



**WORKSHOP FOR DEVELOPING  
POLICIES AND STRATEGY  
FOR NATIONWIDE IRRIGATION AND  
MANAGEMENT TRAINING**

**INDIA**

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**USAID**

**WATER MANAGEMENT SYNTHESIS II PROJECT  
WMS REPORT 62**

WORKSHOPS FOR DEVELOPING POLICY AND STRATEGY  
FOR NATIONWIDE IRRIGATION AND MANAGEMENT TRAINING

USAID/INDIA

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## PREFACE

This study was conducted as part of the Water Management Synthesis II project, a program funded and assisted by the United States Agency for International Development through the Consortium for International Development. Utah State University, Colorado State University and Cornell University serve as co-lead universities for the Project.

The key objective is to provide services in irrigated regions of the world for improving water management practices in the design and operation of existing and future irrigation projects and give guidance for USAID for selecting and implementing development options and investment strategies.

For more information about the Project and any of its services, contact the Water Management Synthesis II Project.

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The authors also wish to express appreciation for the support of USAID/India and its staff and of AID/Washington. Appreciation is also expressed to the leaders of the WMS II project listed in the preface.

## FOREWORD

In considering a process for generating improved water management in developing countries, WMS II leaders identified "Training" generally as a major activity of the Project. More specifically, for improved irrigation water management to become an active program in any country or state, the decision makers and their high-level officers and advisers must understand and support the program in competition with other high priority claimants to already short resources of money and people. In order to explore how this might be accomplished, and, if the opportunity arose, actually support implementation; a subactivity, "Senior Officers Training" was planned.

Concurrently, Government of India and USAID/India were finalizing the design and implementing the AID-supported "Irrigation Management and Training Project" (IMTP). This large and complex activity involves five states and four universities as well as the Central government. The World Bank is also involved in collaborative support of such elements as physical infrastructure and establishment. This setting provided an obvious testing ground for the "Senior Officers" activity and WMS II and USAID agreed that WMS II would attempt to organize and hold "Senior Officers Workshops" in irrigation water management in India to facilitate implementation of IMTP. Responsibility for managing the effort in-country was entrusted to a highly experienced retired senior Indian officer under a consulting agreement with the Consortium for International Development. He was supported by WMS and USAID staff. This publication summarizes that effort.

The publication is designed to serve two purposes: (1) the final report for the WMS II Senior Officers Training activity; and (2) a report of the consultant to concerned Indian officials of the proceedings and findings of the workshops. A short Executive Summary is included in the first part of the publication. This is followed by the consultant's report.

## EXECUTIVE SUMMARY

This document serves as the final report of the "Senior Officers Training" activity of the Water Management Synthesis II Project whose general purpose was to seek ways to increase the awareness of senior officers responsible for irrigation about the potential provided by improved water management. As things turned out, the senior officers workshop program in India constituted the sole effort under this activity. The Indian workshop activities are described and an attempt is made to summarize lessons learned.

### The Indian Workshops

Utah State University was given the leadership for the Indian workshop program with Dean Peterson as coordinator. Mr. M. N Venkatesan, a senior retired irrigation officer, was retained as a consultant and given the responsibility for detailed implementation. Max Lowdermilk represented USAID. Peterson provided consulting assistance during October 1983 and again during January and February 1984.

Many high-ranking officials at first resisted the idea of holding any workshops for senior officers feeling that they were already adequately informed on irrigation matters. The first major task of the consultant was to persuade these officers that there was indeed a definite need for the workshops. After considerable discussion, GOI, and concerned States and USAID agreed that a Project Orientation Workshop would be held in each of the five states participating in AID's Irrigation Management and Training Project (IMTP) and that the scope would be limited to discussing means for implementing the IMTP. Following the State workshops a "wrap-up" at Delhi would review conclusions and recommendations, and define procedures for implementation. The two-day State workshops were held during Winter and Spring, 1984; but the wrap-up was not held until 26 February 1986.

Considerable effort went into preparing background materials including specially prepared "Lead Papers," which were distributed to participants in advance. A suggested list of topics for discussion was provided with the participants' registration documents. Some video material on irrigation water management was displayed during discussion breaks at the state workshops. The overall effort was successful in obtaining the participation of virtually all of the concerned senior officials in each state and at the Center wrap-up session. Discussions were lively and evaluations showed that a majority of the participants agreed that the workshops met their objectives and were generally interesting and useful. The IMTP is a very complex project involving many institutional interactions. For example, the procedure for transferring grant funds from the Treasury Department to the State Training Institutes took more than a year to resolve. There can be little doubt that the workshop effort contributed substantially to the smoother implementation of IMTP.

Because the main report is relatively short, no attempt will be made to summarize the numerous conclusions and recommendations. They range from procedural matters, training of trainers, and structure and content of courses and organization.

### Lessons Learned

The comments that follow are based on the Indian experience, but they are probably largely valid in most other countries also.

High-ranking senior officers will not be interested in training type activities for themselves unless they participate fully in defining the terms of reference and developing the agenda. The activity must be in the workshop mode with fully open discussion. Though introductory material and explanations are appreciated, the tutorial approach is not acceptable. Two days is the likely maximum time for such people.

As far as donor agencies such as AID are concerned, high ranking officers will be interested only in matters which are urgent to their immediate agenda. That training-type workshops for this level of client can be developed by donors outside of the context of an AID-assisted project seems questionable.

High ranking officers are invariably vulnerable to criticism reflecting on their own competence and performance, thus they are properly conscious of any implications that might be pejorative. Thus a workshop on irrigation water management was not acceptable, though one on implementing IMTP was. This concern is reflected in the careful choice of the title "Project Orientation Workshops." The Center shied away even from this title, preferring "Workshop on Policy and Strategy for Training in Irrigation Management." This sensitivity is aggravated if there is excessive expatriate presence, though a modicum of this is appreciated. Using a retired high-level Indian senior officer with the desirable prestige and personal characteristics to discuss the needs and purposes of the proposed activity was an important element in its success.

Carefully planned back-up documentation and thoughtful development of a list of topics needing discussion are also essential components for a successful workshop.

IRRIGATION MANAGEMENT & TRAINING PROJECT  
USAID

WORKSHOPS FOR  
DEVELOPING POLICY AND STRATEGY FOR  
NATIONWIDE IRRIGATION MANAGEMENT TRAINING

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## TABLE OF CONTENTS

	<u>PAGE</u>
CHAPTER I: BACKGROUND . . . . .	1
Introduction. . . . .	1
India's Irrigation Context. . . . .	1
Irrigation Development in India . . . . .	1
Problems in Irrigation Development. . . . .	1
The Growing Involvement of Donor Agencies . . . . .	2
The Irrigation Management & Training Project. . . . .	4
Project Goals & Outputs . . . . .	4
Need for Environmental Build-up . . . . .	5
Organization and Present Status . . . . .	5
Water Management Synthesis Project II . . . . .	6
CHAPTER II: ORGANIZING & IMPLEMENTING THE WORKSHOPS . . . . .	9
Organization of the IMTP Orientation Workshops. . . . .	9
The State Workshops . . . . .	11
Conduct of the State Workshops. . . . .	11
The Central Workshop at Delhi . . . . .	12
Conduct of the Central Workshop . . . . .	12
CHAPTER III: WORKSHOP DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS. . . . .	15
Discussions - The State Workshops . . . . .	15
Conclusions & Recommendations - State Workshops . . . . .	20
Discussions - Central Workshops . . . . .	21
Conclusions & Recommendations - Central Workshop. . . . .	23
CHAPTER IV: EVALUATION OF THE WORKSHOPS . . . . .	27
The State Workshops . . . . .	27
The Central Workshop. . . . .	28
CHAPTER V: CONCLUSION . . . . .	29
Achievements of the Workshops . . . . .	29
Suggestions for Future Action . . . . .	30
Acknowledgement . . . . .	31
ANNEXES. . . . .	33

LIST OF ANNEXES

	<u>PAGE</u>
I. LIST OF PARTICIPANTS - STATE PROJECT ORIENTATION WORKSHOPS . . . . .	33
II. LEAD POINTS FOR DISCUSSION - STATE PROJECT ORIENTATION WORKSHOPS . . . . .	41
III. LIST OF PARTICIPANTS - CENTRAL POLICY AND STRATEGY WORKSHOP. . . . .	45
IV. AGENDA NOTE - CENTRAL POLICY AND STRATEGY WORKSHOP. . . . .	51
V. PURPOSE & OBJECTIVES - CENTRAL POLICY AND STRATEGY WORKSHOP. . . . .	75
VI. WATER MANAGEMENT SYNTHESIS PROJECT II . . . . .	79
VII. CONCLUSIONS & RECOMMENDATIONS - PROJECT ORIENTATION WORKSHOPS . . . . .	83
VIII. GOVERNMENT OF INDIA - MEMORANDUM ON TRAINING. . . . .	87
IX. EVALUTION FORM - PROJECT ORIENTATION WORKSHOP . . . . .	91
X. PROJECT ORIENTATION WORKSHOPS - ANALYSIS OF EVALUATION. . . . .	97
XI. EVALUTION FORM - CENTRAL POLICY AND STRATEGY WORKSHOP. . . . .	107

## CHAPTER I

### BACKGROUND

#### Introduction

"Irrigation, it is true is the most effective method of attaining a significant increase in agricultural productivity; it is at the same time the approach that requires the highest capital investment and the heaviest inputs in trained and experienced human resources to effect the transfer of technology, institution building, introduction of production inputs and changes of attitudes and motivation." (Weiner 1976)

To set the stage for thinking about Weiner's approach to irrigation planning and development in India, it is necessary to examine the trend of irrigation development to date and analyze the problems facing the country in this massive task.

#### India's Irrigation Context

The irrigation development task in India in terms of complexity, size, variability and significance has no equal. India is a world irrigation leader in irrigation development, with much expertise in certain fields (dams and main canals) of irrigation. India's ultimate irrigation potential of about 113 M.ha when fully developed by the end of this century, will be the largest in the world. India's irrigation sector is more complex than in most countries because there are so many types of systems located in many different states which are almost as different as individual countries in other parts of the world. Nevertheless, Indian irrigation engineers, in spite of external pressures and a developing economy, have accomplished a good lot in less than forty years.

#### Irrigation Development in India

With the start of the planning era in 1950-51, increased emphasis was placed on the development of irrigation. As a result, the irrigation potential which stood at 22.6 M.ha at the beginning of the First Five Year Plan (1950-51) has risen by the end of 1985-86 to 68 M.ha. Agricultural production has increased manyfold, thus making the country with a population of 785 million, self-sufficient in food grains.

#### Problems in Irrigation Development

The focus of attention in the 1950s and early 1960s was mainly on increasing the area under irrigation. This was later followed by the

"green revolution;" introduction of improved varieties of seeds, use of fertilizers and pesticides, etc. Although the progress in irrigation development due to all these has been quite encouraging, it is a matter of concern that India suffers from low irrigated agricultural crop yields, low net income per hectare and low irrigation efficiencies. A substantial area of irrigated land has been damaged or put out of production due to man-made problems of waterlogging and salinity.

The seriousness of these problems has been recognized by the Irrigation and Agricultural bureaucracies, and the Government of India is determined to solve them. At a number of conferences, seminars, and workshops held in the 1970s and early 80s, these issues were discussed. It was realized that a different emphasis and a different orientation than in the past would have to be given to irrigation programs. India must find ways to:

- create and implement professional development and training programs for all levels of irrigation and agricultural staff and farmers;
- involve farmers in planning, design, operation and maintenance of irrigation systems, thereby improving operation and reducing irrigation department administrative and labor costs;
- make the Command Area Development (CAD) programs more effective in implementing system rehabilitation and on-farm improvements;
- carry out action research and action programs which involve diagnosis and testing of both social and technical prescriptions;
- conduct project monitoring to provide feedback on how to improve system management;
- focus on a broader role for Universities and Institutes of Management in irrigation management and research;
- develop alternate organizational modes in irrigation and agricultural departments, thus creating and training interdisciplinary cadres for only irrigation management.

### The Growing Involvement of Donor Agencies

With the realization by the irrigation and agricultural officials of the need for a change in strategy in development and operation, there has also been a shift in the approaches of the donor agencies such as the World Bank, United States Agency for International Development (USAID), etc., from construction toward an irrigation-management focus. All now realize that:

"Engineering is not the fundamental problem underlying irrigation development in the LDCs. Engineering principles are known and can be adapted, but the major problem, however, is to

discover ways to utilise farmer clients more effectively in operation and maintenance and development programmes which will create rural transformation. Rural transformation essentially requires changes in farmers' behaviour, motivations and expectations which is hardly possible until institutions exist to provide them with improved production possibilities and incentives..."

(Weiner 1976, p. 22)

Starting in 1956, USAID, in collaboration with most Near East and South Asian countries, held Irrigation Practice (Water Management) workshops in various of these countries. One of these was held in New Delhi in 1964. AID experiences in a number of countries, particularly the Philippines, have resulted in the development of expertise, approaches and lessons vital to irrigation management. All of these paved the way for emerging changes in India's irrigation policy and programmes. The World Bank, as a part of its funding program, helped in the establishment of a Water and Land Management Institute at Aurangabad in Maharashtra in 1980. The main objective was to develop institutional capability to plan, design, construct, operate, manage and maintain efficient and productive irrigation systems.

USAID has been an international leader for over three decades in evolving a definite irrigation management philosophy and an applied irrigation management discipline. Its most significant contributions have been in the area of irrigation water management. This gave increased emphasis to the agricultural production end of the system which had been seriously neglected. Beginning in 1978, in response to a request from the Government of India, USAID/India has responded with an irrigation portfolio of state-specific projects in Gujarat, Rajasthan, Maharashtra, Madhya Pradesh and Himachal Pradesh. These provided for the design, construction and operation of medium and minor irrigation systems; the testing and application of improved technologies; studies and workshops to determine appropriate policies and incentives; and professional development programs for officials responsible for implementing irrigation projects.

Realizing the Indian irrigation management needs for decades to come will require a flexible irrigation management strategy to meet present and changing demands, Government of India and USAID developed a strategy which could produce significant benefits. The direct result of this is the Irrigation Management and Training Project (IMTP) developed collaboratively in 1981 and 1982 by specialists from USAID and central and state officials. The concept comprises an institutional-development-learning process for bureaucratic reorientation, and increased farmer participation as field-tested in the Philippines and Sri Lanka. In addition the research-development process evolved in the 1970s by USAID in Pakistan, tested in the Philippines and improved in Egypt provides philosophy, processes, procedures and principles for an irrigation management strategy. These three approaches have been synthesized and built into the IMTP, to constitute a definite process for evolving and

implementing a sustained irrigation-management strategy.

### The Irrigation Management and Training Project

The Irrigation Management and Training Project (IMTP), was approved by the Government of India in October 1983 and an agreement was entered into with USAID. Under the terms of the agreement, this project is devoted entirely to the development of India's human and institutional resources in the irrigation sector. Through it, AID would work with the Government of India, the state governments of Rajasthan, Gujarat, Maharashtra, and Madhya Pradesh, where AID has active irrigation projects, and with the state Government of Tamil Nadu, where ultimate irrigation potential is essentially fully developed. Massive in-service training would be financed to familiarize responsible individuals with modern irrigation technology and management principles and to reorient the Irrigation and Agricultural Departments toward greater consideration of farmers' needs on actual irrigation systems. Action research in which multidisciplinary teams will work on specific problems over several seasons will be supported on USAID or World Bank assisted projects. In-service training and action research would be implemented by the states through State Training Institutes. The development of an improved national capability in water resources planning and management would also be undertaken. A technology transfer unit will be established at the Central Government level to disseminate results of research programs and other related information to state Irrigation and Agricultural Departments, relevant educational institutions and various interested organizations and individuals. Finally, curriculum improvement programs will be developed in several agricultural and engineering universities to provide a continuing supply of irrigation management oriented graduates.

