

PD ABR-925
103602

His Majesty's Government
Ministry of Water Resources
Department of Irrigation

Irrigation Management Division

Irrigation Management Transfer Project

CONTRACT COMPLETION REPORT

May 30, 1996 - November 20, 1999

for
Office of Agricultural and Rural Development
U S Agency for International Development
Kathmandu, Nepal

Prepared by
Technical Assistance Team
Computer Assisted Development, Inc , USA
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Contract No 367-C-00-96-00081-00

January 2000

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ACRONYMS

AP	Action Plan
AsDB	Asian Development Bank
CADI	Computer Assisted Development Inc
DE	District Engineers
DIO	District Irrigation Office
DOI	Department of Irrigation
DGWRD	Directorate General Water Resources Development (Indonesia)
GAD	Gender and Development
HMG	His Majesty's Government
ICID	International Congress of Irrigation and Drainage
IMD	Irrigation Management Division
IMTP	Irrigation Management Transfer Project
INGO	International Non-Governmental Organization
INPIM	International Network for Participatory Irrigation Management
ISF	Irrigation Service Fees
IWMI	International Water Management Institute
MOA	Memorandum of Agreement
MOF	Ministry of Finance
MOWR	Ministry of Water Resources
NGO	Non-Governmental Organization
PACD	Project Activity Completion Date
PIM	Participatory Irrigation Management
PTOS	Post Turnover Support
RTDB	Research and Technology Development Branch
SMC	Subproject Management Committee
TA	Technical Assistance
TNA	Training Needs Assessment
USAID	United States Agency for International Development
VDC	Village Development Committee
WID	Women in Development
WUA	Water Users' Association

PREFACE

The Irrigation Management Transfer Project (IMTP) in Nepal is a collaborative venture between the U S Agency for International Development (USAID), the Asian Development Bank (AsDB), the Government of Nepal, and the Project farmers. The Project will rehabilitate selected government operated irrigation systems, and transfer the management of these systems to Water Users Associations (WUAs). The Asian Development Bank is primarily financing physical rehabilitation of the irrigation systems while USAID/Nepal is providing technical assistance services to the WUAs and to the Irrigation Management Division within the Department of Irrigation (IMD/DOI).

IMTP is divided into two phases. Phase I of the Project is designed to assist the government to transfer the operation and maintenance and/or ownership of three public irrigation schemes (Khageri, Panchakanya, West Gandak) either partially or totally to the WUAs, and to prepare eight additional irrigation systems (Banganga, Chaurjahari, Pathraya, Mohana, Manusmara, Hardinath, Kamala, and Chandra Canal) for future management transfer. Phase II of the Project is designed to assist the government to transfer these eight schemes either totally or partially to the WUAs. The Project, therefore, is designed to assist in transferring eleven irrigation schemes to WUAs.

USAID has contracted Computer Assisted Development, Inc (CADI) on May 30, 1996 to provide and coordinate the technical assistance services to enhance IMD/DOI's capability to implement the project, to further refine IMD/DOI's management transfer strategies, to strengthen the WUAs so that they can take over full management transfer responsibility, and to assist the WUAs to become self-reliant, self-sustaining business enterprises.

Under the contract, CADI is teamed with APTEC Consultancy (P) Ltd, a private Nepalese consulting firm to provide the technical and managerial expertise to IMD/DOI and WUAs.

The authors of this report would like to thank the IMD/DOI central and field office staff for their cooperation in accomplishing the activities. Their help is sincerely appreciated.

EXECUTIVE SUMMARY

Project Description

The Irrigation Management Transfer Project (IMTP) in Nepal is a collaborative venture between the U S Agency for International Development (USAID), the Asian Development Bank (AsDB), the Government of Nepal, and Project farmers. The Project will rehabilitate selected government operated irrigation systems, and transfer the management of these systems to Water Users Associations (WUAs). The Asian Development Bank is primarily financing physical rehabilitation of the irrigation systems while USAID/Nepal is providing technical assistance services to the WUAs and to the Irrigation Management Division within the Department of Irrigation (IMD/DOI).

IMTP is divided into two phases. Phase I of the Project (June 1995 - June 1998) is designed to assist the government to transfer the operation and maintenance and/or ownership of three public irrigation schemes (Khageri, Panchakanya, West Gandak) either partially or totally to the WUAs, and to prepare eight additional irrigation systems (Banganga, Chaurjahari, Pathraya, Mohana, Manusmara, Hardinath, Kamala, and Chandra Canal) for future management transfer. Phase II of the Project (June 1998 - June 2002) is designed to assist the government to transfer these eight schemes either totally or partially to the WUAs. The Project, therefore, is designed to assist in transferring eleven irrigation schemes to WUAs.

The Project officially began on June 14, 1995, when the AsDB loan to HMG (His Majesty's Government) became effective. The Project will be due for closure on June 30, 2002, though field activities should be completed by December 31, 2001. The Project refers to the eleven IMTP irrigation systems as "subprojects," and the terminology will be used throughout this report.

