basin-wide water use efficiencies and what impacts can be expected from on-farm irrigation improvements. This position should be open to further work if there is strong disagreement, and further research should be initiated to resolve the issues. Maintaining and improving water quality is another area requiring further research, measuring programs, establishment of standards, etc. Competition for water among sectors will have to be addressed through some combination of demand management and supply enhancement, and this may require difficult decisions about allocations (and large investments). Finally, farmers' freedom to choose their own cropping patterns has made the normal system for projecting irrigation water demands obsolete and ineffective.

National water resource planning. Macro water resources planning is a continuous process. The provisions for updating and improving the water master plan on a continuous or periodic basis will be examined. Related to this is Nile Basin forecasting and planning to meet changing water demands.

Overall policy for water resources and agriculture. Assessment of options, formulation of policy, implementation, and monitoring and feedback is a continuous process. Examples of policies likely to evolve over the next decade are cost sharing mechanisms, continuation of subsidies in some areas, and how to establish and implement measures to maintain and improve water quality. IIMI's work on cost recovery and cost sharing will be the most important policy issue addressed by IIMI.

Legal framework. For example, in view of the recent success in passing and implementing a new law for water users associations and sharing of the costs of improving private mesquas, what are the next steps required?

b. Structural issues

Organizational structure of the Ministry. At present it could be argued there are a rather large number of different units in the Ministry. Preliminary observations suggest that communications and cooperation among units at the higher levels is not a serious problem (with some possible exceptions) but could be improved. Communications between the center and regional levels could perhaps be strengthened. There is evidence of both overlap and competition among units.

The question of incorporation of special project activities such as IIP into "normal" operations appears to be problematic. There may also be future roles for the private sector in assisting the Ministry to accomplish its objectives. More private sector involvement may affect the overall organization of the Ministry.

IIMI proposes to examine these structural issues in some detail to identify whether either changes in structure, or other changes could enhance the effectiveness of the Ministry.

Personnel and training. The Ministry as presently constituted is primarily a civil engineering organization. An important question for the Ministry is whether in future it needs to recruit other kinds of staff as well: what is the mix of disciplines and skills required in the future? Another issue that has been raised is the recruitment of staff on contract for special projects, and whether this inhibits sustainable integration of project results. In addition, preliminary discussions have suggested the need for a great deal more training of staff at all levels to make best use of modern technologies and the investments made under IMS.

IIMI will address this issue in an indicative manner, sufficient for laying the foundation for further analysis of personnel and training needs.

Incentives and accountability. Modern literature on management emphasizes the importance of getting incentives right in organizations, and ensuring people are accountable for their performance, as key measures to enhance overall organizational performance. Preliminary observations and interviews highlight this as an area of great concern, albeit also an area that is sensitive and poses difficult questions to the Government.

IIMI proposes to examine this area to try to understand its impact on implementation, and to identify whether there are measures that could be implemented to improve performance.

Linkages with other ministries. Various ministries have roles in the management and use of Egypt's water resources. There is some evidence that coordination and collaboration on water resource issues could be strengthened.

IIMI proposes to examine these linkages and identify areas needing clarification, strengthening, and better coordination.

Donor programs. Relationships with donor agencies and how donor projects are designed and managed within the Ministry will be examined. Issues to be investigated include collaboration of the Ministry and donor agency, the mechanisms for such collaboration, management of program funds, program management and monitoring, identification and resolution of problems, the Ministry's organizational and management procedures for implementing donor programs, and relationships with and use of technical assistance.

c. *Management process issues*

Decision-making. Preliminary evidence suggests that decisions on operational matters often are made at higher levels than may be necessary. When too many decisions are shifted upward, higher officials get overwhelmed with day-to-day problems, leaving little time for strategic thinking; decisions are often made based on incomplete information; and project implementation gets delayed unnecessarily. Further, there is very strong evidence that the numerous computer-based models

introduced under IMS and other donor-funded projects are not used as effectively as they might be in decision-making. Thus, inadequate decision support systems appears to be a problem.

IIMI proposes to examine the questions of decision-making levels, and the use of decision support systems and identify ways to improve the quality of decision-making.

Linkage of research and policy. With support from USAID and other donors, the Ministry has developed a very strong research capacity. But preliminary evidence suggests that research results are not yet having as great an impact on Ministry policies as might be desirable.

IIMI proposes to try to understand how research priorities are set, how research results are communicated, what is the role of policy makers in setting research priorities, and to what extent do policy makers understand the potential usefulness of research.

Communication and information. Effective communications, converting data into information, and sharing information among those who need it are important in modern management systems. Preliminary evidence suggests that lines of communication, especially outside the small circle of senior managers, are not always as effective as one might wish. There are indications that data are hoarded, not shared. Whether the data generated by the modern telemetry system are used effectively in management is a question that has also been raised.

IIMI proposes to investigate the area of information and data sharing, as well as the role of the Information Center. This activity clearly relates closely to the questions on decision-making posed above.

Program planning, budgeting, monitoring, and financial management. Ultimately, the planning of programs and the allocation and management of the funds required are the key to successful implementation. If plans are made but funds are delayed, implementation is slowed down. If financial controls are stringent, managers are reluctant to make necessary decisions. There are modern systems of program planning, budgeting and managing funds which can enhance an organization's performance while retaining the controls necessary in any public institution.

IIMI will investigate this area, in terms of the present rules and procedures and their impacts on performance, for example in the implementation of IIP, to identify ways the system could be improved.

Equipment, supplies, and infrastructure procurement and management. In addition to its human resources, the Ministry has a large stock of equipment, supplies and infrastructure to accomplish its objectives. Preliminary indications are that the current procurement and management procedures are leading to suboptimal use of these assets.

IIMI will review the procedures and practices in this area, identify any constraints that may exist, and suggest improvements.

2. *Organization and Management: Directorate and Field Level*

a. *Structural issues*

Organizational structure. A number of issues have been suggested in this area. While the organizational structure within Directorates may not be a serious issue, the relationship between the Directorate and special projects, especially IIP and Preventive Maintenance, has been noted as problematic. Proposals have been made for integrated management at Directorate level (bringing together irrigation, drainage, and special projects).

IIMI will explore these and other issues that may arise and attempt to identify possible solutions.