The project will be a seven-year effort to which AID will contribute \$41 million in grant funds and \$10 million in loan funds. The Government of India will contribute the rupee equivalent of \$28.2 million.

### Project Goal and Outputs

The sector goal to which this project contributes is increased agricultural productivity and rural incomes. Specifically, the project seeks to increase irrigated agricultural production through improved efficiency of irrigation systems and improved productivity of water delivered through irrigation systems to farmers' fields.

The expected outputs from the project include upgraded professional skills in all phases of irrigation systems; organization and procedural changes reflecting a shift in management focus from "administering" water to "meeting" farmers' needs and adoption of a systems approach which considers the interactive effects of engineering, agronomic, economic and social components; reduced water losses within individual irrigation systems; development of more effective water distribution systems; increased participation of farmers in the location of canal outlets and field channels and in the operation and maintenance of the irrigation

systems.

### Need for Environmental Build-Up

The IMTP, as envisaged, is a very complex project. The technical, organizational and procedural innovations proposed to be developed and supported are unique and are very much different from those usually supported by USAID and other international agencies. For effective and speedy implementation, much more innovative and serious thinking is required at the top levels of state and central governments than was required in the earlier projects which were oriented toward physical infrastructure. The approach, as well as the preparatory steps to be taken for this project, are vastly different. It was therefore necessary that senior officials in the states and in the Center who are concerned with irrigation development should be made fully aware of the objectives of the project; thereafter they should be encouraged, by discussions in seminars and workshops, to evolve the steps through which this project could be implemented. This would create a favorable environment at all levels, thus facilitating a smooth execution of the project, with a full appreciation and understanding of the different project components.

### Organization and Present Status

Under World Bank sponsorship several states have established separate State Training Institutes (STIs) for providing in-service training for officials concerned with irrigation. The first of these, the Water and Land Management Institute (WALMI), was established in Maharashtra in 1980. The World Bank is also supporting STIs in Gujarat and Madhya Pradesh. The STIs for Rajasthan and Tamil Nadu are supported exclusively by AID. By agreement with the World Bank, the in-service training and action research components of IMTP are executed in all five of these STIs. At the time of the workshops STIs were in place or sanctioned in all of the participating states. The STIs are normally organized as autonomous institutions with a governing board, the State Technical Council. The Board is usually chaired by the Secretary for Irrigation or an official of similar rank. Its membership includes senior officials of all concerned state agencies, representatives of universities and the STI Director.

Overall responsibility for leadership and coordination lies with the Irrigation Management and Improvement Cell (IRMIC) housed in the Central Water Commission (CWC), the technical arm of the Center Ministry of Water Resources (until recently the Ministry of Irrigation). A Central Steering Committee and a Technical Advisory Committee guide the implementation. Considerable delay was experienced in obtaining official sanction for IRMIC; however, in the meantime the workshops and initial implementation went forward under the direction of a Special Officer temporarily appointed by CWC. The current status of the STIs is reported in Annex IV.

## Water Management Synthesis Project II

To facilitate development of a favorable environment for implementing the IMTP, the Central Ministry of Irrigation and USAID decided that the Water Management Synthesis Project II (WMS II) would be requested to assist in supporting and executing the program described in the previous section. The WMS II is a centrally-funded project developed by the Asia Bureau and the Bureau of Science and Technology, of AID/Washington and is one of the stronger agency support mechanisms in AID's agricultural portfolio. Through WMS II, AID integrated its own activities, those of the participating university and those of a number of host countries to develop an interdisciplinary approach to solving irrigation problems throughout the world. Assistance is furnished to developing countries in building up their capabilities to make irrigation systems more productive. Colorado State University, Cornell University, and Utah State University have been designated lead universities in this project which is administered by the Consortium for International Development under a 1982 agreement. The Project draws principally on the faculty of the three lead universities, who have had extensive experience in India, Indonesia, Pakistan, Bangladesh, Egypt, Philippines, Sri Lanka, Thailand and several other developing countries, some in Latin America and Africa.

The principal expected project outputs from WMS II are:

- (1) A better understanding and appreciation by relevant host country policy-makers, planners, managers and implementors of the importance of:
  - (a) improving irrigation water management;
  - (b) farmer participation in any scheme which aims to improve water management;
  - (c) An interdisciplinary systems approach to such management, including the integration of water-control and agronomics into water-management systems;
  - (d) the relationship between water-users, government agencies and the social and environmental milieu within which both groups operate;
  - (e) constantly improving institutional capabilities or organizations involved in irrigation water-management training programs.
- (2) An institutionalized means for the systematic gathering, evaluating, cataloging, assessing and disseminating of both field-based lessons learned (technologies) and other promising technologies which have not yet been fully tested. This is to be done through special studies, technology transfer workshops, newsletters, special planning-guides and technical manuals.

The technology transfer and institutional development component of this project provides, among others, the following:

"Special workshops designed for key-policy-makers in each country of Asia and USAID officials, to help create awareness for institutional change and understanding of the advances in water-management which contribute to successful projects."

Similar workshops held in other countries earlier by AID, in addition to creating interest and developing a better understanding of the subject, have been helpful in developing coordinated national programs. They have provided a means of helping to change national policy and the allocation of resources towards solving the problems of inefficient use of irrigation water. These workshops have produced significant results and have helped to lay the foundations for many of the technological developments in the field of irrigation taking place today in Asia and other regions.

For implementation, WMS II was organized into three components; training and technology transfer, technical assistance, and special studies. One of the training subprojects decided upon was entitled "Senior Officers Training." The project managers realized that implementation of new programs of irrigation water management throughout the world would require the understanding and support of the top officials in the concerned agencies and in the government generally. The question was: how could these officers be made aware of the new approaches to irrigation water management currently being advanced? Discussions about how this could be done had already begun when the request for assistance was received from USAID/India.

## CHAPTER II

### ORGANIZING & IMPLEMENTING THE WORKSHOPS

#### Organizing of the IMTP Orientation Workshops

Considerable preparatory work by USAID staff and consultants in collaboration with Government of India and State officials was necessary in order to define accurately the scope and format of the effort to be undertaken with WMS II assistance. Eventually agreement was reached that a "Project Orientation Workshop" focusing on implementation of IMTP instead of on irrigation water management more generally, would be held in each state participating in the IMTP. These would be followed by a wrap-up workshop at Delhi. The wrap-up workshop would review the conclusions and recommendations arrived at by the state workshops and to define the steps to be taken for implementation of the project.

The task of organizing these workshops was entrusted to Mr. M. N. Venkatesan, Consultant, who was closely involved with the pre-design and design teams of the IMTP and in the discussions with the states and Central Government in the preparation of the project paper.

The lines on which the workshop were to be organized, the preparation of necessary lead papers, the lists of officials to take part in the discussions, the materials for the discussion etc., were left by WMS II to be decided by the Consultant.

In consultation with Dr. Dean F. Peterson, WMS II, Project Coordinator and Dr. Max L. Lowdermilk, of USAID, the following principal decisions were taken:

- (1) The workshop in each state will be of two days duration;
- (2) Senior officials of the Irrigation, Agriculture, Planning, Revenue and Cooperation Departments will be invited to participate in the workshops;
- (3) Vice-Chancellors of the participating Engineering and Agriculture Universities, and the Heads of Departments of Irrigation and Agricultural Engineering will be invited to take part;
- (4) Representatives of USAID, World Bank and Ford Foundation will be invited as observers;
- (5) A set of lead papers will be prepared on topics connected with the different components of the IMTP Project. This may be circulated in advance of the workshop to enable the participants to make useful contribution to the discussions at the workshop;
- (6) The number of persons participating at each workshop shall normally be around 30;

- (7) To stimulate discussions and to prevent them going outside the objectives of the workshop, a set of lead points may be prepared and circulated at the workshop;
- (8) Each state workshop will have an inaugural session followed by discussion sessions; and
- (9) A set of conclusions and recommendations will be evolved by consensus at the end of each workshop.

At the outset, the Consultant had a very difficult task. Owing to the prevailing opinion at the Center and the State Governments that there was no need for conducting any orientation workshop because irrigation is being practiced now and has been for centuries in India. The Irrigation officials initially did not see the need to involve other agencies in the management of irrigation systems. This was primarily because irrigation officials were not knowledgeable about problems of irrigated agriculture below public outlets. Typical concepts held by many officials included:

- (1) Institutions and professionals are available to provide the service required for improved irrigation;
- (2) Existing water codes are time-tested and adequate;
- (3) Paternalistic modes of doing business will not impede progress in the field of irrigation management;
- (4) Corruption in the departments and incentives to workers is no problem;
- (5) The farmers should not be involved in the planning, design and implementation of irrigation systems as it will lead to slowing down of the project; and
- (6) The farmers are not capable of managing the lower-end of the systems by themselves; etc.

The arguments made by the Consultant were that India's irrigation management needs in the future will require a modification in the strategy to capitalize on improved technologies and to meet changing demands. He explained that there are priority areas with "cutting edges" for rapid changes. These need to be understood and emphasized if improvement is to be effected in the management of India's irrigation systems. These include, among other things, the need for developing a growing number of convinced officials who will be involved in defining new norms, roles, values and attitudes required in all institutions dealing with irrigated agriculture. The aim of the workshops was to identify and highlight these areas, issues and opportunities in each state and to evolve methodologies through which these changes can be brought about.

The discussions with the central and state government officials

revealed the imperative and urgent need to hold the project workshops in the states as well as at the Center. These would create an awareness by the senior officials connected with irrigated agriculture of the need for a radical change in their approach to the management of the irrigation systems and to the necessity for training professionals to meet the challenges not only in the field of improved technology but also in the complex socio-political realities of the irrigation sector.

### Schedule for the State Workshops

The outcome of the Consultant's efforts was that the participating state governments agreed to hold the workshops on dates to be fixed by them, depending on their convenience. Accordingly, the state workshops were held on the dates indicated below:

Tamil Nadu	January 11 & 12, 1984;
Gujarat	January 31 & February 1, 1984;
Maharashtra	February 25 & 26, 1984;
Madhya Pradesh	March 26 & 27, 1984;
Rajasthan	June 14 & 15, 1984.

The delay in Rajasthan was due to the earlier non-availability of the Chief Minister and the Minister for Irrigation who were very keen to participate.

### Conduct of the State Workshops

Invitations to the workshops were sent out to concerned officials by the state participating agency, well in advance of the date of the workshops. Along with the invitation, a set of lead papers was sent to each invitee. These papers, in addition to dealing with specific topics directly connected with IMTP, contained notes on irrigation management generally. The workshops were well attended by senior officials of the respective state governments concerned with irrigated agriculture, representatives of the Central Ministry of Water Resources and Central Water Commission, members of the State Technical Council, senior professionals in the state in the fields of irrigation and agriculture, specialists from the Institutes of Management, Ahmedabad/Bangalore and representatives of AID and other international agencies. A list of participants who took part in the different workshops appears in Annex I.

After registration on the opening day, each participant was supplied with a portfolio containing writing materials, copies of the Project Report and other papers relevant to the workshop. USAID provided some other publications of AID and WMS II. Prior to commencement of each workshop, a document listing important points was issued to assist in guiding discussions. A copy of the "lead" points is contained in Annex II.

Workshops were usually inaugurated by the State Chief Minister or Minister for Irrigation and were presided over by the Member (Water

Resources) Central Water Commission. During the inaugural session, a brief exposition on the objectives, scope and expected outputs of the IMTP was presented by a representative of USAID.

Video films, produced by Colorado State University, on various topics such as "Diagnostic Analysis," "Farmer Involvement," etc., were exhibited as discussion breaks. A brief question-answer session followed each. Clarifications were provided by Dr. Lowdermilk, who had a major responsibility for producing the films. This generated renewed interest and helped the participants to become aware of new concepts for improving irrigation management besides providing a "change of pace." The structure of the discussions is given in Chapter III. Each workshop provided a set of recommendations.

### The Central Workshop at Delhi

The Central Workshop was held at Delhi on 26 February 1986, nearly twenty months after the last state workshop at Rajasthan. In spite of considerable efforts both by the Consultant and the USAID, the then Ministry of Irrigation was unable to fix a suitable earlier date. When a decision was finally taken, the Center decided that the workshop would be called "Workshop on Policy and Strategy for Training in Irrigation Management." Since the aim and intent were the same as originally proposed, this change in the name did not matter. Participants included top level officials from the Central Ministries of Water Resources, Agriculture and Finance, the Planning Commission, the Central Water Commission and the Indian Council for Agricultural Research; the State Secretaries for Irrigation and Agriculture and Chief Engineers of Irrigation; Directors of the State Training Institutes; Vice-Chancellors and senior academics from the Engineering and Agricultural Universities and representatives from the Indian Institutes of Management. In addition, representatives of USAID, World Bank, Ford Foundation and Utah State University, USA, also participated. A list of attendees is contained in Annex III.

### Conduct of the Central Workshop

Along with the invitation to participate in the workshop, copies of the IMTP project paper and Lead Papers prepared for the state workshops and an agenda note on the various issues to be discussed were sent to all invitees. A copy of the Agenda note is contained in Annex IV. On the day of the workshop, after registration, each participant was supplied with a portfolio containing the following:

- (1) A brief note on the purpose and objectives of the workshop - Annex V;
- (2) A short write-up on the WMS II - Annex VI;
- (3) A hand-out describing the state workshops and their conclusions and the recommendations - Annex VII; and

(4) Writing materials.

The workshop was inaugurated by the Secretary, Ministry of Water Resources. The Secretary emphasized the need for effective and economical use of the water resources available in the country. Briefly outlining the development of irrigation in India, he said that although substantial progress has been made in increasing the area brought under irrigation, India has still a long way to go in maximizing production per unit of water used and per unit of land cultivated. He expressed appreciation for the help being rendered in this direction by both USAID and the World Bank.

The Secretary for Agriculture at the outset expressed his happiness at being invited to participate in the workshop. He stressed the need for greater coordination and cooperation between the Irrigation and Agriculture Departments, both at the Center and in the States, to ensure increased production to meet the needs of the growing population of the country. He expressed the view that policy changes which would result in improved incentives for increased production are needed. He pleaded for a systematic transfer and adaptation of improved technologies at lower costs. He hoped that the IMTP Project, with its strong focus on institutional and human development, would go a long way in helping to meet the objectives in the field of irrigated agriculture.

## CHAPTER III

### WORKSHOP DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

#### Discussions at the State Workshops

The working sessions were conducted by the respective Chairperson, State Technical Council. To assist in guiding the discussions at the workshops, as already stated, a set of lead points having the following main heads was circulated:

- (1) General;
- (2) Training in irrigation management;
- (3) Action and adaptive research;
- (4) Linkage with Universities and Institutes of Management;
- (5) Technology transfer;
- (6) Involvement of farmers;
- (7) Organizational and procedural changes; and
- (8) Role of Center.

In addition to the lead points, a number of other relevant questions also came up for discussion. These included:

- (1) What are the priority management deficiencies of irrigation systems for which training is required?
- (2) What new roles and skills are needed?
- (3) Where, by whom, for what skills and how long is training needed?
- (4) What sort of collaboration should be envisaged among the State Training Institutes, Action Research Centers, Engineering and Agricultural Universities and Institutes of Management?
- (5) How best may irrigation management be introduced in the curriculum of under-graduate and post-graduate courses in Engineering and Agricultural Universities? etc.

A summary of the discussions at all five workshops is given below. This is the consensus arrived at after elaborate discussions on each of the issues.

- (1) The need for training.

There was general agreement that there is a need for training to become aware of the inter-disciplinary nature of irrigation management, the need for team-work and the latest advances in the subject for all levels of professionals connected with irrigated agriculture. Such training should be not only for upgrading one's skills in one's own discipline, but also for understanding and appreciating the role of the allied disciplines in improving management of the irrigation systems. In addition, it should emphasize the need for greater farmer-involvement in planning, design, implementation, maintenance and management of the systems and the methodologies to achieve this.

The consensus was that there was a great urgency to carry out manpower surveys in all of the states to determine the number of professionals needed at all levels for efficient management of the irrigation systems now and the likely requirements after two decades, when nearly the full development of irrigation potential is expected to be completed. Such a survey should be undertaken by the states. It should be based on a job analysis, keeping in view the present responsibilities and the changing workload that would be imposed on the professionals with the introduction of modern technologies. Simultaneously, a need analysis for evolving the curricula for the training courses should be worked out based on the jobs to be carried out by the different levels of professionals and their present knowledge-level.

## (2) Training courses.

There was considerable discussion on the type and duration of the training courses, the levels of professionals to be trained, methods of training, etc. The participants generally agreed that:

- (a) Senior level officials would participate in seminars and workshops on various topics connected with irrigation management. These would be of short duration, say three to five days, conducted by specialists, preferably in the field on actual operating systems.
- (b) Middle level officials should attend workshops as well as short courses (6 to 8 weeks) on irrigation management conducted at the state training institutes. The faculty should be assisted by specialists in the various disciplines, if necessary.
- (c) Junior level officials should attend courses of longer duration (6 to 8 months) on irrigation management at the state training institutes. Part of the course would be spent in the field during a cropping season, to acquaint participants with the principles and practices of modern irrigation. A view was expressed by some participants that there may be some administrative difficulties in sparing the services of junior officers for such long periods for training. They desired to know if the duration could be reduced to 3 to 4 months.
- (d) In respect of operating level staff, vocational training on

different aspects of irrigation management will have to be arranged by the State Governments to enable them to become proficient in the day to day jobs to be done by them.

It will be necessary to define the curricula for the courses for the different levels of professionals. The state governments should also ensure that an adequate number of professionals at all levels are continuously sent for training to the State Training Institutes.

For proper training of the professionals, the training institutes must have a well-trained faculty. The faculty could be drawn from senior professionals from the departments and/or from the universities. They will, however, have to be given suitable training at appropriate institutions abroad and/or in India before they join as faculty members. Subsequent to their training as trainers, they should be required to work as faculty members for at least three years. Adequate incentives must be offered to the trainers so that well qualified and experienced personnel are attracted to the faculty.

Strong emphasis should be given to hands-on training in the field, especially for junior and mid-level officers. Also, the use of videos and other audio-visual aids should be encouraged.

### (3) Action and adaptive research.

IMTP provided for both action and adaptive research. Professionals associated with irrigated agriculture and receiving training need to be exposed to real problems in the field on actual systems and to interdisciplinary formations of actions to address them. Action research provides this experience. There was, however, considerable confusion in the minds of the participants on this issue because adaptive research was identified with the work of demonstration farms that is being conducted at present by various agricultural universities. The issue of adaptive research was not discussed, as the participants felt that it was not very different from action research.

The Consultant and Dr. Lowdermilk explained that the action research studies contemplated are very different from what is being done now at the various universities and research institutions; the solution of single variable problems so as to obtain increased productivity or better use of irrigation water. Action research is a process which looks at systems in terms of relationships and integration rather than simply at discrete areas. Single technologies can create only small incremental changes. What is being attempted now in the universities are partial-solution approaches in contrast to an approach based on simultaneous and mutually interdependent interactions of multiple components of systems. The action research studies, it was explained, will entail the direct on-site interdisciplinary participation of irrigation and agricultural professionals, behavioral scientists and farmers working as a team. Each study involves long-term on-site assignments and hands-on fieldwork. Corrective interventions based on new concepts will be formulated and implemented by the state government and farmers in order to improve the operation of the system. Besides providing training experiences, action

research is designed to identify and evaluate the effectiveness of various systems interventions.

There is no doubt that the professionals who participated in the workshop do not fully understand the purpose and scope of the action research program. On account of the limited time available at the workshops, discussion of further detail on this subject was not possible. This is an area where WMS II could play a significant role in assisting IMTP. Help could be given to enable Indian irrigation professionals grasp the vital principles of interaction of system components. A few workshops on this subject together with two or three field exercises on actual operating systems in India would help considerably.

#### (4) Linkage with Universities and Institutes of Management.

The participants agreed that a considerable amount of research has been and is being carried out at the various universities and research centers in the fields of irrigation management, on-farm development works, conveyance system operations, agricultural practices and inputs, etc. Therefore, strong linkages between the practicing irrigation professionals and the universities and research institutions is essential so that the findings of this research can be applied in the field for better production and improved irrigation management. Likewise, there should be equally strong linkages between the irrigation professionals and the institutes of management to evolve methodologies for greater farmer involvement in the management of irrigation systems, and to evolve new roles, values, attitudes and norms among professionals dealing with irrigated agriculture.

#### (5) Technology Transfer.

The unanimous opinion of the participants was that there do not exist appropriate mechanisms for transfer of technology. They agreed that such mechanisms should be established in each participating state and at the Center. Through a network system, the Center and participating states will receive regular information about training and research activities. At the Center, the participants agreed that a technology transfer unit which would develop strong linkages with international organizations for mutual technology transfer should be set up in the CWC.

#### (6) Involvement of farmers.

On this subject there was a considerable difference in opinion among the participants. One school of thought took the position that there is no necessity for involving the farmers in the management of irrigation systems. A more moderate section felt that involving the farmers in the operation and maintenance of the system only and not in the earlier stages would be advisable. Practically no one felt that the farmers should be involved right from the planning and design stage through the implementation and the operation and maintenance stages. Considerable amount of preparatory work will have to be carried out to convince the Indian professionals of the advantages and the need to involve the

farmers in project development and operation. Subsequently, the methodology of involving farmers will have to be worked out and the professionals trained.

(7) Organizational and procedural changes.

The discussions among the participants revealed that substantial organizational and procedural changes are absolutely necessary to create an environment conducive to efficient functioning of the trained personnel in the field. Stagnation, lack of promotional opportunities, absence of incentives, lack of appreciation for good work, etc. have all been responsible for the professional shortcomings in job performance. In addition, the workshops found that other factors such as lack of financial powers, inadequate infrastructural and physical support, etc., also inhibited efficient discharge of duties by professional staff. The general consensus was that the planning and implementation of the IMTP, which would result in a transformation of farmer expectations and motivations in all aspects of the agricultural production process, would need a sharp change of direction in the thinking of development institutions in India. The experience of other countries in the region, who have by such transformations achieved increased productivity and greater farmer participation, should be studied carefully and lessons learned therefrom. The participants also agreed that, because of the deficiency of Indian specialists, obtaining expatriate assistance from professionals who have worked in farmer involvement and institutional development in other countries would be advantageous.

(8) Role of Center.

Because development of irrigation is a state subject with the planning, design, implementation, operation and maintenance carried out by state governments, the participants felt that the role of the Center has to be primarily coordination and rendering necessary assistance to the states. For IMTP, the Center will, through the Irrigation Research Management Improvement Cell of CWC (IRMIC) coordinate training and action research activities in the states. One of the areas where assistance of the Center is very much needed is in identifying areas where importation of technology either through expatriate assistance or by deputing Indian professionals to appropriate institutions for training is necessary. Another major field for central assistance would be working with the state governments on policy matters and changes necessary for improving irrigation discipline in the irrigation systems. The consensus was that a considerable amount of research and studies on irrigated agriculture is being carried out at the various Indian research centers and universities. The Center should coordinate these activities and help to disseminate the information to the Departments of Irrigation and Agriculture in the states, for use in the field. The workshops agreed that there is a need for establishing a technology transfer unit at the Center. A Central Documentation Unit at an appropriate location, which would serve as a window for collecting, compiling, retrieving and disseminating technical information and latest scientific advances in this field, not only within the country but throughout the world, is also needed.

### Conclusions and Recommendations: State Workshops

During the plenary session, at the end of the second day, the Chairperson summarized the proceedings of the workshop and evolved by consensus a list of conclusions and recommendations for action by the States and Central Governments. The more important ones concurred in by the five workshops follow:

- (1) There is a need for all professionals connected with irrigated agriculture to undergo training/professional development in irrigation management;
- (2) It is most urgent to carry out a manpower assessment of personnel needed in each state for managing the irrigation systems as of now and by 2000 A.D. This assessment should be done after carrying out a job analysis of professionals at different levels;
- (3) Irrigation and Agriculture Departments should depute adequate numbers of professionals at all levels for training at the State Training Institutes;
- (4) The type, duration and course content of the training courses would vary for different levels of professionals, depending on their job requirements;
- (5) There is a need to evolve appropriate curricula for the different courses. Expatriate technical assistance may be obtained for this purpose;
- (6) Action research is an important component of the training and should be taken up on one or more operating systems in each state;
- (7) Linkage of the State Training Institutes and Action Research Centers with Engineering and Agricultural Universities would be mutually helpful;
- (8) The first and foremost need is the training of trainers at appropriate institutions. For this, it is necessary to select quality personnel from the Departments as well as the Universities, and offer them adequate incentives;
- (9) Trainers so trained shall give an undertaking to serve the State Training Institutes/Universities for a period of at least three years after return from training;
- (10) Courses in irrigation management should be introduced in the undergraduate and post-graduate classes in selected engineering and agricultural universities;
- (11) It is necessary and would greatly help, if farmers are involved right from the planning stage of the projects. This is a new

concept and training has to be given to the professionals on methods to involve, as well as to motivate, farmers;

- (12) A Technology Transfer Cell should be established in each state. These should coordinate with the Central Unit, in IRMIC;
- (13) A Central Documentation Unit should be set up at an appropriate location;
- (14) There is a felt need for creation of a separate Irrigation Management Cadre in each state. However, considerable amount of planning is necessary to evolve an appropriate methodology for setting up such a cadre.

#### Discussions: Central Workshop

After the Inaugural session, the Chairman, Central Water Commission, conducted the proceedings of the workshop. As circulated in the Agenda note, the following were the main issues for discussion:

- I. Means and methods to accelerate and develop training activities in the State Training Institutes established with USAID and World Bank support.
- II. Problems of faculty development and their training needs.
- III. Assessment of man-power to be trained; policy for training and post-training deployment.
- IV. Role of Universities/Management Institutes and linkages with international institutes concerned with irrigation management.

Discussions were held on each issue and are summarized below:

#### Issue I

A review was made of the present status of the State Training Institutes set up with USAID and World Bank support. The Directors of the Institutes explained the progress made thus far and the problems encountered regarding finances, organization, infrastructure, recruitment of faculty and training of professionals. Except for the state training institute in Maharashtra, the other training institutes are yet at the beginning stage. The participants felt that there was a need for national coordination in respect to budgets, technical assistance, training of professionals, training courses/workshops and training of trainers to fill the faculty posts. The workshop unanimously agreed that such a coordination should be effected for training institutes supported by both USAID and the World Bank through the special cell, IRMIC, created in CWC for USAID projects.

## Issue II

The Directors of the training institutes stated that considerable difficulty was being experienced in recruiting quality personnel for their faculties. The participants felt that unless adequate incentives are offered in the form of additional allowances, free housing, free electricity, water, etc., attracting the right type of personnel may not be possible. In this connection, notification No. 12617/86-Trg.(TNP) of the government of India, Ministry of Personnel Public Grievances and Pensions dated Feb. 7, 1986 indicating the incentives to be offered to the faculty members of training institutions was circulated. (Annex VIII.) In view of the urgency for filling in the posts of trainers at the state training institutes, the group agreed that this should be studied and proposals put up for adoption by all the training institutes.

Insofar as training of the trainers is concerned, the workshop decided that the existing arrangements should continue. It also agreed that steps should be taken to set up one or more institutes in India for this purpose.

## Issue III

Early steps should be taken by all the states for carrying out a detailed man-power assessment to determine the number and kind of professionals needed for management of the irrigation systems at present and by 2000 A.D. Such an assessment should be based on a job analysis of the different levels of professionals. Simultaneously, a needs analysis could be carried out to determine the areas where intensive training is needed.

The consensus was that all professionals engaged in irrigated agriculture should undergo training/professional development in irrigation management. Steps should be taken to work out the type, duration and course content for the different levels of professionals. Curricula should be developed with the help of specialists in the different disciplines.

A view was expressed that the state governments should ensure that the professionals trained in irrigation management are posted back to field duties, preferably at the stations where they came from. This would enable them to use the training they have had, by adopting the new principles and procedures on the systems where they are posted. Posting the trainees back at the stations where they came from, would also help in avoiding hardships and act as an incentive to the professionals to attend the training courses. There is thus a need for devising a proper policy both for training and for post-training deployment. The implementation could be carried out by a training cell to be set up in each state.

## Issue IV

The participants unanimously felt that engineering and agricultural universities have a key role to play in the development of irrigated agriculture. In the near future, these institutions will have to turn out professionals who have specialized in irrigation management. For this purpose, courses in irrigation management will have to be introduced in the under-graduate and post-graduate curricula of these universities. Also, these universities will have to assist the state training institutes by deputing academics for teaching courses at the state training institutes. In addition, they have to provide assistance in the action research program taken up by the state training institutes.

The Institutes of Management have to develop staff capability in the field of irrigation management by conducting interdisciplinary training programs in management including social and behavioral sciences. They need to carry out field studies to develop methodologies for achieving greater farmer involvement in the management of irrigation systems. They would also be the key agencies for carrying out studies on organizational and procedural changes needed to prepare the right environment for the trained professionals to utilize fully the training received by them.

Technology transfer mechanisms will have to be established in each participating state and at the Center. The organically linked training systems will acquire, develop, adapt and disseminate useful knowledge about training and findings from adaptive research and action research. In addition, the cell at the Center should develop strong linkages with International Organizations dealing with irrigation management for mutual technology transfer. There is also a need for setting up a Central Documentation Unit which would make available information on the latest practices and innovations in the field of irrigation management.

## Conclusions and Recommendations: Central Workshop

At the plenary session, the Chairman requested the participants to come out with specific conclusions and recommendations for taking further action. These are listed below:

### Issue I

- (1) There is a need to have one Central Unit viz., IRMIC, to assist the state governments and coordinate the activities of the state training institutes in respect of faculty training, training programs, etc.
- (2) Many of the states are having great difficulty in setting up the training institutes due to lack of funds for the infrastructure like land, buildings, etc. Adequate financial assistance should be provided to the sites to overcome this problem.

## Issue II

- (1) There is a great need to persuade quality personnel to work as trainers in the state training institutes. This can only be achieved if adequate incentives are offered for the faculty in terms of pay-scales and other facilities.
- (2) Training of the trainers in different aspects of irrigation management is very necessary. This may be carried out in India and abroad as being done now for a couple of years. By then one or more training institutes for training of trainers should be set up within the country.