Accountability and incentives. Issues of accountability and especially incentives have been discussed above; the same issues are found at the Directorate and field level and may be most serious at this level. Differential incentives between special project (IIP) and regular staff has also been identified as an important problem.

IIMI will study these issues in some depth and try to suggest solutions.

Water users associations. Egypt has made a firm policy decision to encourage the establishment of water users associations at mesqa level, and has established the legal framework for this. But further questions need to be explored. These include the question of federating water users associations at the distributary level; what should be the role of water users associations, if any, in the management of distributaries and even branch and main canals in the future; and what other functions should be the associations be encouraged to play, if any⁷.

IIMI will examine these issues in considerable depth and offer proposals for future work.

Match of skills and expertise required. In technical organizations like the Ministry, one often finds that while the staff may be well-trained in various technical disciplines, there are gaps between the skills of staff and their **actual** jobs. For example, engineers may be promoted to increasingly important management positions. In these positions his technical training becomes less relevant. New skills are required in managing personnel, funds, inter-personal relations, etc. Successful modern organizations invest considerable resources in

⁷ The future role of the private sector is an important associated issue being addressed under another USAID-supported study. One could argue that in future, all mesqa-level improvements should be done by water users associations contracting with private firms, following guidelines and regulations established by the Ministry.

continuous training of staff to ensure people do have the skills needed. In addition, the questions discussed above for the Ministry level, regarding the mix of disciplines, number of staff required, etc, need to be addressed carefully.

IIMI proposes to investigate, on a limited sample basis, the match between actual jobs and the skills required for these jobs, and whether the Ministry's training programs adequately provide training in these skills.

b. Management and process issues

Decision-making, communication and information flows. The level of decision-making identified above is particularly relevant at the level of the Directorate: do the staff at Directorate level have the appropriate authority for decision-making, or are decisions taken at either too high or too low a level? Another important issue is whether Directorate staff are making sufficient use of data from the telemetry system, and whether they could improve the quality of decision-making by using computer-based decision-support systems. A third issue is the extent to which water users should have a role in decisions about operations, and maintenance priorities. Related closely to these issues, there are preliminary indications that communications between the central level of the Ministry and the Directorates, between Directorates and special projects, and between Directorates and water users may not be very effective.

IIMI will attempt to understand the effectiveness of communication flows and the quality and basis for decision-making and suggest measures for improvement.

Irrigation operations. The shift to market-based cropping patterns by itself raises important issues for operating the irrigation system. The introduction of the "IIP package" including single-point pumping, water users associations, and continuous flow in the main system raise even more issues about how the system can be best operated. At the same time, the availability of simulation models, flow data from the telemetry system, and improved maintenance management systems can lead to substantial improvements in water delivery service. But making best use of these opportunities will require the development of new operational policies and establishing new operating rules. Institutionalizing the approach to maintenance being implemented under the Preventive Maintenance program is also an important objective.

IIMI proposes to examine these issues in some detail and help the Ministry develop a more effective program for improving irrigation operations⁸.

⁸. At a meeting of the Water Resources Management Steering Committee on February 15, 1995, it was suggested that IIMI could play a more active role in assisting the integration of the ISM Project package in one or more of what has been called "ideal" commands.

IIP expansion. The Ministry is working to expand the IIP program to more areas of the country, and has enlisted the support of other donors in this endeavor. But there is some concern about whether the Ministry will be able to muster sufficient well-trained staff, and manage such an expansion effectively. Preliminary indications also suggest the pressures to achieve construction targets may be leading to farmers being "pressured" to accept the whole package. The question of the best organizational arrangement for expanding IIP needs further thought, as does the question of the future "home" and role of the Irrigation Advisory Services.

IIMI will work with the Ministry to explore alternative arrangements for expanding IIP. Possibilities include greater use of private firms in future, better targeting of IIP on a command basis and in areas with the largest payoffs (and most interest by farmers), and considering implementation of components (for example continuous flow) on a larger scale to spread the benefits more widely.

E. Process and Methodology: Developing a Plan for Improved Irrigation Operations

The Plan for Improved Irrigation Operations will be based largely on the conclusions and recommendations of the diagnostic phase of the Study. It will provide a set of recommended actions and implementation strategies and attempt to identify who should do what, and in what sequence and time frame. As the Program Description notes, ideally this Plan should be developed by those who will implement it. Therefore, the Task Force on Irrigation Operations, guided by the Steering Committee, will play a key role in developing this Plan, assisted by the IIMI team.

The overall sequence of activities in this diagnostic phase will be:

- * Preparation of detailed outline of Plan with assistance of Task Force (April)
- * Review of outline by Steering Committee
- * Assignment of chapters to IIMI team members and task force members
- * Identification of additional Egyptian expertise required if necessary
- * Interviews, discussions with officials and other possible contributors
- * Preparation of draft chapters
- * Discussion with Steering Committee
- * Elaboration and revision into an integrated draft plan
- * Workshop with senior and middle-level irrigation managers (June)
- * Further revision of draft plan
- * Workshop with Steering Committee and other officials and invited experts (July)
- * Discuss with Steering Committee to get guidance on final plan, if necessary
- * Preparation of final *Plan for Improved Irrigation Operations in Egypt* (July)

Early drafts and recommendations will be made available to the Ministry and USAID as necessary and possible, to expedite the design of the proposed Water Resources Management Project. The IIMI team will provide as much assistance as possible in preparation of the Project Paper.

6. EXPECTED OUTPUTS AND IMPACTS

As shown in the Schedule of Activities in Appendices III and IV, the Study expects to hold five major workshops and produce six major reports. With one exception noted below, the participants in all of the workshops will include senior Ministry officials and other Egyptian experts, senior officials from other Ministries as decided by the Steering Committee, USAID officials, and IIMI team members. Appendix V contains the proposed dates of these workshops.

A. Planned Written Outputs

The planned major written outputs are as follows:

1. *Work Plan for Study on Strengthening Irrigation Management in Egypt: A Program for the Future*

This consists of the final version of the present document.

2. *Report on Objectives for Improved Irrigation Operations in Egypt*

This report will analyze IMS experiences from an institutional perspective, identify objectives for a future program, and provide recommendations on areas requiring further attention through the proposed Water Resources Management Project.