## Issue III

- (1) Training in irrigation management should be made compulsory for all professionals engaged in irrigated agriculture.
- (2) Adequate incentives and allowances must be given to the trainees so that they are encouraged to take up the training courses at the institutes.
- (3) The state governments should ensure that professionals trained in irrigation management are posted back to posts in the field where they can utilize the training that they have had.
- (4) Development of teaching materials, manuals, etc., to ensure quality training in irrigation management is necessary.
- (5) For the junior level professionals, technical materials should be developed in the regional languages.
- (6) Use of audio-visual aids for training is essential and steps should be taken to utilize this medium to the greatest extent possible.
- (7) Manpower planning has to be carried out in the states on an urgent basis in order to determine the size and scope of the training programs and to enable them to be planned properly. The manpower survey should be not only quantitative but also qualitative, including job analysis, need analysis, etc.

## Issue IV

- (1) There is a need for a close interaction between the universities and the training institutes. A methodology has to be worked for implementing mutual assistance.
- (2) Courses in irrigation management will have to be introduced at the undergraduate and post-graduate levels in selected engineering and agricultural universities to enable them to produce graduates qualified in irrigation management.

- (3) The Indian Institutes of Management should assist the state training institutes by training the professionals in the field of management and in the behavioral and social sciences.
- (4) IRMTC should act as a focal point for collection, collation and dissemination of information in regard to irrigation management at the state, national, and international levels.

#### General

- (1) Similar workshops should be held once every six months. Progress and implementation problems of both the USAID and World Bank projects could be discussed and various issues resolved.
- (2) There is a need to create a separate cadre for operation, maintenance and management of irrigation systems. There are, however, administrative and organizational problems which will have to be resolved by the state governments before this can be done.

## CHAPTER IV

### EVALUATION OF THE WORKSHOPS

#### The State Workshops

At the end of the discussions and prior to the final plenary session, the participants were requested to fill in the evaluation proformae and hand them over to the Consultant. Annex IX is a specimen of the proforma. The purpose of the evaluation was essentially to obtain the reactions of the participants in regard to various aspects of the workshop. The proforma was divided into three distinct parts:

- (1) The utility of the workshop and the manner in which it was conducted;
- (2) Administrative arrangements for the workshop;
- (3) The views of the participants about holding a similar workshop at the Center.

The forms were collected and analyzed by the Consultant. A total of 97 participants in the five workshops returned completed proformae as below:

Gujarat	30
Madhya Pradesh	11
Maharashtra	16
Rajasthan	19
Tamil Nadu	<u>21</u>
TOTAL	<u>97</u>

The response to the evaluation proformae was very encouraging. The following is a brief summary of the views expressed by the participants:

#### Appraisal of the Workshop Content

A majority of the participants felt that the workshops fully met the objectives indicated and that the subject matter of the workshop was very interesting. The general opinion was that these workshops have been very useful to senior level officers in particular. They have helped in creating an awareness in them of the need for training of professionals for improved management of irrigation systems. The workshops highlighted the lack of rapport between field professionals and academics from the universities. It also brought out clearly that neither the professionals nor the faculty of the Institutes of Management were aware of how they could effectively interact with each other in solving social and

managerial problems in irrigated agriculture. An overwhelming majority of participants felt that similar workshops would be very useful for senior officials. There was a general appreciation of the video shows and agreement on the utility of the lead papers in giving a better insight into the various aspects of irrigation management.

#### Administrative Arrangements

Over 95% of the participants appreciated the arrangements made and the manner in which the workshops were organized and conducted. A view was expressed that "the program format" needs improvement. However, because the discussions covered a wide field and were of a general nature, it was not possible to adhere to any specific "program format."

#### Any Others

Most participants expressed the view that a similar workshop should be held at the Center, as that would enable a better understanding by the Center of the needs of the states.

There were a number of other minor suggestions which were either not feasible to implement or were not related directly to the objectives of the workshops.

Detailed analysis of the evaluation is contained as Annex X.

#### Evaluation: Central Workshops

Annex XI is a specimen of the evaluation proforma supplied to the participants. These were returned to the Consultant at the end of the discussion session. Only 29 participants responded. A brief summary of the answers furnished follows.

A majority of the participants indicated that the workshop met its objectives in large measure. They also stated that the workshop was very useful and that the group discussions have led to a better understanding of the components of the IMTP. The general opinion was that similar workshops should be held from time to time to review the progress of the different components of the project, to identify the problems and arrive at solutions. There was also a general appreciation of the brochure prepared and circulated, as it facilitated considerably the discussions at the workshop.

## CHAPTER V

### CONCLUSION

#### Achievements of the Workshops

The six workshops have shed considerable light on the manner in which irrigation systems in India are planned, designed, constructed, operated, managed and maintained. In fact the workshops were unique. This is the first time that a critical review of the way irrigation business is done in India today has been made by senior officials. The review highlighted the fact that India's irrigation activities now require much more innovative and serious thinking than was required in the past when conditions were radically different. A realization has dawned that India is at a critical junction in planning, application of technologies and in evolving appropriate training approaches for improved irrigation management.

Another important outcome of the workshops is the realization that effective irrigation development needs something more than pure 'Engineering.' These workshops made clear that "...although Engineering will continue to play a fundamental role, the needs call for a 'Humanisation of Engineering' i.e., a more comprehensive and much broader conception of engineering that would put the main emphasis on change and transformation of the socio-economic reality that have to be reshaped in order to ensure early and effective program fruition," (Weiner, 1976).

The need for a systems approach for identifying inter-dependent dynamic problem-causes was brought out clearly in the workshops. It was realized through discussion, that a process is needed which looks at systems in terms of relationships and integration rather than at simply discrete areas where single technologies can create only small incremental changes. The participants understood that irrigation management is an interdisciplinary, system-management-oriented process with built-in learning mechanisms. These mechanisms provide feedback to guide systems operations for improved performance.

A greater achievement of the workshops is the realization at top levels that there is a need for a transformation of attitudes, techniques, inputs and institutions for any substantial improvement to occur in agricultural production. This transformation, especially in the traditional small-farm sector, cannot happen spontaneously through government action but through a major transformation of the developmental agencies. The participants appreciated that such a transformation could only be brought about by appropriate training of professionals and farmers.

In general, one can state that the workshops were very successful in achieving their objective of creating among the senior level officers connected with irrigated agriculture, a better understanding of IMTP and an appreciation of the need for training professionals of all levels in irrigation management at the state training institutes especially set up

for that purpose.

### Suggestions for Future Action

WMS II has to be congratulated for supporting the Project Orientation and Policy and Strategy Workshops which, no doubt, have paved the way for a better understanding of the IMTP and have created an awareness among the senior level officers that India's irrigation management needs for decades to come will require a flexible irrigation management strategy to meet the present and changing demands. Only a seasoned professional such as the Consultant (who has made periodical visits to the states and met the state officials before and after the workshops), can appreciate the tremendous change the workshops have effected in creating a lively interest in and understanding of the Project among senior officials. There is no doubt that this effort will significantly help the smooth implementation of the project.

Now that nearly half the life of the IM&T Project is over, WMS II could, on the request of USAID, plan out mid-term workshops for assessment of the manner in which the project is being implemented as compared to the original proposal, the problems encountered and methods of overcoming them. This would be a very useful exercise since the IMTP is one of the first projects of its kind in irrigation, aiming exclusively at human resources development and institution building. The lessons from these workshops would greatly help in making mid-course corrections and changes, if any, in the scope, purpose and goals of the project. These workshops would supplement and would not overlap the mid-term evaluation of the project contemplated in the project paper. On the contrary, the workshops would provide a forum where problems encountered during the implementation of the project and their possible solutions could be discussed. Above all, such workshops would help the donor agencies to appreciate the difficulties encountered by the participating countries in executing such institutional development projects.

An important realization is that there likely is a strong need to conduct similar workshops for all or most aided irrigation projects in developing countries. These would be helpful to the donor agencies in presenting such projects in detail to the senior officials to the host country who will ultimately be responsible for the implementation of the project. Their reactions could be used to make adjustments, if necessary, both in content and scheduling to better fit their requirements and their time and resource constraints. The implementing agencies, on the other hand, would obtain a clearer idea of the components of the project. This would enable them to plan their activities considering their other development works with respect to personnel, materials and finances. Such an exercise would help avoid delay in the start-up and the implementation of the project.

A considerable amount of planning and preparatory work has to be carried out in consultation with the participating agencies before organizing such workshops. The consultant selected for the purpose should be a very senior and mature professional. He should not only

possess the resilience to overcome the rigid attitudes of the bureaucracies in the countries through gentle persuasion but also be able to interact with professionals at all levels with confidence on their technical, institutional, administrative and organizational problems. Above all, he should have a flair for and have had experience in organizing such workshops in a systematic manner; planning out to the last detail.

Maximum advantage could be gained by WMS II and the donor agencies by inviting such consultants, who have conducted the workshops to their institutions in the U.S.A. for giving an exposition of their views on various topics such as the reactions of the participants on the workshops, the administrative and organization problems likely to be faced during the implementation of projects, the methodology to be adopted for the implementation of the projects and for introducing new technologies and practices. This could be in the form of seminars at different centers at which the professionals from different universities/agencies would have an opportunity for first-hand interaction with the consultant. This would not only help in restructuring/modifying proposed programs but also in the preparation of future programs in the field of irrigation management.

#### Acknowledgement

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ANNEX I

LIST OF PARTICIPANTS - STATE PROJECT ORIENTATION WORKSHOPS

ANNEX I

LIST OF PARTICIPANTS - STATE PROJECT ORIENTATION WORKSHOPS

1. Tamil Nadu
  1. Mr. K. Madhav Sarma, Secretary, Public Works Department.
  2. Mr. J. S. Syiem, Joint Secretary, Public Works Department.
  3. Mr. R. K. Sivanappan, Dean, Tamilnadu Agricultural University.
  4. Mr. Arthur Samuel, Chief Engineer, Periyar Vaigai Project.
  5. Mr. M. Mallikarjunan, Chief Engineer.
  6. Mr. A. Mohanakrishnan, Chief Engineer.
  7. Mr. G. S. Shanmugam, Chief Engineer.
  8. Mr. V. Govindan, Director, Irrigation Research Institute.
  9. Mr. S. J. Ambrose, Chief Engineer.
  10. Mr. R. Raman, Deputy Director (Central Schemes).
  11. Mr. Shyama! Roy, Professor, Indian Institute of Management, Bangalore.
  12. Mr. Bhaskaran, Professor, Indian Institute of Managment, Bangalore.
  13. Mr. U. S. Natarajan, Director of Agriculture.
  14. Mr. S. Savada Muthu, Chief Engineer, Agricultural Engineering.
  15. Mr. R. Sakthivadivel, Director, Centre for Water Resources.
  16. Mr. C. R. Shanmugam, Project Engineer, Centre for Water Resources.
  17. Mr. R. Ragavendaran, Visiting Professor, Centre for Water Resources.
  18. Mr. H. S. Krishnaswamy, Member (Water Resources) CWC.
  19. Mr. G. T. Panchigar, Chief Engineer & Director, WALMI, Gujarat.
  20. Mr. Dean F. Peterson, USAID & WMSP II Project Coordinator.
  21. Mr. Max K. Lowdermilk, USAID.
  22. Mr. M. N. Venkatesan, Consultant.

## 2. Gujarat

1. Mr. P. A. Raj, Secretary, Irrigation Department.
2. Mr. V. B. Patel, Special Secretary, Command Area Development.
3. Mr. C. R. Samajpati, Secretary, Rural Development.
4. Mr. R. Bhanujan, Secretary, Agriculture and Forests.
5. Mr. R. S. A. Rao, Financial Advisor, Irrigation Department.
6. Mr. A. K. Pradhan, Managing Director, Land Development Corporation.
7. Mr. C. B. Shah, Director, Research.
8. Mr. G. T. Panchigar, Chief Engineer & Director, WALMI.
9. Mr. R. C. Patel, Dean, Faculty of Engineering, M. S. University.
10. Mr. C. Gopinath, Professor, Indian Institute of Management, Ahmedabad.
11. Mr. M. R. Goswami, Chief Engineer, Gujarat.
12. Mr. U. Sinha, Commissioner, Command Area Development.
13. Mr. M. H. Wakharia, Managing Director, Tubewell Corporation.
14. Mr. H. J. Patel, Director of Agriculture.
15. Mr. Dean F. Peterson, USAID & Project Coordinator WMS II.
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## 3. Maharashtra

1. Mr. P. R. Gandhi, Secretary, Irrigation Department.
2. Mr. H. V. Dhamdhare, Chief Engineer & Director WALMI.
3. Mr. M. D. Deshmukh, Secretary & Commissioner Cad.
4. Mr. D. L. Garud, Chief Engineer.
5. Mr. A. K. Shenolikar, Chief Engineer.
6. Mr. K. N. Shukla, Chief Engineer.
7. Mr. M. Y. Oke, Chief Engineer.

8. Mr. D. N. Kulkarni, Chief Engineer.
9. Mr. S. T. Deokule, Chief Engineer.
10. Mr. T. G. Ratna Parkhi, Chief Engineer.
11. Mr. S. C. Sakhalakar, Managing Director, Land Development Corporation.
12. Mr. R.V. Chavan, Executive Engineer, Irrigation Research.
13. Mr. R. K. Inamdar, Deputy Secretary (I).
14. Mr. V. M. Date, Deputy Secretary (CAD).
15. Mr. K. S. Upalavikar, Deputy Secretary (PP).
16. Mr. S. S. Udgirkar, Deputy Secretary (ID).
17. Mr. S. B. Varade, Professor of Agronomy, WALMI.
18. Mr. P. A. Kale, Joint Director of Agriculture.
19. Mr. B. S. Date, Chief, Irrigation Utilization Officer.
20. Mr. N. P. Kulkarni, Assistant Director, Publicity.
21. Mr. N. K. Sarma, Member (WR) CWC.
22. Mr. V. Srinivasan, Director, CWC.
23. Mr. Edwin Stains, USAID.
24. Mr. Max K. Lowdermilk, USAID.
25. Mr. Allen Early, USAID.
26. Mr. G. N. Kathpalia, USAID.
27. Mr. P. S. Suryanarayanan, Superintending Engineer, Madhya Pradesh.
28. Mr. M. N. Venkatesan, Consultant.

4. Madhya Pradesh

1. Mr. M. S. Singh Deo, Agriculture Production Commissioner.
2. Mr. M. C. Sharma, Secretary, Irrigation Department.
3. Mr. G. N. Buch, Secretary, Ayacut Department.

4. Mr. R. C. Jain, Secretary, Agriculture Department.
5. Mr. D. R. Sikka, Officer on Special Duty & Director WALMI.
6. Mrs. B. Sen, Chairman, Tawa Command Area.
7. Mr. S. N. Rao, Director, Academy of Administration.
8. Mr. G. S. Sahni, Special Secretary, Ayacut Department.
9. Mr. J. R. Malhotra, Engineer-in-Chief, Irrigation Department.
10. Mr. R. S. Agashe, Chief Engineer.
11. Mr. B. P. Sharma, Chief Engineer.
12. Mr. N. B. Sen, Chief Engineer.
13. Mr. M. S. Sohori, Chief Engineer.
14. Mr. B. N. Singh, Director, Agriculture Department.
15. Mr. K. S. Panwar, Managing Director, Land Development Corporation.
16. Mr. P. S. Suryanarayanan, Superintending Engineer.
17. Mr. K. N. Venkataraman, Superintending Engineer.
18. Mr. B. J. Bhandari, Superintending Engineer.
19. Mr. B. L. Mehrotra, Principal, Maulana Azad College of Engineering.
20. Mr. G. C. Arya, Vice Chancellor, Agricultural University, Jabalpur.
21. Mr. Max K. Lowdermilk, USAID.
22. Mr. Ted Olsen, USAID.
23. Mr. M. N. Venkatesan, Consultant.