3. *Report on Plan for Improved Irrigation Operations in Egypt*

This report will describe a set of detailed plans to implement the recommendations identified in the previous report. These plans are expected to be central to the design of the Water Resources Management Project. Some elements from the reports on cost recovery issues may also be incorporated into this plan. IIMI proposes to have this report translated into Arabic for wider dissemination.

4. *Report on Analysis of Cost Recovery for Egypt*

This report will describe the results of analytical and updating work, including results from modeling, on such issues as costs of OM&R, allocation of costs among sectors, and estimates shares of OM&R costs above the mesqa that must be recovered directly or indirectly from beneficiaries, or provided by government subsidies.

5. Report on *Cost Sharing Mechanisms and Phasing: A Proposal for Egypt*

This report will propose practical and feasible institutional mechanisms for cost sharing and phasing, including criteria for allocating irrigation water, rights and responsibilities of water users associations, and the relationship between these entitlements and a cost recovery program, for consideration by Egyptian policy makers.

6. Report on *Cost Recovery from Non-Agricultural Users: Findings and Recommendations Based on a Comprehensive Desk Study.*

This report will develop a framework for assessing the policy implications of water resource cost recovery programs from all users, review existing and likely future demands, suggest alternative phasing options and sharing mechanisms and their feasibility, and identify further data and analytical requirements.

7. Report on *Synthesis of Lessons Learned and Recommendations from Implementation of the Study.*

About two months after the end of the Study, IIMI will write a brief final report identifying the lessons learned from the Study and recommendations for future activities. The time spent on this report will not be charged to USAID.

B. Planned Workshops

The planned workshops are as follows:

1. Workshop on Achieving a Common Vision (March)

As noted in chapter 3, the primary objective of this workshop will be to try to develop a common vision or mental picture of what Egypt should try to achieve in terms of water resources and irrigated agriculture over the next two decades. This will provide a sense of direction for the remainder of the Study.

2. Workshop on Irrigation Operations: Objectives, Strengths and Opportunities (April)

The primary objective of this workshop will be to reach agreement on the conclusions and recommendations contained in the draft report on *Objectives for Improved Irrigation Operations in Egypt*. These recommendations will form an important basis for the first stages in conceptualizing the proposed Water Resources Management Project.

3. **First Workshop on Irrigation Operations: Plans for the Future (for middle- and senior-level irrigation managers) (June)**

The primary purpose of this workshop will be to present the draft report on *Plan for Improved Irrigation Operations in Egypt* to middle and senior level irrigation managers, in order both to introduce it to them, and to obtain their suggestions for further improvement.

4. **Second Workshop on Irrigation Operations: Plans for the Future (July)**

The primary purpose of this workshop will be to reach agreement on the major recommendations and plan in the draft report, *Plan for Improved Irrigation Operations in Egypt*, which will be a central component of the proposed Water Resources Management Project to be supported by USAID.

5. **Workshop on Cost Sharing Mechanisms and Phasing Options in Egypt and Selected International Experiences with Cost Sharing and Recovery⁹ (May)**

The primary objective of this workshop will be to consider the relevance of selected international experiences with cost recovery and sharing relevant to Egypt, and to reach agreement on the conclusions and recommendations in the three planned reports on cost recovery and cost sharing mechanisms and options.

The Workshops will be used to fully discuss, correct, revise and improve the draft reports prepared by the study, with the objective of achieving agreement on their contents as representing Ministry views. This means that each report will go through a rigorous process of review and revision.

C. Anticipated Impacts

In the final analysis, the primary value of this Study will be to get the full involvement and participation of the Ministry and USAID in a manner that will lead to a large degree of commitment to the conclusions, recommendations, and plans emerging from this Study. This process should also result in *better* as well as broadly accepted conclusions and recommendations, as a result of the participatory process. The Study will endeavor to achieve the following impacts:

⁹ This will combine three workshops previously proposed as separate ones.

- * a clearer picture of future policy directions, options, and tradeoffs;
- * a broad consensus at the Ministry regarding these future policies;
- * agreement on the strategies and activities required over the next few years to set Egypt on the agreed path; and
- * a draft plan of action based on this agreement, which can be made a central component of the proposed Water Resources Management Project.

If the Study is successful, these outputs should be of major interest to Egypt.

APPENDICES

MEMBERS OF THE *STEERING COMMITTEE*

The IMS High Coordinating Committee Chairman	Coordinator
The Chairman of the National Water Research Center	Member
The Head of Planning Sector	Member
The Head of Irrigation Department	Member
The Head of Irrigation Sector	Member
The Monitoring Office Chief for IMS	Member
The Head of Central Management for Minister's Office	Member
The Irrigation Improvement Project Director	Member
The Main System Management Director	Member
A USAID Representative	Member
The IIMI Team Leader	Member

The Committee may solicit assistance from any other appropriate person as needed.

Source: Ministerial Decree No. 373/1994.

MEMBERS OF THE TASK FORCES

Group I: Irrigation Operations Study

Eng. Hessein Elwan	General Manager of Water Distribution in the Irrigation Sector (Coordinator)
Eng. Khaled Bekheit	Irrigation Improvement Project
Eng. Mahmoud El-Sayes	Irrigation Department
Eng. Tarek Hanafy	
Selim Kotb	Irrigation Department
Eng. Fayek Amin Fareg	Planning Sector
Eng. Kamel Mostafa Amer	National Water Research Center
Eng. Ragab Abd El Azim**	Central Directorate for Water Distribution

Group II: Cost Recovery Study

Eng. Kamal Anani	General Manager, Project Preparation Department (Coordinator)
Dr. Lotfy Nasr	National Water Research Center
Eng. Samir Mohammed Ahmed	Project Preparation Department
Eng. Shinnawi Abd El Aty	
El Shinnawi	Irrigation Improvement Project
Eng. Soraya Abd Elwan	Irrigation Improvement Project
Eng. Fawzy Mohammed	
Ibrahim Khalil	Project Preparation Department
Eng. Mohammed Hamed	
Abdel Latief	Planning Sector
Eng. Baha Ghonem*	Project Preparation Department
Eng. Hoda Salah El Dien*	Project Preparation Department

* Members added to Task Force in February 1995.

**Member proposed to be added in March 1995.

Source: The Steering Committee Meeting Minutes of the Study by IIMI dated January 2, 1995.