5. Rajasthan

1. Mr. R. Jain, Secretary, Irrigation, Department.
2. Mr. S. Kashyap, Chief Engineer, Irrigation.
3. Mr. D. M. Singhvi, Additional Chief Engineer.
4. Mr. S. S. Bhandari, Additional Chief Engineer.
5. Mr. B. C. Jain, Additional Chief Engineer.

6. Mr. O. P. Mathur, Additional Chief Engineer.
7. Mr. A. M. Sharma, Additional Chief Engineer.
8. Mr. S. S. Bhupal, Chief Engineer, Cad.
9. Mr. N. K. Kaushik, Chief Engineer, Rajasthan Canal.
10. Mr. N. B. S. Mowriya, Additional Chief Engineer.
11. Mr. A. S. Kapoor, Chairman, Rajasthan Canal Project.
12. Mr. S. M. Sham, Additional Chief Engineer.
13. Mr. S. R. Katariya, Director, Design & Research.
14. Mr. Y. P. Bhatia, Officer on Special Duty.
15. Mr. K. N. Nag, Dean, Sukhadia Agricultural University.
16. Mr. J. Gehlot, Director MI&S, Jaipur.
17. Mr. B.S. Mathur, Superintending Engineer.
18. Mr. R. K. Sharma, Superintending Engineer.
19. Mr. H. S. Shrivastava, Superintending Engineer.
20. Mr. S. S. Kalra, Superintending Engineer.
21. Mr. D. C. Kothari, Superintending Engineer.
22. Mr. R. P. Chawla, Superintending Engineer.
23. Mr. M. K. Jain, Agronomist.
24. Mr. Max K. Lowdermilk, USAID.
25. Mr. Niel Dimick, USAID.
26. Mr. G. N. Kathpalia, USAID.
27. Mr. M. N. Venkatesan, Consultant.

In addition to the above, Senior Professionals and a number of other officials also participated in the workshop.

ANNEX II

LEAD POINTS FOR GROUP DISCUSSION

PROJECT ORIENTATION WORKSHOPS

ANNEX II  
LEAD POINTS FOR GROUP DISCUSSION  
PROJECT ORIENTATION WORKSHOPS

General

1. Need for Training Irrigation Management.
2. Training to be multi-disciplinary.
3. Manpower assessment for training, Immediate, Ultimate.
4. Need for collaboration with Universities and Institutes of Management.
5. Role of Collaborating Institutions.
6. Methodology for integrated working.

Training

1. Method of Obtaining Faculty - Trainers.
2. Number and disciplines of trainers.
3. Training of Trainers.
4. Incentive of Trainers.
5. Training Methods - Videos, Case-materials, Simulation Games etc.
6. Training of Professionals - Disciplinary, Inter Disciplinary.
7. Deputation of Trainees from different Departments.
8. Methodology for Recruiting and Training Economists and Social Scientists.
9. Different levels of Training, Duration & Nature.
10. Evolving Curricula, Lesson Plans, Lab. Exercises for Training.
11. Deputation of Professionals to Roorkee and Anna University for Training in Water Management.
12. Rapid appraisal as a fore-runner to Diagnostic Analysis.

13. Role of the Farmer and participating Institutions in rapid appraisal.
14. Implementation of action research. Role of farmers and collaborating Institutions.
15. Adaptive Research, the role of Educational Institutions.
16. Monitoring and Evaluation of Irrigation Systems.
17. Performance of Irrigation systems/sub-systems.
18. Mechanisms to be set-up for Technology Transfer in the State.
19. Linkage with Central Unit and Documentation Center at IIM Bangalore.
20. Assistance from Educational Institutions in Technology Transfer.
21. Technology Transfer through Videos, Pamphlets, etc. to the Farming Community.
22. Creation of new/revised Staff Functions in areas of improved Irrigation Management.
23. Creation of a Separate WM cadre.
24. Introduction of Compulsory Training in Water Management for all Irrigation Professionals.
25. Environmental changes necessary for Introducing Irrigation Discipline among Farmers.
26. Social and Political implications in introducing improved Irrigation Management Practices.
27. Adequacy or otherwise of the Acts and Manuals, as framed at present to implement the practices.
28. What legal Administrative and Constitutional changes felt necessary for effective implementation.

#### Role of Center

29. Coordination of Training and Action Research Activities among States.
30. Work with State Governments on policy matters and changes necessary for enforcing Irrigation Discipline.
31. Assistance to States in Implementation of the Projects.
32. To act as a Window for Technology Transfer.

ANNEX III

LIST OF PARTICIPANTS

CENTRAL POLICY AND STRATEGY WORKSHOP

ANNEX III

LIST OF PARTICIPANTS

CENTRAL POLICY AND STRATEGY WORKSHOP

1. MR. R. RAMASWAMY IYER, Secretary, Ministry of Water Resources.
2. MR. M. SUBRAMANIAN, Secretary, Ministry of Agriculture.
3. MR. M. A. CHITALE, Chairman, Central Water Commission.
4. MR. RELANG, Addl. Secretary, Ministry of Water Resources.
5. Mr. N. K. SARMA, Member, (Water Resources), Central Water Commission.
6. MR. KISHEN CHAND, Chief Engineer, IRMIC.
7. MR. G. C. BHANDARI, Director, IRMIC.
8. MR. N. V. V. CHAR, Dv. Chief Engineer, WAPCOS.
9. DR. M. RANGA REDDI, Director (Agriculture), WALAMTARI, Andhra Pradesh.
10. MR. C. A. DESAI, Adviser, Planning Commission.
11. MR. J. RAMALINGAM, Director, (WRU-II), Central Water Commission.
12. MR. B. B. KARJGHAGI, Director (IN), Central Water Commission.
13. DR. C GOPINATH, Professor, Indian Institute of Management, Ahmedabad.
14. DR. JAGDISH NARAIN, Consultant, World Bank.
15. DR. J. R. PAWAR, Professor of Agricultural Economics, MPAU, Rahuri, Maharashtra.
16. PROF. O. H. PATEL, Director, Irrigation Management and Training Center, M.S. University, Baroda.
17. PROF. C. R. SHANMUGAM, Special Officer, Centre for Water Resources, Anna University, Madras.
18. DR. K. N. NAG, Vice-Chancellor, M. L. Sukhadia University, Udaipur.
19. DR. G. I. LEVINE, Program Officer, Ford Foundation.
20. DR. D. J. W. BERKHOFF, World Bank, New Delhi.

21. DR. R. G. GRIMSHAW, World Bank, New Delhi.
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24. DR. RICHARD N. BLUE, Dy Director, USAID.
25. DR. ROBERT THURSTON, Chief, Irrigation, USAID.
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27. DR. JEFFREY D. BREWER, Louis Berger Int. Inc./India.
28. MR. H. V. DHAMDHERE, World Bank, New Delhi.
29. DR. A. GLUMALAI, Jr. Director, IMTI, Tamil Nadu.
30. MR. A. MOHANA KRISHNAN, Director, IMTI, Tamil Nadu.
31. MR. G. C. KANJOLIA, Chief Engineer and Director, IMTI, Kota, Rajasthan.
32. MR. S. N. KHANDELWAL, Dy. Secretary (IRR), Rajasthan.
33. DR. F. A. MOSES, Secretary, Irrigation and Power, GRISSA.
34. MR. J. T. JANGLE, Director, WALMI, Aurangabad.
35. DR. R. S. MISRA, Jr. Director, WALMI, Bhopal.
36. MR. L. V. KUMAR, Chief Engineer, Wapcos.
37. MR. Y. D. PENDESE, Chief Engineer, Central Water Commission.
38. MR. J. R. PATEL, Addl. Director of Agriculture, Gujerat.
39. MR. K. R. UYAS, Superintending Engineer, Gujerat.
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41. MR. DHIRENDRA KRISHNA, Financial Controller, Irrigation Dept. Lucknow.
42. MR. M. S. GUPTA, Chief Engineer, U.P.
43. MR. C. V. J. VERMA, Member Secretary, Central Board of Irrigation and Power.
44. MR. K. R. SAXENA, Director, Central Board of Irrigation and Power.

45. MR. R. K. KAUSHAL, Jr. Commissioner (CAD), Ministry of Water Resources.
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48. PROF. L. P. JAIN, WALMI, U.P.
49. MR. D. T. BUCH, Director, WALMI, Gujerat.
50. MR. GOKUL PRASAD, Visiting Professor, University of Roorkee, U.P.
51. MR. R. CHIKKANNA, Secretary, Irrigations, Karnataka.
52. DR. R. K. RAJPUT, Project Coordinator, ICAR.
53. MR. N. K. DIKSHIT, Jt. Advisor, Planning Commission.
54. MR. A. S. KAPOOR, Managing Director, WAPCOS.
55. MR. A. KRISHNACHAR, Chief Engineer (WM), Ministry of Water Resources.
56. MRS. PRIYA PRAKASH, Jt. Secretary, Ministry of Water Resources.
57. MR. M. K. SINGHAL, Director, WALMI, U.P.
58. MR. M. B. NADAIR, Director, WALMI, Karnataka.
59. DR. MAHESH VARMA, Water Resources Training Center, Roorkee.
60. DR. S. P. JAN, Professor, WRTC, Roorkee.
61. MR. S. PRAKASH, Chief Engineer and Director, WALMI, Bihar.
62. MR. A. S. JAKHADE, Adviser, Ministry of Water Resources.
63. MR. L. S. SAINI, Secretary, Central Water Commission.
64. MR. H. PANT, Director, Dept. of Economic Affairs.
65. MRS. SUDHA BHAVE, Dy. Secretary, Ministry of Water Resources.

ANNEX IV  
AGENDA NOTE

IRRIGATION RESEARCH MANAGEMENT IMPROVEMENT CELL  
CENTRAL WATER COMMISSION

WORKSHOP ON  
POLICY AND STRATEGY FOR TRAINING  
IN  
IRRIGATION MANAGEMENT

26 FEBRUARY, 1986

WATER MANAGEMENT SYNTHESIS PROJECT  
USAID

ANNEX IV

AGENDA NOTE

WORKSHOP ON POLICY AND STRATEGY FOR

TRAINING IN IRRIGATION MANAGEMENT

Topic 1 Means and Methods to accelerate and develop training activities in the State Training Institutes established under the USAID and World Bank support.

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Introduction

The World Bank and the USAID has extended support for setting up of State Training Institutes (WALMI'S and IMTI'S) in the different states of India with the primary object of training of in-service professionals in the operation and management of distribution systems in the lower reaches below the major outlets including on-farm works, land leveling, rotational water supply, farmers organizations, etc. The thrust of the training has been to achieve optimum utilization of available water in the irrigation projects through better water management practices so as to increase per ha production for meeting the growing demand of food and fiber in the country.

USAID Support

USAID has extended support for strengthening the existing institutes set up in Maharashtra, Gujarat and Madhya Pradesh and setting up of two new institutes in the States of Rajasthan and Tamil Nadu under the loan and grant agreement of Irrigation Management and Training Project signed in July, 1983. The project also provides assistance for introduction of undergraduate and post-graduate courses in Irrigation Management in two engineering universities and two agricultural universities. The total assistance involved is US \$51 million over a life span of 7 years up to September 1990 which includes US \$41 million grant and US \$10 million loan with the break up as under:

	<u>AID Loan</u>	<u>AID Grant</u>
	(Thousands \$)	
a) Technical assistance	-	15390
b) Equipment and materials	2420	4680
c) Training	4150	10250
d) Other costs	2870	4310
e) Contingencies	<u>560</u>	<u>5370</u>
	<u>10000</u>	<u>41000</u>

In addition the project involves Government of India/States share of contribution equivalent to US \$28.2 million.

The Statewise details of financial projections under USAID Assisted IM&T Project are given in Statement I. From this it will be seen that IM&T Project provides for assistance towards staff training of Rs. 10.53 M GOI/States contribution and US \$ 5.85 M as grant under USAID.

#### Support of World Bank

The World Bank has been providing assistance for setting up the Training Institutes in Andhra Pradesh, Bihar, Orissa, Gujarat, Karnataka, Maharashtra and Madhya Pradesh under different credit agreements. They have recently extended their support for a similar set-up in Uttar Pradesh. The World Bank is supporting these training institutes through loan assistance mostly towards developing of infrastructure and hardware like buildings, equipment, furniture and vehicles.

#### Present Status

##### WALMI, Maharashtra

This is the only institute which is fully operative with the infrastructure developed and faculty in position. This institute is functioning as an autonomous body since June 1980 and has been conducting long-term and short-term courses for different levels of in-service professionals. World Bank financial assistance amounting to Rs. 32.8M was available up to December 1985. Against this, the utilization up to September 1985 was Rs.12.7M. The services of this institute have been utilized for organizing orientation-cum-D.A. course for the trainers training batch during 1985.

### Gujarat, WALMI

Gujarat WALMI has recently been registered under the Societies Act to function as an autonomous body in the name of Gujarat Irrigation Management Society (GIMS). The institute was started at Anand in 1980-81 and thereafter shifted to Gandhi Nagar. It has now been decided to have the permanent set up at Anand. There are 11 faculty members in position and the institute has been running training programs in the nature of workshops and short courses only. The World Bank credit support involved is Rs 32.0 M (US \$3.8 M) against which the amount disbursed is only US \$0.1 M up to September 1985. The credit closing date has been extended up to April 1988.

### Andhra Pradesh, Walamatari

Andhra Pradesh, Walamatari was established in the year 1983 under the Irrigation Department of the State and has now eight faculty members in position. This institute has been developed in terms of infrastructure and has only conducted some short courses and workshops. The World Bank support has been closed in June, 1985 having disbursed US \$ 1.62 M out of original credit allocation of Rs. 22.2 M (US \$2.0 M). Further reimbursement requests could be received up to December 1985.

### Madhya Pradesh, WALMI

Madhya Pradesh, WALMI has been established since March 1984 and has been registered as a Society in August, 1985. There are only five members of the faculty in position and the institute is functioning in a hired building and has organized a few workshops and short courses only. The institute is yet to develop in terms of faculty and infrastructure. The World Bank credit support involved in Rs. 10.7 M (US \$1.25 M) for which the current closing date is March, 1987. No disbursements have so far been made.

### Bihar, WALMI

This institute was started in 1984 under the irrigation department of the State Government and is temporarily functioning as the Irrigation Research Institute at Patna and has only five members faculty in position. This institute has started medium- and short-term courses and is yet to develop both in infrastructure and faculty. The World Bank credit support involved is RS. 92.9 M (US \$10.8 M), which closes in March, 1987. No disbursements have been made up to end of September, 1985.

### Orissa, WALMI

This institute has been set up since 1984 and is under the charge of Director who is attached to the office of the Engineer-in-Chief. There

is no faculty and no supporting staff. The World Bank credit support involved is RS. 5.7 M, for which the present closing date is March, 1987.

#### U.P. WALMI

This has been established in June 1985 and is located at Okhla in Delhi. There are four faculty members in position including the Director and action for development of infrastructure and faculty is underway. The World Bank has agreed to provide credit support of Rs. 64.1 M. for which the closing date is September, 1990.