Appendix III

Detailed Schedule of Activities and Staff Assignments

	Start	End	Dur'n Weeks	Steer Com	Co- Team Leader	IIMI STAFF							Foreign Consultants							Task Force			Local Consultant		
						DM	CP	MS	JB	RS	JR	RV	RC	AI	MS	DS	PSR	CL	OPn	CR	Econ	Eng	Inst	Soc	Fin
Egypt Plan																									
1. PREPARATORY ACTIVITIES																									
- Establish links with USAID and GoE	1-Jan	18-Mar	10.9																						
- Establish Steering Committee	1-Jan	31-Jan	4.3																						
- Set up IIMI and Liaison Offices	5-Jan	16-Feb	6.0																						
- Appoint Task Force	2-Jan	2-Jan		**																					
- Prepare TOR for Consultants	1-Jan	28-Feb	8.3																						
- Recruit National Staff	1-Jan	28-Feb	8.3																						
- Draft WP to USAID & SteerCom	31-Jan	31-Jan																							
- Briefing to Ministry	31-Jan	31-Jan																							
- SteerCom Approval of WP	9-Feb	9-Feb		**																					
- Finalize work Program	10-Feb	16-Feb	0.9																						
- Achieving a Common Vision	18-Feb	18-Mar	4.0	**												**	**								
- Preparation for Workshop	18-Feb	2-Mar														**	**								
- Hold Workshop	9-Mar	11-Mar	0.3													**	**								
- Report Findings of Workshop	12-Mar	18-Mar		*																					
- Discuss with SteerCom	18-Mar	18-Mar	0.0	*																					
+ 2.0 MAIN ACTIVITIES																									
+ 2.1 Improved Irrigation Operations	15-Jan	30-Jul	28.0																						
+ 2.1.1 Definition of Objectives	15-Jan	30-Jul	16.0																						
+ Review Existing Information on IMS	15-Jan	4-Mar	6.9																						
- Prepare Questionnaire for MPWWR/USAID	15-Jan	28-Jan	1.9																						
- Assign data collection to Task Force	15-Jan	21-Jan	0.9																						
- Interview Project Director/TA Team	29-Jan	4-Mar	4.9		*																				
- Interview MPWWR Officials	29-Jan	4-Mar	4.9		*																				
- Interview other Agency Officials	29-Jan	4-Mar	4.9		*																				
- Interview USAID Officials	29-Jan	4-Mar	4.9		*																				
- Review Reports on IMS Components	15-Jan	18-Feb	4.9		*																				
- Review Evaluations of IMS Components	15-Jan	18-Feb	4.9		*																				
- Interview Field Staff and Farmers	29-Jan	4-Mar	4.9																						
- Discuss with SteerCom	4-Mar	4-Mar	0.0	*	**																				
+ Collate Information	5-Mar	11-Mar	0.9		*																				
- Status and Output of IMS	5-Mar	11-Mar	0.9		*																				
- Successes and Failures	5-Mar	11-Mar	0.9		*																				
- Institutional Issues	5-Mar	11-Mar	0.9		*																				
- Constraints and Strengths	5-Mar	11-Mar	0.9		*																				
- Future Plans for IMS Activities	5-Mar	11-Mar	0.9		*																				
- Discuss with SteerCom	11-Mar	11-Mar	0.0	*	**																				
+ Analyze Data	5-Mar	22-Apr	6.9																						
- Establish Criteria	5-Mar	18-Mar	1.9		*																				
- Conduct Analysis	19-Mar	22-Apr	4.9		*																				
- Discuss with SteerCom	22-Apr	22-Apr	0.0	*	**																				
+ Constraints and strengths analysis	12-Mar	3-Apr	3.1																						
- Assign Projects to TF/Team Members	12-Mar	13-Mar	0.1																						
- Compare Conclusions for IMS Projects	14-Mar	27-Mar	1.9																						
- Review by in-country Experts	28-Mar	3-Apr	0.9	**																					
- Discuss with SteerCom	3-Apr	3-Apr	0.0	*	**																				
+ Formulate draft objectives	15-Mar	4-Apr	2.9																						
- Establish Parameters/Criteria	15-Mar	21-Mar	0.9		**																				
- Formulate Objectives	15-Mar	28-Mar	1.9		**																				
- Collate and refine objectives	29-Mar	4-Apr	0.9		**																				
- Discuss with SteerCom	4-Apr	4-Apr	0.0	*	**																				

Key:

** Primary Responsibility

* Participation

	Start	End	Dur'n Weeks	Steer Com	Co-Team	IIMI STAFF						Foreign Consultants						Task Force				Local Consultant			
						DM	CP	MS	JB	RS	JR	RV	RC	AI	MS	DS	PSR	CL	Ofn	CR	Econ	Eng	Inst	Soc	Fin
-Draft Report on Objectives	5-Apr	11-Apr	0.9																						
+ Objectives Workshop	29-Mar	23-Apr	3.6																						
-Preparation for Workshop	29-Mar	11-Apr	1.9																						
-Hold Objectives Workshop	15-Apr	16-Apr	0.1																						
-Report Findings of Workshop	17-Apr	23-Apr	0.9																						
-Discuss with SteerCom	23-Apr	23-Apr	0.0																						
-Final Report on Objectives	23-Apr	7-May	2.0																						
+2.1.2 Plan for Improved Operations	16-Apr	30-Jul	15.0																						
+ Prepare detailed Outline	16-Apr	25-Apr	1.3																						
-Define Plan Components	16-Apr	23-Apr	1.0																						
-Define Plan Parameters	16-Apr	23-Apr	1.0																						
-Assign tasks to Task Force/Team	24-Apr	25-Apr	0.1																						
-Discuss with SteerCom	25-Apr	25-Apr	0.0																						
+ Prepare Draft Sections of Plan	25-Apr	13-Jun	7.0																						
+ Define Components	25-Apr	23-May	4.0																						
-Formulate Activities	25-Apr	23-May	4.0																						
-Identify Institutional Actions	25-Apr	23-May	4.0																						
-Estimate Resource Requirements	25-Apr	16-May	3.0																						
-Establish Priorities	25-Apr	16-May	3.0																						
+ Implementation	23-May	13-Jun	3.0																						
-Define Timeframe for Implementation	23-May	6-Jun	2.0																						
-Assign Responsibilities for Program Implement	23-May	13-Jun	3.0																						
-Develop M&E Program	23-May	13-Jun	3.0																						
-Discuss with SteerCom	13-Jun	13-Jun	0.0																						
+ Draft Plan	23-May	27-Jun	5.0																						
-Assemble Task Force Outputs	23-May	13-Jun	3.0																						
-Clarify and Refine	13-Jun	27-Jun	2.0																						
-Develop Total Plan	23-May	20-Jun	4.0																						
-Review by SteerCom	20-Jun	27-Jun	1.0																						
+ Workshop with Managers	21-Jun	6-Jul	2.1																						
-Preparation for Workshop	21-Jun	27-Jun	0.9																						
-Hold Workshop	29-Jun	30-Jun	0.1																						
-Report Findings of Workshop	1-Jul	6-Jul	0.7																						
-Discuss with SteerCom	6-Jul	6-Jul	0.0																						
+ Workshop for Policy Makers	21-Jun	16-Jul	3.6																						
-Preparation for Workshop	21-Jun	3-Jul	1.7																						
-Hold Workshop	8-Jul	9-Jul	0.1																						
-Report Findings of Workshop	10-Jul	16-Jul	0.9																						
-Discuss with SteerCom	16-Jul	16-Jul	0.0																						
-Finalize Plan	16-Jul	30-Jul	2.0																						