#### Karnataka, WALMI

The WALMI has been established with the appointment of a Director. Recently the headquarters of this WALMI has been shifted from Bheemarayangudi to Belgaum. There is nothing to report in respect of its progress. The World Bank credit support which was extended up to March 1986 has not been utilized and there is no possibility at present to provide credit under World Bank.

#### Rajasthan, IMTI, KOTA

This institute was set up in June, 1984 and is operating under the Irrigation Department of the State Government. The Institute is temporarily accommodated in a part of a government building and has 17 faculty members in position. The institute is conducting short-term courses and workshops and has yet to develop in terms of infrastructure. The Institute is supported exclusively under USAID, IM&T Project.

#### Tamil Nadu, IM&T Institute

This institute was registered as a Society during March 1984 and has started functioning at Madras. The permanent headquarters of the institute will be at Tiruchirapalli, where the construction work for the building has been started. There are nine faculty members in position. The institute has conducted some short-term courses and workshops. This institute is supported exclusively under USAID, IM&T Project.

#### Accomplishments thus far

The establishment of 10 State Training Institutes under USAID and World Bank support has been responsible for bringing an awareness in these States to the need for improved irrigation management and training of professionals. For the implementation of USAID supported IM&T Project, State Technical Councils have been set up in the five States of Gujarat, Madhya Pradesh, Maharashtra, Rajasthan and Tamil Nadu which have commenced functioning. At the Center, there is the Central Steering Committee and a Technical Advisory Committee guiding the process of

implementation. Irrigation Research Management and Improvement Cell (IRMIC) in the CWC has been set up to play an important role in planning and coordination of the project. Work on curricula development for the training courses in the five State Training Institutes covered by the USAID IM&T Project and the training for trainers has been taken up. Training programs and workshops have been organized and Action Research Programs have been taken up in these States. It is, however, seen that there is no such mechanism for guiding the development of World Bank supported training institutes. Except for Maharashtra, WALMI the development of other institutes is lagging on account of various factors, the important being inadequate financial support from the concerned State Governments. It is also seen that other important irrigation States namely Punjab, Haryana and West Bengal and to some extent Kerala are not covered under any program.

### Steps for speedy implementation

Since there are two donor agencies separately funding and assisting the Irrigation Management Training program, there is need for national coordination in respect of funds allocation and utilization, technical assistance, training of professionals, training courses/workshops and training of trainers for the faculty of the State Training Institutes. As the roles of irrigation and agriculture departments in irrigated agriculture are not well defined, there is also the need for building strong functional linkages between the departments of the State Governments, Research Institutes, Management Institutes and universities at the national level.

STATEMENT 1

FINANCIAL PROJECTIONS UNDER USAID ASSISTED IM&T PROJECT

Rs./\$ (000)

		Staff Training, (Local) & Foreign, Study Tours				Infrastructure Development, Adaptive Research, Action Research, Technology Transfer, Organ. & Procedural Changes etc.				T O T A L			
S.NO.	STATE/CENTER	GOI/ STATE	USAID Contribution			GOI/ STATE	USAID Contribution			GOI/ STATE	USAID Contribution		
			Loan Rs.	Grant Rs.	Grant \$		Loan Rs.	Grant Rs.	Grant \$		Loan Rs.	Grant Rs.	Grant \$
1	2	3	4	5	6	7	8	9	10				
1.	Maharashtra	2290	----	----	765	44590	18170	12230	2139	46880	18170	12230	2814
2.	Gujarat	3240	-	-	400	24410	9380	5980	2034	27650	9380	5980	2434
3.	Madhya Pradesh	3000	-	-	1200	40190	10820	7130	2399	43190	10820	7130	3599
4.	Rajasthan	2000	-	-	1280	41940	11810	7830	2319	43940	11810	7830	3599
5.	Tamil Nadu	-	-	-	1450	43790	13900	8230	2149	43790	13900	8230	3599
6.	IRMIC	-	-	-	845	29830	123020	12300	9770	29830	12320	12300	10615
		10530	-	-	5850	224750	76400	53700	20810	235280	76400	53700	26660
=====													
7.	Education Institution									34800	18000	7000	2800
8.	Project Evaluation									-	-	300	70
9.	Contingency									12920	5600	2900	5080
										282000	10000	63900	34610
=====													

## Topic 2: Problems of faculty development and their training needs.

### Introduction

Development of faculty in the State Training Institutes in adequate number and quality is the basic requirement for carrying out any training program. The training in Irrigation Management involving interdisciplinary approach requires a faculty of 30 for each institute. There are ten institutes already set up in different states under the USAID and World Bank support and it is likely that some more institutes may be added to cover the rest of the states in the country. It is estimated that a total of about 450 faculty members shall be immediately needed.

### Present faculty position

Statement II indicates the faculty position in the ten training institutes already set up. It would be seen that except for WALMI, Maharashtra, the position is not very satisfactory. It has been experienced that the development of faculty is faster in the institutes which have been set up as autonomous bodies.

### Problems in recruiting faculty

The disciplines in which faculty are needed are:

- (a) Irrigation Engineering
- (b) Agronomy
- (c) Agriculture Engineering
- (d) Agriculture Economics
- (e) Sociology

It is generally seen that there is a lack of adequate number of faculty in the field of Agriculture Economics and Sociology.

In order to ensure the best and most useful training, it is necessary that the faculty at the State Training Institute is well qualified in their disciplines, along with expertise and experience in good training and teaching approaches. Faculty recruitment and the problems encountered need to be dealt with before we go into the problem of faculty development. As it is, the faculty has to be drawn from the universities as well as from the agricultural and irrigation departments on deputation basis. In some states like Tamil Nadu, there is no system of payment of deputation allowance. In case we succeed to have the services of Departmental personnel who has the aptitude to serve in this type of training institution, he is haunted for being shifted at the

completion of his period of deputation. In the process, the institution loses the services of such a faculty who might have been given special training. It has also been observed that there is a general reluctance to join the training institute, as this job does not entitle benefits and privileges a field engineer gets. Non-provision of residential accommodation in the new institutes being developed is one of the serious problems being faced in the recruitment of faculty. In the case of direct recruitment, it is felt that we may not get the best people as promotional opportunities are restricted in these institutes. Besides, there is also the requirement to have persons with field experience who are considered more useful for this type of training. In case requirement is met by superannuated staff on contract, their service can be utilized for a relatively short period. It is necessary that a major part of the faculty may constitute a permanent cadre leaving a small percentage for deputationists. It is necessary that some guidelines for the recruitment of faculty and incentives are laid down involving uniform services rules, scales, etc.

### Need for training of faculty

It is well known that university professors are highly qualified in their own discipline but lack in exposure to complex field problems in irrigation management involving interdisciplinary approach. The Department Personnel, on the other hand, need upgrading of their professional knowledge and, in addition, have to acquire appropriate skills in educational technology. Social scientists, in particular, may have neither the training nor the field experience related to irrigated agriculture. There is, thus, the need for training of faculty to provide practice-oriented training involving interdisciplinary approach.

### How to meet the training needs

The training strategy has to be developed to meet the immediate needs and the long-term needs:

#### Immediate needs

During the year 1984, a group of 19 officers drawn from different WALMIs were trained in the U.S.A. under the trainers program. based on the evaluation of 1984 batch of trainers, an orientation-cum-Diagnostic Analysis course was organized at Aurangabad for the 1985 batch and a group of 25 trainers have been deputed to the U.S.A. for further training. This batch of 25 includes two trainers from Walamatari, Andhra Pradesh supported by World Bank. The training for the subsequent batches would depend on further evaluation. It is proposed to organize future training programs involving substantial indigenous input relevant to local needs, including visits to projects in different parts of the country. There has been consensus that training abroad in developed and developing countries is also necessary to help provide the necessary exposure as well as incentive during the developing stage

of the institutes.

### Long-Term needs

A scheme has to be evolved so that training facilities and expertise can be built up in the country itself as early as possible. This would require establishing one or more institutes for training of trainers in India. As a short-term immediate remedy, strengthening of facilities in one or two existing educational institutes in the country may have to be thought of for this purpose. WRTDC Roorke and Anna University Madras have shown their interest in the the training of trainers. While developing the trainers programs of such Institutes, it has to be ensured that training in irrigation management does not become "academically oriented." The facility for the training of trainers has to be interdisciplinary and the training has to be field-oriented.

STATEMENT II

FACULTY POSITION AND THEIR TRAINING

S.No.	Name of the Institute	Sanctioned Strength	In Position	Trained-abroad during 1984		Trained-abroad during 1985	
				Trainers Course	Short Course	Trainers Course	Short Course
1.	WALMI, MAHARASHTRA	36	36	4	2	6	3
2.	WALMI, GUJARAT	29	11	4	2	1	2
3.	WALMATRI, ANDRHA PRADESH	-	8	-	-	-	-
4.	WALMI, MADHYA PRADESH	5	5	4	-	-	-
5.	WALMI, BIHAR	-	5	-	-	-	-
6.	WALMI, ORISSA	-	1	-	-	-	-
7.	WALMI, KARNATAKA	-	1	-	-	-	-
8.	MALMI, U.P.	-	4	-	-	-	-
9.	I.M.T.I., RAJASTHAN	22	16	4	1	3	-
10.	I.M.T.I., TAMIL NADU	22	9	3	1	3	-

### Topic 3: Assessment of Manpower to be trained, policy for training and post-training development.

#### Assessment of Manpower

The need for training of irrigation and agricultural professionals in Irrigation Management to enable them to accelerate the utilization of irrigation potential already created and achieve optimum yield per unit of land through better management practices, is well established. The first exercise which is required to be carried out, is a detailed study for the assessment of manpower to be trained for managing the irrigation systems in different States of India as on date and by 2000 A.D. Such an assessment will provide reliable data for realistic planning of the training program, number of persons to be trained at different levels, number of training courses to be conducted and infrastructure and support facilities to be provided for carrying out the training program. The feedback received indicates that such a study has been carried out only in Tamil Nadu with the help of Indian Institute of Management, Bangalore.

#### Training courses as planned

Though all the ten State Training Institutes supported by the USAID and the World Bank have been established, the training activity is yet to pick up for want of development of faculty and infrastructure. Statement III shows the long-term and short-term courses programmed by the training institutes during 1985-86. It would be seen that regular training courses for different levels of professionals are being carried out only in one training institute, i.e., at Aurangabad. At other institutes, short courses are being run, from time to time, on different topics connected with Irrigation Management. The content and duration etc. for the training courses for different levels of professionals will have to be more or less uniform, although the course material may vary region wise depending upon climatic, socio-economic, and prevailing cropping pattern conditions. At present there is no uniformity either in the course content or duration. It is also felt that the course material in the courses being run at present has an excess of "Academic baggage and is not field oriented." There is thus a great need for appropriate development of course material, lesson plans and field exercises for the different training courses in all the State Training Institutes.

#### Response from the department

It is the long-term training course involving about nine months at the middle level including three months, i.e., one crop season in the field which provides the intensive training in Irrigation Management, but it has been experienced that the State Governments are not able to spare sufficient number of people for the long-term course, on the plea of dislocation of work. In some cases, the participants themselves are not interested in the training due to lack of incentives. It is considered necessary that the training is made mandatory to ensure that all

professionals employed in irrigation management are trained by 2000 A.D. This may involve providing adequate number of training reserves to ensure that field work does not suffer during the absence of the professionals on training. It would be necessary to keep a regular roster for the numbers of professionals to be released for the training in advance to ensure that adequate number of trainers are available on a continuous basis. Certain incentives to trainees during the training period like providing free furnished accommodation, food at subsidized rates and surety to return to the place of their posting, etc. should be considered. The trainees can also be given certain incentive after successful completion of the training like the sanction of advance annual increments, etc. At the same time a report on the performance of the trainee during the training period should form a part of service record of the trainee to ensure that the trainee takes his training seriously.

### Deployment after training

Post-training deployment is a very important factor for the success of the training program and it is necessary that the State Governments should ensure that the professionals trained in irrigation management are posted to field duties where their training could be fully utilized. It has been experienced that personnel trained have been deployed in positions totally irrelevant to their training on grounds of administrative exigencies. There is thus a need for devising a proper policy both for training and post-training deployment to be executed through a training cell to be set up in each State.

STATEMENT III

TRAINING COURSES FOR 1985-86

S.No.	Name of Institute	Long-term courses	Short-term courses	Workshops and Seminars
1.	WALMI, MAHARASHTRA	2	10	1
2.	WALMI, GUJARAT	1	6	12
3.	WALMATRI, ANDRHA PRADESH	2	2	2
4.	WALMI, MADHYA PRADESH	-	5	9
5.	WALMI, BIHAR	1	1	2
6.	WALMI, ORISSA	-	-	-
7.	WALMI, KARNATAKA	-	-	-
8.	MALMI, U.P.	1	2	-
9.	I.M.T.I., RAJASTHAN	-	4	8
10.	I.M.T.I., TAMIL NADU	1	18	4

Topic 4: Role of universities/management institutes and linkages with International Institutes concerned with Irrigation Management.

Role envisaged in USAID supported IM&T Project:

USAID supported Irrigation Management and Training Project envisages involvement of two agricultural universities, namely M.P.K.V. Rehari in Maharashtra and Mohan Lal Sukhadia University, Udaipur in Rajasthan, and two engineering universities, namely M.S. University, Baroda in Gujarat and Anna University, Madras in Tamil Nadu. These universities have been associated for:

- (i) Building up staff capability in irrigation management, training and research involving interdisciplinary approach.
- (ii) Developing irrigation water management curricula for introduction of undergraduate and post-graduate courses of study.
- (iii) Providing staff as trainers in the State Training Institutes and training extension subject-matter specialists in irrigation management.
- (iv) Providing assistance to Action Research Program taken up on projects by the State Training Institutes in planning, designing, implementing and evaluation.
- (v) Conducting adaptive research on live irrigation systems by faculty and students.
- (vi) Mutually inter-acting for development of curricula and to enable engineering and agricultural students having courses in disciplines other than their own, developing technical guides, course material, teaching methods and conducting workshops and seminars, for creating greater understanding of Irrigation Management among irrigation and agricultural professionals and policy makers.

The Project also involves association of the two management institutes, namely Indian Institute of Management, Bangalore and Indian Institute of Management, Ahmedabad.

The role of management institutes is as under:

- (i) Developing staff capability in the field of irrigation management and offering interdisciplinary training programs in management, including social and behavioral sciences.
- (ii) Assisting training institutes in curricula development, training methodologies, planning, design and implementation of action programs and providing trainers.

- (iii) Identifying the management skills needed for different levels of professionals and organizing seminars and workshops for administrators and policy makers and short duration courses for senior level technical officers on social aspects involved in irrigation systems management.
- (iv) Carrying out field studies and developing methodologies for achieving greater farmer involvement in irrigation systems management.
- (v) Carrying out studies in the area of organizational and procedural changes and methodologies for improving the functioning of the Command Area Development Organizations.

#### Linkages envisaged between the training institutes and the center and with international institutes

Irrigation Research Management and Improvement Cell (IRMIC) set up at the Center will act as a focal unit for the acquisition and the dissemination of technical information in irrigation management within the country. It will closely be linked to the State Training Institutes, Agricultural and Engineering Universities and management institutes in respect of their programs in the field of irrigation management. This would ensure that maximum advantage of the training courses/workshops/seminars held at the different centers is taken by all the agencies and would also minimize duplication. IRMIC will be the central agency to collect all the information in regard to the activities in the field of irrigation management from external agencies as well. The information would be propagated by IRMIC in the form of a newsletter to all the agencies within the country.

#### Transfer of Technology

A technology transfer unit under the IRMI Cell at the Center shall be set up to disseminate technical information received from similar set ups in the training institutes through newsletter as well as by organizing seminars and workshops. Reports and analysis of action programs, training courses, workshops and seminars as well as other items of interest connected with Irrigation Management will be prepared by the training institutes, universities and management institutes in the form of a monthly newsletter which could be in English as well as in the local languages for wide circulation within the state. The central documentation center, besides compiling the activities of the state units, would also collect information in respect of work being done in this field by agencies outside the country and would bring it out in the quarterly bulletin on "Irrigation Management News." It would also develop a system to document research studies in irrigation management being carried out in India and abroad. The central documentation center would also arrange duplication of video cassettes programs to be distributed to all the training institutes, universities and management

institutes. The program will be prepared mainly by the State Training Institutes and universities for which professional production services involving scripting studies and field recording etc. are envisaged in the IM&T Project.

Training Institutes supported by World Bank

- (i) The association of state training institutes supported by the World Bank in respect of the activities envisaged under the USAID supported IM&T Project is considered equally important in the overall national interest. Mode and the manner of such association is a matter which deserves consideration.
- (ii) It appears necessary to identify more universities and institutes within the country which may be willing to undertake professional development programs in irrigation management, and encourage them to depute their candidates to these institutions for training.

ANNEX V

PURPOSE AND OBJECTIVES

CENTRAL WORKSHOP

ON POLICY AND STRATEGY ISSUES IN IRRIGATION MANAGEMENT

## ANNEX V

### PURPOSE AND OBJECTIVES

#### CENTRAL WORKSHOP

#### ON POLICY AND STRATEGY ISSUES IN IRRIGATION MANAGEMENT

##### PURPOSE:

To help the key officials associated with the Irrigation Management and Training Project to understand better the nature of the project, the needs of the states and participating organization relative to the project, and for the officials of the Center and the States to evolve appropriate methodologies for successfully implementing this largest human and institutional software project, in which USAID and the Government of India are involved.

##### OBJECTIVES:

1. To create a high level of understanding of the project needs.
2. To examine the progress up-to-date and constraints.
3. To enable the representatives from the States and participating organizations to represent their needs for speedier and smoother implementation of the Project.
4. To discuss policy issues in Irrigation Management and create the environment as well as evolve methodologies for implementing the project.
5. To work out the steps necessary for building up the capabilities of selected Engineering and Agricultural Universities for introducing Irrigation Management courses in the curriculum of undergraduate and post-graduate courses.
6. To ensure greater and effective interaction among the training institutes, the universities and institutes of management.
7. To understand the far-reaching implications of professional development and institutional changes needed for more effective management of irrigation systems in India.

ANNEX VI

THE WATER MANAGEMENT SYNTHESIS II PROJECT

## ANNEX VI

### THE WATER MANAGEMENT SYNTHESIS II PROJECT

Irrigated agriculture is important to developing countries and is becoming more so as the frontiers of new cultivable land are becoming increasingly exhausted in response to population pressures. This necessitates a substantial increase in the agriculture production, specially in India, where the population is expected to top the one billion mark early next century. According to a recent survey carried out by Brookings Institution, Washington, D.C., average yields for irrigated wheat and rice, the principal irrigated food grains, must rise by nearly 70% from about 1.6 tons/ha, at present, to approximately 1.45 tons/ha, in the year 2000 A.D., in order to meet the projected demands. Further, the cropping intensities under irrigation must rise from the present 125% to at least 160%.

This can only be achieved by considerable improvement in the design, construction, maintenance, operation and management of the irrigation systems. Developing countries need help in rapidly building up their capabilities to make irrigation systems more productive. To assist in this effort, a project entitled Water Management Synthesis II Project (as an extension of activities begun earlier), was developed. This is an attempt by USAID to integrate its own activities, those of the involved universities, and those of a number of host countries to develop an interdisciplinary approach to solving irrigation problems throughout the world. The project will provide training and technical assistance to missions (and host countries), conduct special studies and systematically transfer appropriate technology for adaption, adoption and diffusion. An important object of the project activities is that of producing at all levels within host countries new attitudes, and behaviors, supportive of viable, progressive irrigation water management programs.

Colorado State, Utah State, and Cornell Universities have been designated lead universities in a \$19.8 million, 5 year project that the Consortium for International Development signed in Washington, U.S.A., in 1982, to develop world wide water management strategies. Project design has come from the faculty at the three major universities, who have had extensive experience in Pakistan, Egypt, Bangladesh, India, Sri Lanka, Indonesia, the Philippines and several other developing countries. The project structure includes four major activity components--technical assistance, training, technology transfer and special studies.

WMS II has evinced considerable interest in the Irrigation Management and Training Project, the largest human resources and institutional development project undertaken till now. It was realized that for the successful implementation of this project, policy-level officers at the states and in the center, who are connected with irrigated agriculture, become more aware of the objectives of the project and the manner in which the different participating departments and agencies of the Government will have to coordinate and operate with an

interdisciplinary and team approach. To assess the administrative, organizational and managerial problems in the implementation of such a unique project, devoted entirely to the development of India's human and institutional resources in the irrigation sector, WMS II has funded the organization and conduct of five project orientation workshops in the five states of Gujarat, Madhya Pradesh, Maharashtra, Rajasthan and Tamil Nadu, and a Central Workshop on policy issues in irrigation management at Delhi. The findings of these workshops are to be well-documented and used while planning similar exercises in other developing countries.

ANNEX VII

CONCLUSIONS AND RECOMMENDATIONS

PROJECT ORIENTATION WORKSHOPS

## ANNEX VII

### CONCLUSIONS AND RECOMMENDATIONS

#### PROJECT ORIENTATION WORKSHOPS

Project Orientation Workshops were held in the different states as indicated below:

Tamil Nadu	Jan. 11-12, 1984
Gujarat	Jan. 31-Feb. 1, 1984
Maharashtra	Feb. 25-26, 1984
Madhya Pradesh	Mar. 26-27, 1984
Rajasthan	June 14-15, 1984

The Workshops were of two days duration each and senior officials of the respective State Governments connected with irrigated agriculture, officials of the Government of India, senior professionals in the field of irrigation and agriculture in the State Governments and academics from engineering and agricultural universities participated in the discussions. It was a unique occasion in each state, when not only the different departments of the state governments attended a common workshop to discuss software problems in connection with the development of human resources in the irrigation sector, but also the first occasion when professionals and academics connected with irrigated agriculture were brought together for an exchange of ideas on the linkages that could be established for the training of professionals in the field of irrigation management. Also, these workshops have served as an eye-opener to the professionals and the academics on the technical, organizational and procedural innovations developed and suggested through this project.

As list of conclusions and recommendations arrived at the various workshops is as below:

1. There is a need for all professionals connected with irrigated agriculture to undergo training in irrigation management.
2. Irrigation and Agriculture Department should depute adequate number of professionals at all levels for training at the State Training Institutes.
3. Action program is an important component of the training and should be taken up in one or more live systems in the state.
4. The type, duration and course content of the training would vary for different levels of professionals, depending on the job requirements.
5. There is a need to evolve appropriate curricula for the different courses. Technical assistance may be availed of, for this purpose.

6. Linkage of the training and action programs at the State Training Institutes with Engineering and Agricultural Universities would be mutually beneficial.
7. The first and foremost need is the training of trainers, who would join the faculty of the Training Institutes. For this purpose, it is necessary to select quality personnel from the department and the universities and offer them adequate incentives.
8. The training of the faculty may be initially carried out at appropriate institutions outside the country. Later training centers may be established for the purpose within the country.
9. Trainers so trained shall give an undertaking to serve the State Training/Universities for a period of at least three years after return from training.
10. There is an urgent need to carry out a manpower assessment of personnel needed for managing the irrigation systems in each state as of now and by 2000 A.D. Such an assessment should be both qualitative and quantitative.
11. There is a great need to involve farmers right from the planning and implementation stage to the stage of operation and maintenance of the systems. This is a new field and training has to be given to the professionals on the methodologies for the same.
12. A technology transfer cell should be established in each State Technical Institute. This should coordinate with the Central Unit in IRMIC and the documentation center to be set up at the Indian Institute of Management, Bangalore.
13. There is a felt need for creation of a separate Irrigation Management cadre. However, considerable amount of planning is necessary to evolve an appropriate methodology for setting up such a cadre.

ANNEX VIII

GOVERNMENT OF INDIA MEMORANDUM OF TRAINING

## ANNEX VIII

No. 12617/86-Trg(TNP)  
Government of India  
Ministry of Personnel, Public Grievances and Pension,  
Department of Personnel & Trg.  
(Training Division)

Block No. 11, 2nd Floor,  
CGO Complex, Lodi Road,  
New Delhi - 110003.

Feb. 7, 1986

### OFFICE MEMORANDUM

Reference is invited to this Ministry's O.M.No 94/DS(TT)/85 dated the 13th September, 1985 regarding improvement in service conditions of faculty members in the training institutions.

At the instance of the Secretary, Ministry of Finance, Department of Expenditure, a meeting was convened by the Cabinet Secretary to formulate a uniform basis to be adopted to work out the details of the incentive to be extended to the faculty of the training institutions under the control of different Ministries/Departments, so as to attract the best trainer talent. In the light of the decisions taken at this meeting, the following guidelines are laid down in this connection:

- (i) Keeping in view the various constraints, it might not be feasible to take up all the training institutions simultaneously for the purpose in mind. Therefore, any incentive scheme that may be drawn up should cover the training institutions meant for Gr.'A' officers in the beginning and gradually extended to others.
- (ii) With regard to faculty members who join the training institutions on deputation, their emoluments may be raised by 30% of the total emoluments which they would be getting in their cadre, while posted in the field. The total emoluments in this context would mean the total monetary benefits, both direct and indirect, received by such officers before their deputation to training institutions, e.g., if an officer was provided with rent-free accommodation, this should be treated as indirect monetary expensation and included while calculating 30% of the emoluments. The exact manner in which this could be done, should be worked out by each Department for the training institutions with which it is concerned. So far as permanent faculty members of training institutions are concerned, suitable proposals for enhancement of their pay/special pay on similar lines should be worked out by the Department concerned.
- (iii) The head of the training institution alone may be given a

sumptuary allowance of Rs. 250/0 (Rupees two hundred and fifty) per month because his duties will require meeting with and entertaining small groups of students/faculty/visiting faculty.

- (iv) Other things being equal, those who have had a successful tenure on the faculty of training institutions may be given preference in matters like promotion.
- (v) On the completion of the tenure with the training institution, each officer should be given the facility of three options relating to his next posting and the Department concerned would arrange for the posting according to the option exercised by the officer.
- (vi) Each training institution should draw up a program for constructing adequate number of residential quarters for housing its faculty members. So long as this does not become possible, the possibility of allotment of houses from General Pool may be considered. (It has been pointed out on behalf of the Ministry of Urban Development that it might not be possible to allot houses from General Pool in view of acute shortage of accommodation, specially in big cities). Where accommodation is inadequate, suitable provisions for hiring accommodation on Government account and renting it to faculty member may be made on the pattern being adopted by Ministry of Railways and the Services Headquarters.
- (vii) Each child of the member of the faculty continuing his education at a center other than the place of training institution, should be given leave travel concession twice a year, to be able to join his parents.
- (viii) The incentive worked out on the basis of the guidelines contained in this Office Memorandum and consequential orders will take effect from January 1, 1986 so that any delay in issue of actual orders by the respective Ministries/Departments will not be prejudicial to the deputationists serving in training institutions at present.

This Ministry may be kept informed of the action taken in this regard from time to time.

Receipt of this O.M. may kindly be acknowledged.

Sd/-  
(T.N. THAKUR)  
Deputy Secretary (Training)

To

All Ministries/Departments of the Government of India.

ANNEX IX

EVALUATION FORM - PROJECT ORIENTATION WORKSHOP

ANNEX IX

EVALUATION FORM - PROJECT ORIENTATION WORKSHOP

Irrigation Management and Training Project

EVALUATION

NAME: (Optional) \_\_\_\_\_

POSITION \_\_\_\_\_

WORKSHOP TITLE: Project Orientation Workshop - Irrigation Management and Training Project

DATES AND SESSIONS ATTENDED \_\_\_\_\_

Please take a few minutes to fill out this workshop evaluation form. Your comments will be useful in improving the other workshops to be held in other States.

1. Appraisal of Workshop Content:

1. To what extent did this workshop meet with the objectives stated?

Fully / / To a large measure / / To some extent / /  
Not at all / / (Check one only)

2. How did the subject matter of this workshop interest you? (Circle one)

High Low  
10 9 8 7 6 5 4 3 2 1

3. How would you grade the usefulness of this workshop? (Circle one)

High Low  
10 9 8 7 6 5 4 3 2 1

4. In your opinion, what is the degree to which the workshop would be useful to: (Circle one)

	High	Low
a. Senior officials	10 9 8 7 6 5 4 3 2 1	
b. Middle level officers	10 9 8 7 6 5 4 3 2 1	
c. Trainers of State Training Institutes	10 9 8 7 6 5 4 3 2 1	
d. Participants in action research projects	10 9 8 7 6 5 4 3 2 1	
e. Participants in educational institutions	10 9 8 7 6 5 4 3 2 1	



II. Administrative Arrangements:

Please comment on the following: (Check one under each)

- 1. Received the invitation in time? Yes / / No / /
- 2. Received the lead papers in time? Yes / / No / /
- 3. Are meeting facilities up to the mark? Yes / / No / /
- 4. Are you satisfied with the conduct of the workshop? Yes / / No / /
- 5. Which of the following features of the workshop need further improvement?
  - a. Organization / /
  - b. Convenience of timing / /
  - c. Program format / /
  - d. Location / /
  - e. Arrangement for holding the sessions / /

III. Any Others:

- 1. Do you consider that a similar workshop at the Center would be useful in a better understanding of the findings of the needs of the States?

Very much / / Much / /  
Not sure / / Doubtful / /  
Very doubtful / /

- 2. Please make any other comment you wish to make:

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Thank you very much for your participation at the workshop and your cooperation in filling out the above form.