Key:

•• Primary Responsibility

• Participant

	Start	End	Dur'n Weeks	Steer Com	Co- Team	IIMI STAFF							Foreign Consultants							Task Force			Local Consultant																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
						DM	CP	MS	JB	RS	JR	RV	RC	AI	MS	DS	PSR	CL	OPn	CR	Econ	Eng	Inst	Soc	Fin																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
+ 2.2 Cost Recovery	1-Feb	24-Jun	20.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															

Key:

•• Primary Responsibility

• Participation

Page 3

Appendix IV

**Summary Schedule
of
Activities**

IMI Egypt Schedule

2-11-95

1

NAME Dec 1994 26 2 9 16 23 30 6 13 20 27 6 13 20 27 3 10 17 24 1 8 15 22 29 5 12 19 26 3 10 17 24 31 7 14 21 28 4 Sep

- + Egypt Plan
- + 1.:PREPARATORY ACTIVITIES
 - Establish links with USAID and GoE
 - Establish Steering Committee
 - Set up IMI and Liason Offices
 - Appoint Task Force
 - Prepare TOR for Consultants
 - Recruit National Staff
 - Draft WP to USAID & SteerCom
 - Briefing to Ministry
 - SteerCom Approval of WP
 - Finalize work Program
- + Achieving a Common Vision
- Preparation for Workshop
- Hold Workshop
- Report Findings of Workshop
- Discuss with SteerCom
- + 2.0:MAIN ACTIVITIES
- + 2.1:Improved Irrigation Operations
- + 2.1.1:Definition of Objectives
- + Review Existing Information on IMS
 - Prepare Questionnaire for MPWR/USAID
 - Assign data collection to Task Force
 - Interview Project Director/TA Team
 - Interview MPWR Officials

FOCUS

▼ : Milestone

■ : Critical

... : Normal

»»» : Actual Progress

» : Resource Delay

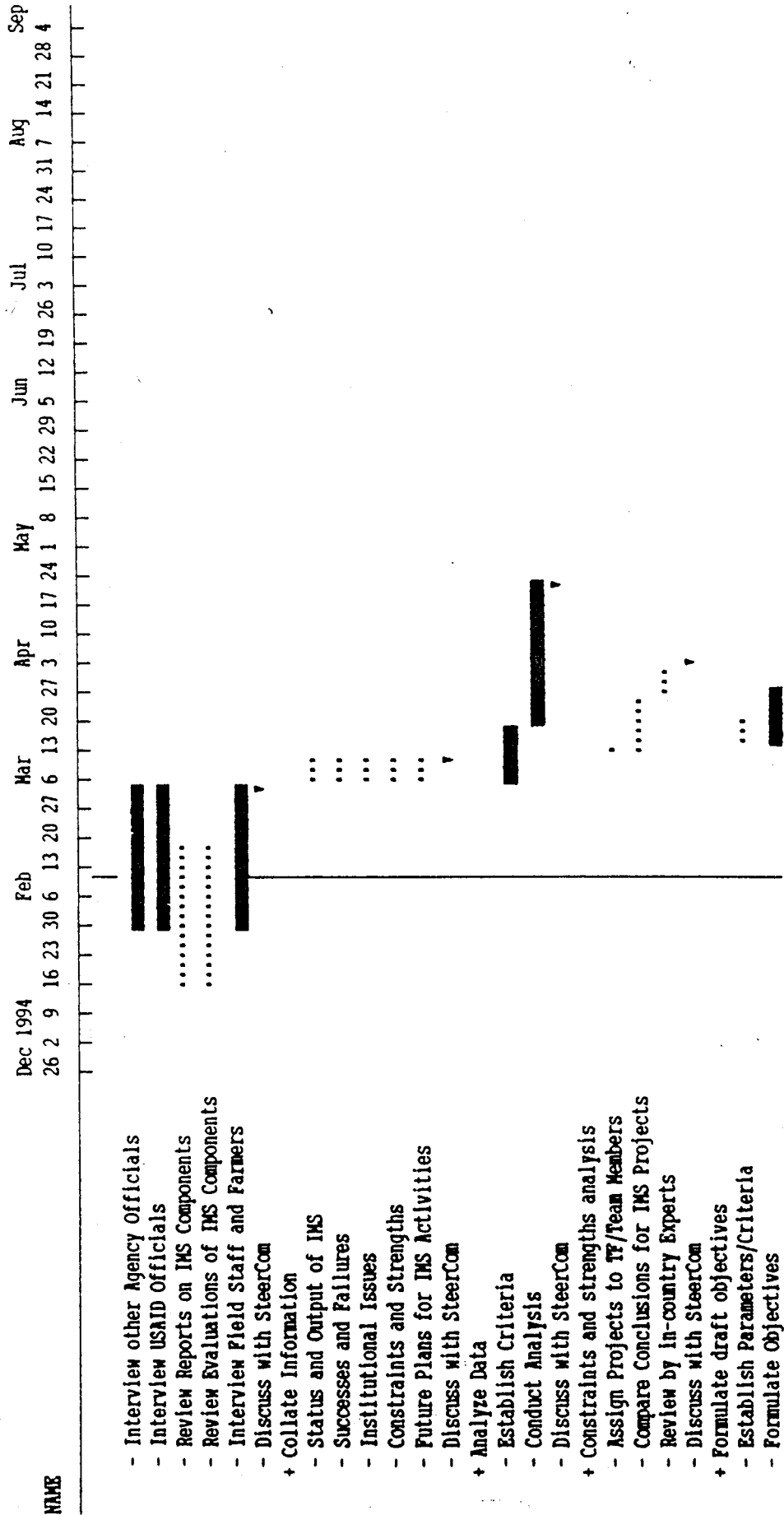
: Slack

Scale: 1 Week = 3 character(s)