ANNEX X

PROJECT ORIENTATION WORKSHOPS - ANALYSIS OF EVALUATION

ANNEX X

PROJECT ORIENTATION WORKSHOP - ANALYSIS OF EVALUATION SHEETS

S.NO	DETAIL	STATE					SUMMATION		
		GUJARAT	MADHYA PRADESH	MAHARASHTRA	RAJASTHAN	TAMIL NADU	TOTAL	NO. IN	%
1.	TO WHAT EXTENT DID THIS WORKSHOP MEET WITH THE OBJECTIVES STATED?								
	FULLY	9	1	2	2	3	97	17	17.53
	TO A LARGE MEASURE	17	9	12	14	14	97	66	68.04
	TO SOME EXTENT	4	1	2	3	4	97	14	14.43
	NOT AT ALL	-	-	-	-	-	-	-	-
2.	HOW DID THE SUBJECT MATTER OF THIS WORKSHOP INTEREST YOU?								
	VERY MUCH (10 & 9)	10	3	2	4	10	97	29	29.90
	MUCH (8 to 6)	17	8	14	12	10	97	61	62.89
	NOT MUCH (5 & 4)	3	-	-	2	1	97	6	6.18
	NOT AT ALL (Below 4)	-	-	-	1	-	97	1	1.03
3.	HOW WOULD YOU GRADE THE USEFULNESS OF THIS WORKSHOP?								
	VERY USEFUL (10 & 9)	10	4	3	5	9	97	31	31.96
	USEFUL (8 to 5)	15	6	1	11	10	97	54	55.67
	DOUBTFUL (5 & 4)	5	1	1	3	1	97	11	11.34
	NOT AT ALL USEFUL (Below 4)	-	-	-	-	1	97	1	1.03
4.	IN YOUR OPINION, WHAT IS THE DEGREE TO WHICH THE WORKSHOP WOULD BE USEFUL TO?								
	(a) SENIOR OFFICERS:								
	VERY USEFUL (10 & 9)	16	7	6	6	15	96	50	52.08
	USEFUL (8 to 6)	9	3	8	13	3	96	37	38.54
	DOUBTFUL (5 & 4)	4	-	-	-	3	96	7	7.29
	NOT AT ALL USEFUL (Below 4)	1	-	1	-	-	96	2	2.09

S.NO	DETAIL	STATE					SUMMATION		
		GUJARAT	MADHYA PRADESH	MAHARASHTRA	RAJASTHAN	TAMIL NADU	TOTAL	NO. IN	%
(b) MIDDLE LEVEL OFFICERS?									
	VERY USEFUL (10 & 9)	11	-	3	7	6	91	27	29.67
	USEFUL (8 to 6)	16	8	9	11	11	91	55	60.44
	DOUBTFUL (5 & 4)	2	-	3	-	3	91	8	8.79
	NOT AT ALL USEFUL (Below 4)	1	-	-	-	-	91	1	1.10
(c) TRAINERS OF STATE TRAINING INSTITUTES?									
	VERY USEFUL (10 & 9)	19	2	1	8	6	81	36	44.44
	USEFUL (8 to 6)	8	5	8	6	7	81	34	41.98
	DOUBTFUL (5 & 4)	2	-	3	2	3	81	10	12.35
	NOT AT ALL USEFUL (Below 4)	-	-	1	-	-	81	1	1.23
(d) PARTICIPANTS IN ACTION RESEARCH PROJECTS?									
	VERY USEFUL (10 & 9)	14	2	3	7	5	80	31	38.75
	USEFUL (8 to 6)	10	4	5	7	7	80	33	41.25
	DOUBTFUL (5 & 4)	3	1	4	1	4	80	13	16.25
	NOT AT ALL USEFUL (Below 4)	-	-	2	1	-	80	3	3.75
(e) PARTICIPANTS FROM EDUCATIONAL INSTITUTIONS?									
	VERY USEFUL (10 & 9)	8	3	2	4	6	77	23	29.88
	USEFUL (8 to 6)	9	3	3	9	8	77	32	41.56
	DOUBTFUL (5 & 4)	6	2	5	-	2	77	15	19.48
	NOT AT ALL USEFUL (Below 4)	1	-	3	3	-	77	7	9.08
5. DO YOU FEEL SIMILAR WORKSHOPS ON DIFFERENT ASPECTS OF IRRIGATION USEFUL FOR SENIOR OFFICIALS?									
	YES	27	10	13	19	18	97	87	89.69
	PERHAPS	3	1	3	-	2	97	9	9.28
	NO	-	-	-	-	1	97	1	1.03

S.NO	DETAIL	STATE					SUMMATION			
		GUJARAT	MADHYA PRADESH	MAHARASHTRA	RAJASTHAN	TAMIL NADU	TOTAL	NO.IN	%	
6.	DO YOU THINK THE GROUP DISCUSSIONS AT THIS WORKSHOP HAVE LED TO USEFUL CONCLUSIONS?									
	YES	29	11	14	19	19	97	92	94.85	
	NO	1	-	2	-	2	97	5	5.15	
7.	SUGGEST ANY OTHER PROCEDURES OR METHODOLOGIES FOR CONDUCTING WORKSHOP									
8.	HOW WOULD YOU RATE THE VIDEOS & VISUALS IN THE WORKSHOP?									
	VERY HIGH (10 & 9)	13	4	5	1	5	97	28	28.87	
	HIGH (9 to 6)	11	6	7	9	12	97	45	46.39	
	NOT SURE (5 & 4)	5	-	4	4	1	97	14	14.43	
	POOR (Below 4)	1	1	-	5	3	97	10	10.31	
9.	HAVE THE VIDEO SHOWS BEEN HELPFUL IN IMPROVING UNDERSTANDING OF IRRIGATION MANAGEMENT?									
	YES	25	11	15	13	19	92	83	90.22	
	NO	2	-	1	5	1	92	9	9.78	
10.	COMMENT ON UTILITY OF LEAD PAPERS									
	VERY USEFUL	11	7	6	3	9	79	36	45.57	
	USEFUL	13	3	10	7	10	79	43	54.43	
	NOT VERY USEFUL									
		MANY DID NOT COMMENT AS THEY DID NOT RECEIVE LEAD PAPERS								
II.	ADMINISTRATIVE ARRANGEMENTS:									
1.	RECEIVED THE INVITATION IN TIME?									
	YES	23	10	15	16	19	92	83	90.22	
	NO	6	1	-	2	-	92	9	9.78	

S.NO	DETAIL	STATE					SUMMATION		
		GUJARAT	MADHYA PRADESH	MAHARASHTRA	RAJASTHAN	TAMIL NADU	TOTAL	NO. IN	%
2.	RECEIVED LEAD PAPERS IN TIME?								
	YES	15	8	13	4	12	87	52	59.77
	NO	12	2	2	14	5	87	35	40.23
3.	ARE MEETING FACILITIES UP TO THE MARK?								
	YES	29	11	15	17	21	94	93	98.94
	NO	1	-	-	-	-	94	1	1.06
4.	ARE YOU SATISFIED WITH THE CONDUCT OF THE WORKSHOP?								
	YES	30	11	15	18	20	96	94	97.92
	NO	-	-	1	-	1	96	2	2.08
5.	WHICH OF THE FOLLOWING FEATURES OF THE WORKSHOP NEED IMPROVEMENT?								
	A. ORGANIZATION	1	1	-	3	2	97	7	7.22
	B. CONVENIENCE OF TIMING	5	4	1	1	2	97	13	13.40
	C. PROGRAM FORMAT	8	3	4	8	7	97	30	30.93
	D. LOCATION	2	-	1	1	2	97	6	6.19
	E. ARRANGEMENTS FOR HOLDING THE SESSIONS	2	-	-	4	-	97	6	6.19
III.	DO YOU CONSIDER SIMILAR WORKSHOPS AT CENTER WOULD HELP THE STATES?								
	VERY MUCH	6	2	5	7	10	92	30	32.61
	MUCH	19	7	5	11	10	92	52	56.52
	NOT SURE	3	-	1	1	1	92	6	6.52
	DOUBTFUL	-	2	1	-	-	92	3	3.26
	VERY DOUBTFUL	-	-	1	-	-	92	1	1.09

ANNEX XI

EVALUATION FORM

CENTRAL WORKSHOP ON POLICY AND STRATEGY ISSUES

ANNEX XI  
CENTRAL WORKSHOP  
ON  
POLICY ISSUES IN IRRIGATION MANAGEMENT  
EVALUATION

NAME: (Optional) \_\_\_\_\_

POSITION: \_\_\_\_\_

WORKSHOP TITLE: CENTRAL WORKSHOP ON POLICY ISSUES IN IRRIGATION  
MANAGEMENT.

SESSIONS ATTENDED: FORENOON / / AFTERNOON / /

(Please take a few minutes to fill out this evaluation form. Your comments will be useful in improving the form and content of similar workshops to follow).

1. To what extent did this workshop meet with the objects indicated?  
(Check one only)

Fully / / To a large measure / / To some extent / /  
Not at all / /

2. How would you grade the usefulness of this workshop?  
(Circle one only)

High  
10 9 8 7 6 5 4 3 2 1  
Low

3. Do you think that the group discussions at this workshop have led to a better understanding of the component of the Irrigation Management and Training Project? (Check one only)

Yes / / No / /

4. If the answer to the above is "NO", please suggest any other methodology for conducting such a workshop.

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5. Do you feel similar workshops from time to time on the progress of different components of the project would be useful for more effective and speedy implementation of the IM&T project?  
(check one only)  
Yes / / Perhaps / / No / /

Why?

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6. In your opinion, what do you feel should be the duration of such a workshop? (Check one only)  
1 day / / 1-1/2 days / / 2 days / /

7. Please comment on the utility of the brochure on the issues, circulated in advance, for facilitating the discussions at the workshop. (Check one only)  
Very useful / / Useful / / Not useful / /

If not, why not?

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(Thank you very much for your participation at the workshop and your cooperation in filling out the above form.)

M. N. VENKATESAN,  
CONSULTANT,  
CONSORTIUM FOR INTERNATIONAL DEVELOPMENT

WATER MANAGEMENT SYNTHESIS PROJECT REPORTS

## WATER MANAGEMENT SYNTHESIS PROJECT REPORTS

- WMS 1    Irrigation Projects Document Review  
          Executive Summary  
          Appendix A: The Indian Subcontinent  
          Appendix B: East Asia  
          Appendix C: Near East and Africa  
          Appendix D: Central and South America
- WMS 2    Nepal/USAID:    Irrigation Development Options and Investment  
                  Strategies for the 1980's
- WMS 3    Bangladesh/USAID:  Irrigation Development Options and Investment  
                  Strategies for the 1980's
- WMS 4    Pakistan/USAID:    Irrigation Development Options and Investment  
                  Strategies for the 1980's
- WMS 5    Thailand/USAID:    Irrigation Development Options and Investment  
                  Strategies for the 1980's
- WMS 6    India/USAID:        Irrigation Development Options and Investment  
                  Strategies for the 1980's
- WMS 7    General Asian Overview
- WMS 8    Command Area Development Authorities for Improved Water Management
- WMS 9    Senegal/USAID:    Project Review for Bakel Small Irrigated  
                  Perimeters Project No. 685-0208
- WMS 10   Sri Lanka/USAID:    Evaluation Review of the Water Management  
                  Project No. 383-0057
- WMS 11   Sri Lanka/USAID:    Irrigation Development Options and Investment  
                  Strategies for the 1980's
- WMS 12   Ecuador/USAID:    Irrigation Sector Review
- WMS 13   Maintenance Plan for the Lam Nam Oon Irrigation System in  
                  Northeast Thailand
- WMS 14   Peru/USAID:        Irrigation Development Options and Investment  
                  Strategies for the 1980's
- WMS 15   Diagnostic Analysis of Five Deep Tubewell Irrigation Systems in  
                  Joydebpur, Bangladesh
- WMS 16   System H of the Mahaweli Development Project, Sri Lanka: 1980  
                  Diagnostic Analysis

- WMS 17 Diagnostic Analysis of Farm Irrigation Systems on the Gambhiri Irrigation Project, Rajasthan, India: Volumes I-V
- WMS 18 Diagnostic Analysis of Farm Irrigation in the Mahi-kadana Irrigation Project, Gujarat, India
- WMS 19 The Rajangana Irrigation Scheme, Sri Lanka: 1982 Diagnostic Analysis
- WMS 20 System H of the Mahaweli Development Project, Sri Lanka: 1983 Diagnostic Analysis
- WMS 21 Haiti/USAID: Evaluation of the Irrigation Component of the Integrated Agricultural Development Project No. 521-0078
- WMS 22 Synthesis of Lessons Learned for Rapid Appraisal of Irrigation Strategies
- WMS 23 Tanzania/USAID: Rapid Mini Appraisal of Irrigation Development Options and Investment Strategies
- WMS 24 Tanzania/USAID: Assessment of Rift Valley Pilot Rice Project and Recommendations for Follow-On Activities
- WMS 25 Interdisciplinary Diagnostic Analysis of a Work Plan for the Dahod Tank Irrigation Project, Madhya Pradesh, India
- WMS 26 Prospects for Small-Scale Irrigation Development in the Sahel
- WMS 27 Improving Policies and Programs for the Development of Small-Scale Irrigation Systems
- WMS 28 Selected Alternatives for Irrigated Agricultural Development in Azua Valley, Dominican Republic
- WMS 29 Evaluation of Project No. 519-0184, USAID/El Salvador, Office of Small-Scale Irrigation - Small Farm Irrigation Systems Project
- WMS 30 Review of Irrigation Facilities, Operation and Maintenance for Jordan Valley Authority
- WMS 31 Training Consultancy Report: Irrigation Management and Training Program
- WMS 32 Small-Scale Development: Indonesia/USAID
- WMS 33 Irrigation Systems Management Project Design Report: Sri Lanka
- WMS 34 Community Participation and Local Organization for Small-Scale Irrigation
- WMS 35 Irrigation Sector Strategy Review: USAID/India; with Appendices, Volumes I and II (3 volumes)

- WMS 36 Irrigation Sector Assessment: USAID/Haiti
- WMS 37 African Irrigation Overview: Summary; Main Report; An Annotated Bibliography (3 volumes)
- WMS 38 Diagnostic Analysis of Sirsia Irrigation System, Nepal
- WMS 39 Small-Scale Irrigation: Design Issues and Government Assisted Systems
- WMS 40 Watering the Shamba: Current Public and Private Sector Activities for Small-Scale Irrigation Development
- WMS 41 Strategies for Irrigation Development: Chad/USAID
- WMS 42 Strategies for Irrigation Development: Egypt/USAID
- WMS 43 Rapid Appraisal of Nepal Irrigation Systems
- WMS 44 Direction, Inducement, and Schemes: Investment Strategies for Small-Scale Irrigation Systems
- WMS 45 Post 1987 Strategy for Irrigation: Pakistan/USAID
- WMS 46 Irrigation Rehab: User's Manual
- WMS 47 Relay Adapter Card: User's Manual
- WMS 48 Small-Scale and Smallholder Irrigation in Zimbabwe: Analysis of Opportunities for Improvement
- WMS 49 Design Guidance for Shebelli Water Management Project (USAID Project No. 649-0129) Somalia/USAID
- WMS 50 Farmer Irrigation Participation Project in Lam Chamuak, Thailand: Initiation Report
- WMS 51 Pre-Feasibility Study of Irrigation Development in Mauritania: Mauritania/USAID
- WMS 52 Command Water Management - Punjab Pre-Rehabilitation Diagnostic Analysis of the Niazbeg Subproject
- WMS 53 Pre-Rehabilitation Diagnostic Study of Sehra Irrigation System, Sind, Pakistan
- WMS 54 Framework for the Management Plan: Niazbeg Subproject Area
- WMS 55 Framework for the Management Plan: Sehra Subproject Area
- WMS 56

- WMS 57 Diagnostic Analysis of Parakrama Samudra Scheme, Sri Lanka: 1985  
Yala Discipline Report
- WMS 58 Diagnostic Analysis of Giritale Scheme, Sri Lanka: 1985 Yala  
Discipline Report
- WMS 59 Diagnostic Analysis of Minneriya Scheme, Sri Lanka: 1986 Yala  
Discipline Report
- WMS 60 Diagnostic Analysis of Kaudulla Scheme, Sri Lanka: 1986 Yala  
Discipline Report
- WMS 61 Diagnostic Analysis of Four Irrigation Schemes in Polonnaruwa  
District, Sri Lanka: Interdisciplinary Analysis
- WMS 62 Workshops for Developing Policy and Strategy for Nationwide  
Irrigation and Management Training. USAID/India