IMI Egypt
Schedule

2-11-95

2

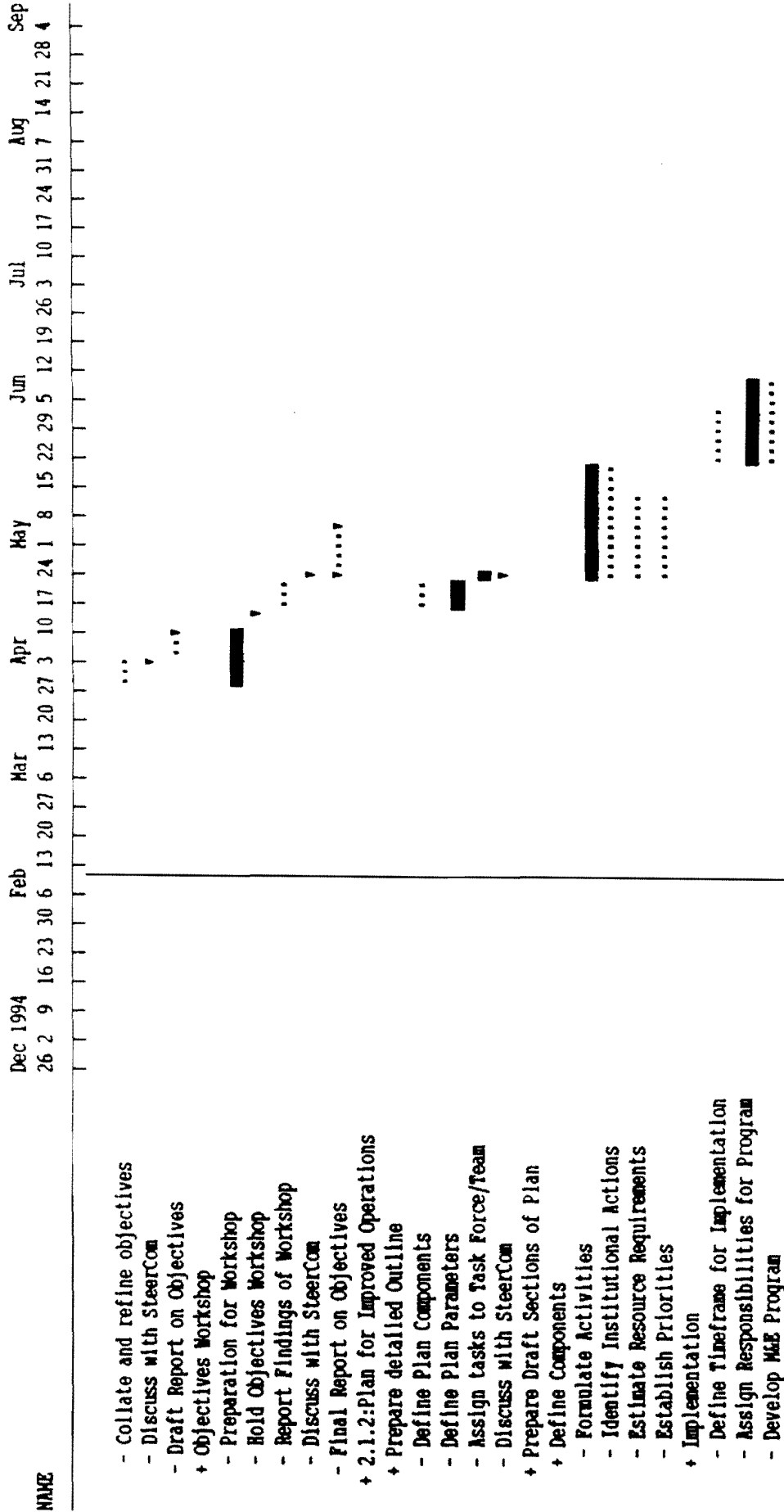


FOCUS
v : Milestone ■ : Critical ... : Normal »»» : Actual Progress » : Resource Delay : Slack Scale: 1 Week = 3 character(s)

IMI Egypt Schedule

2-11-95

3

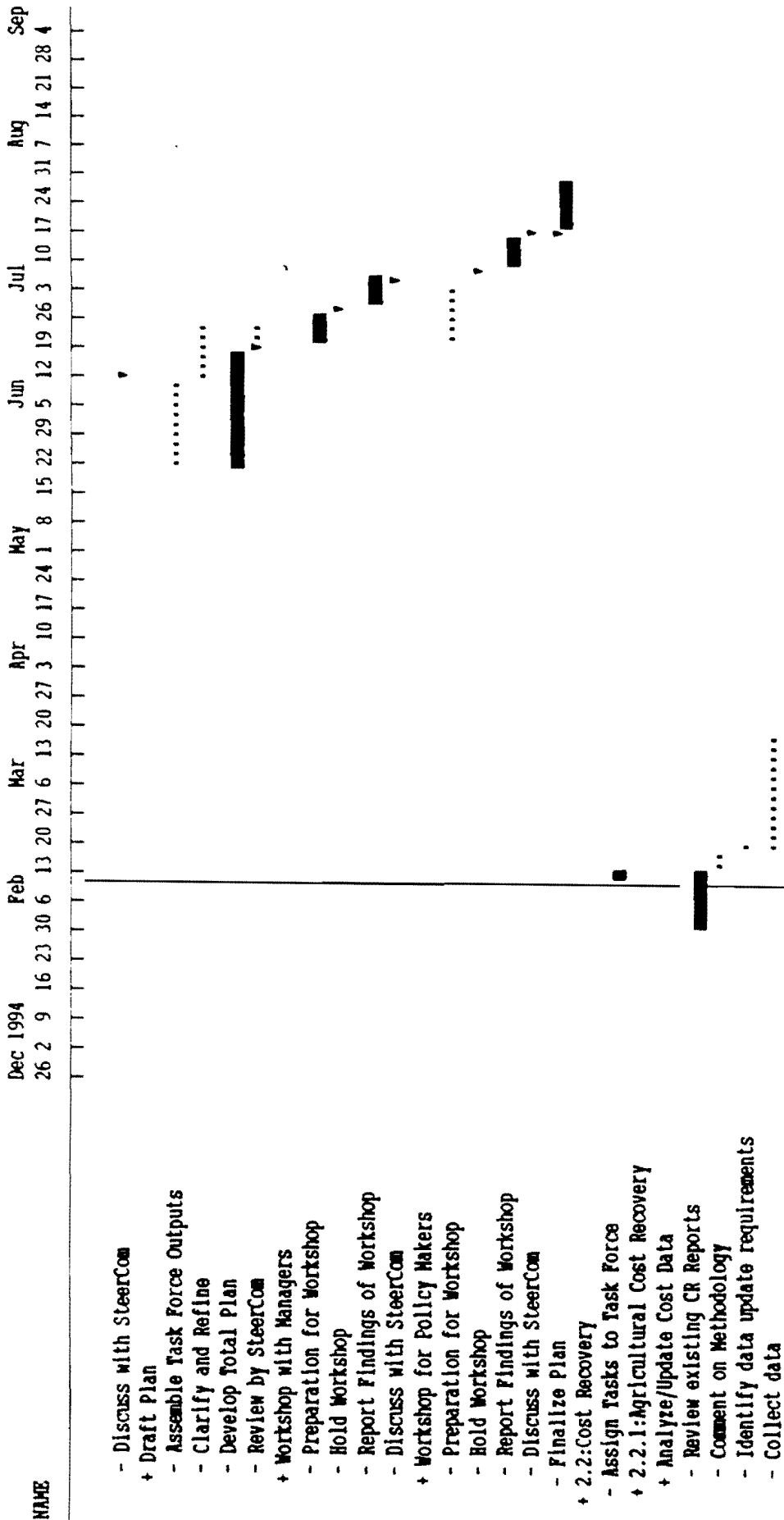


FOCUS
 v : Milestone
 ■ : Critical
 ... : Normal
 »»» : Actual Progress
 : Resource Delay
 : Slack
 Scale: 1 Week = 3 character(s)

IMI Egypt Schedule

2-11-95

4

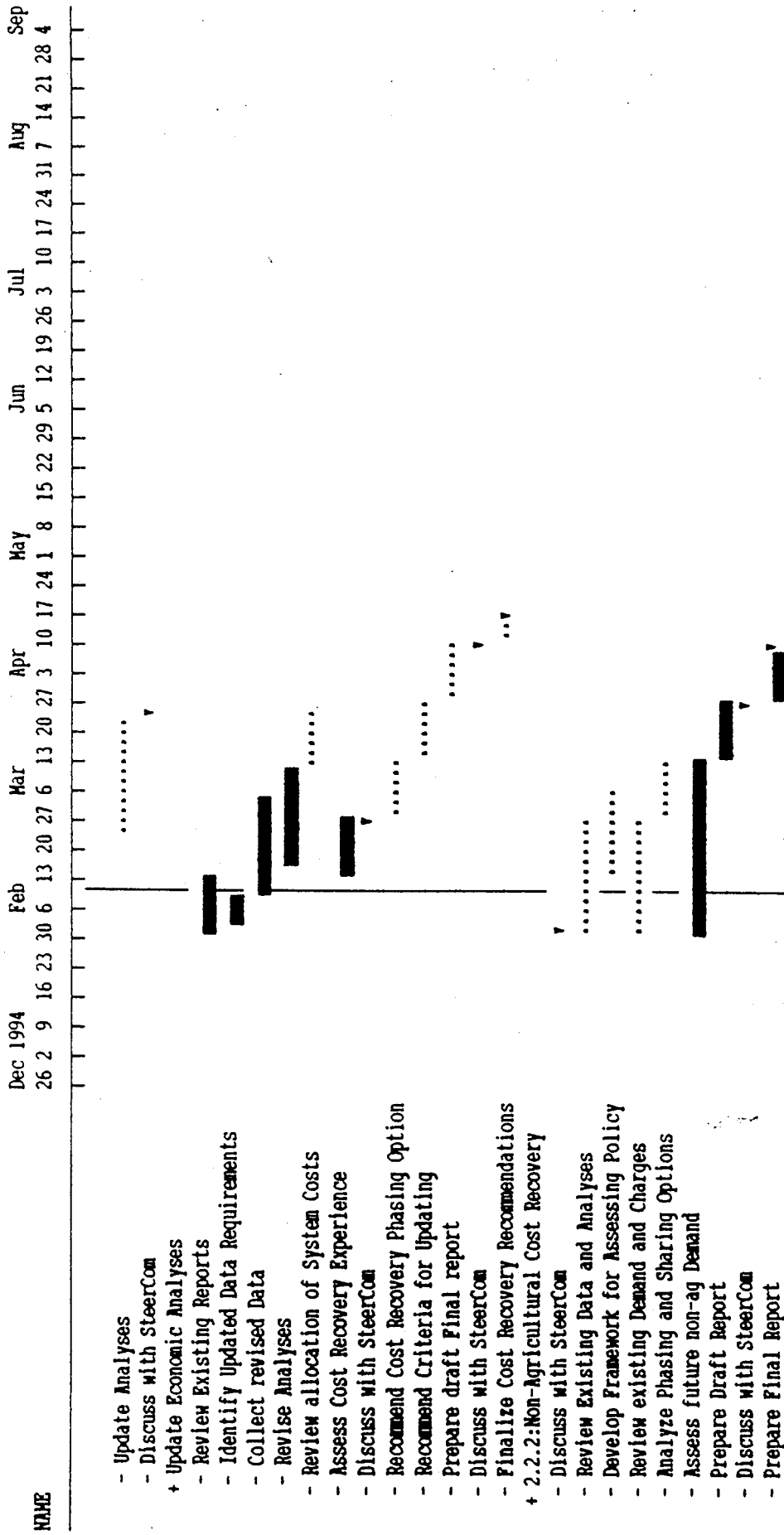


FOCUS
 v : Milestone
 ... : Normal
 ... : Critical
 >>> : Actual Progress
 >>> : Resource Delay
 : Slack
 Scale: 1 Week = 3 character(s)

IIHI Egypt Schedule

2-11-95

5

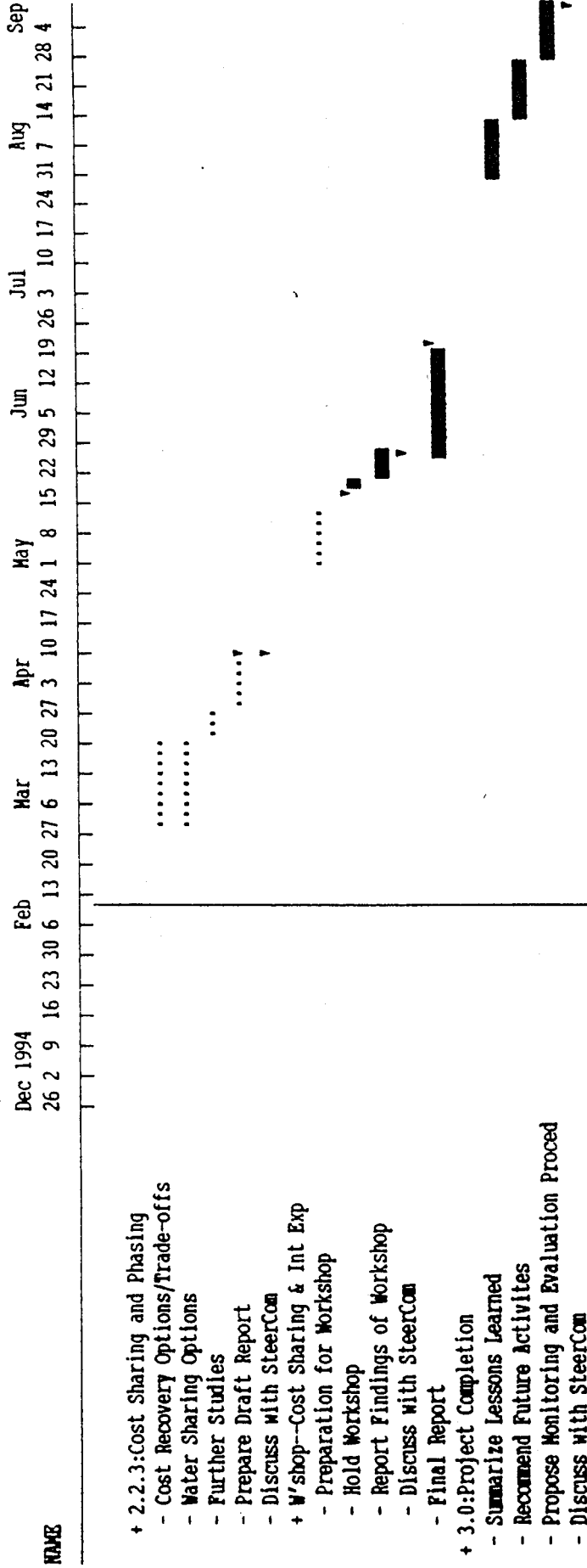


FOCUS

▼ : Milestone ■ : Critical ... : Normal »»» : Actual Progress »» : Resource Delay : Slack

Scale: 1 Week = 3 character(s)

IMI Egypt
Schedule



FOCUS
v : Milestone ■ : Critical ... : Normal >>>> : Actual Progress >>> : Resource Delay : Slack Scale: 1 Week = 3 character(s)

PLANNED WORKSHOPS AND PROPOSED DATES

Name of workshop	proposed dates	arrival, departure
1. Achieving a Common Vision (senior officials)	9-11 March	arr 9th, dep. 12th
2. Irrigation Objectives (senior officials & experts)	15-16 April	arr 14th, dep 17th
3. Cost Sharing and Phasing, & International Experiences (senior officials & experts)	17-19 May	arr 16th, dep 20th
4. Irrigation Operations Plan (for middle managers)	29-30 June	in or near Cairo
5. Irrigation Operations Plan (for senior officials & experts)	8-9 July	arr 7th, dep 10th
=====		

NOTES:

Date of first workshop was confirmed at 9 February 1995 Steering Committee meeting. Dates of other workshops are tentatively confirmed. Location to be decided, but all except the Workshop on the Irrigation Operations Plan for middle managers will be held outside Cairo.

REVISED STAFFING PLAN (INTERNATIONAL)

Name	person-months	Dates (estimated) (travel incl'd)
<u>Consultants (name, specialty)</u>		
R Vissia, water resources specialist	5.0	1/18 to 3/13 4/10 to 7/12
R Cestti, non-agric. cost recovery specialist	3.0	2/4 to 5/6
A Hutchens, agric. cost recovery specialist	2.0	2/2 to 3/15 5/8 to 5/22
P S Rao, human resources specialist	2.0	2/18 to 3/20 5/1 to 5/29
C Lewis, financial management specialist	1.5	3/4 to 4/10
M & D Svendsen, workshop facilitators	3.5	3/1 to 3/18 4/9 to 4/19 5/11 to 5/18 6/24 to 7/15
J Gerards, cost recovery (workshop on international experiences)	0.5	5/12 to 24
[to be named], cost recovery (workshop on international experiences)	0.5	5/17 to 24
=====		
TOTAL P M	18.0	

Name	person-months	Dates (est.) (travel incl'd)
<u>IIMI Senior Staff (name, specialty)</u>		
D Merrey, team leader & institutions specialist	7.0	December 94-July 95
M S Shafique, irrigation engineer	3.0	1/18 to 2/20 3/4 to 3/24 4/6 to 4/20
R Sakthivadivel, irrigation engineer	3.0	4/12 to 7/15
C Perry, economist	4.0	16/1 to 13/3 April, May, July as needed
J Brewer*, institutions specialist	4.0	2/13 to 3/1 3/19 to 4/24 5/6 to end July
J Rey, management information specialist	1.0	2/26 to 3/24
D Renault, management information specialist	1.0	May-June
=====		
TOTAL P M	23.0	

*Acts as Team Leader when D Merrey is absent.