Technical Assistance (TA) Services

USAID/Nepal's full assistance to the Project began on May 30, 1996, when a three-year (May 1996 - May 1999) IMTP technical assistance contract was signed between USAID and CADI (Computer Assisted Development, Inc), and APTECH, a local Nepalese consulting firm. In 1997, USAID/Nepal changed the PACD (Project Activities Completion Date) to July 31, 1998 (subsequently extended two months to September 30, 1999). In September 1998, USAID/Nepal extended the IMTP contract for another twelve months, to September 30, 1999. On September 29, 1999 USAID/Nepal extended the technical assistance contract for another 50 days, until November 20, 1999.

Project Goals and Objectives

The overall goals and accompanying objectives of the Project focus on irrigation management transfer strategies and processes, capability building of institutions, and actual transfer of eleven subprojects to WUAs. Both IMTP donors (AsDB, USAID) have similar Project goals and objectives.

The loan agreement between AsDB and HMG states:

The goal of the project is to assist DOI in improving the O&M of irrigation facilities currently managed by DOI by involving farmer-beneficiaries in their operation and management, thereby complementing ongoing efforts to encourage the private sector's participation in irrigation development, promote economic growth, and reduce poverty in rural areas.

The specific objectives of the Project are (a) to refine and institutionalize within DOI processes and strategies for transferring to WUAs the O&M responsibility for and, if appropriate, legal ownership of such irrigation facilities, and (b) to make such transfers of irrigation facilities to the WUAs in the project area in accordance with their capacity to mobilize local resources.

USAID/Nepal has the same general approach to IMTP's goals and objectives. The USAID/Nepal-CADI contract states:

IMTP is designed to assist HMG/N improve irrigation system efficiency and sustain effective irrigation management practices by democratic WUAs. This will be accomplished through (a) establishment of WUAs, (b) physical system improvement and rehabilitation, (c) active participation of WUAs in decision making for system improvement and rehabilitation, O&M, and enforcing rules and sanctions, (d) establishing functioning water share systems to generate local revenue to enable WUAs to share costs for system improvement and rehabilitation, and to fully finance the routine O&M of the system after management transfer, (e) the transfer of irrigation systems control and management from government to democratically elected WUAs, (f) technical assistance support to WUAs and farmers to promote enterprises that provide collective services to community needs, and technical assistance to the DOI to effectively implement the project.

The USAID/Nepal-CADI contract also outlines the key objectives of the IMTP technical assistance component

- Enhance the institutional management system and technical competence of the Irrigation Management Division to develop plans and programs, oversee the implementation and management, and monitor and evaluate Irrigation Management Transfer Project interventions
- Advise and assist the IMD/DOI to establish viable WUAs in 11 subprojects included under the IMTP
- Advise and help WUAs to enhance their ability to become functional WUA enterprises which will allow WUA Water Share Systems to be put in place to enable WUAs to generate local resources to share the cost of system rehabilitation, finance O&M costs of systems, and deliver efficient irrigation management services to farmer beneficiaries
- Advise and assist WUAs and farmers to establish linkages with various public and private, agricultural support service entities at the field level
- Advise and assist WUAs and farmers to assess constraints to women's participation, and formulate plans for greater women involvement in the IMTP, and help WUAs to implement the plans
- Advise and assist DOI and the MOWR (Ministry of Water Resources) to analyze the legal implications of management transfer and to establish the regulatory framework needed to effect such transfers
- Advise and assist WUAs to design and demonstrate crop diversification and income generation models
- Advise and assist WUAs to design and demonstrate on-farm use of low cost appropriate technologies for ground water use, such as treadle pumps, rower pumps, solar pumps, etc

Technical Assistance Deliverables/Contractor Performance Indicators

There have been three sets of Deliverables/Contractor Performance Indicators for the technical assistance team from May 30, 1996 to November 20, 1999

- Deliverables/Contractor Performance Indicators
May 30, 1996 - September 30, 1998
 - 1(a) Phase I subprojects operating under management transfer (i.e. turnover, joint management)
 - 1(b) Phase II subprojects undergoing preparation for management transfer

- 2(a) A knowledgeable and skilled cadre of IMD/DOI staff working on management transfer
 - 2(b) Overseas training program completed
 - 3(a) Effective farmer involvement and decision-making in management transfer physical rehabilitation and improvements
 - 3(b) Recommendations on rehabilitation design and control
 - 4 A refined, effective, and simple M&E system operating at WUAs and IMD/DOI
 - 5 Management transfer strategy guidelines prepared for IMD/DOI's use
 - 6(a) Functional, autonomous WUAs operating in Phase I subprojects
 - 6(b) Functional, autonomous WUAs operating in Phase II subprojects
 - 7(a) Awareness campaign implemented in Phase I subprojects
 - 7(b) Portion of IMTP training program focused exclusively on women and/or regular training program more inclusive of women
 - 8 Strengthened linkages between WUAs and agricultural support services
- Deliverables/Contractor Performance Indicators
October 1, 1998 - September 30, 1999
 - 1 Five TNAs (Training Needs Assessments) on O&M completed
 - 2 Twenty IMD/DOI and Subproject Managers/Officers trained in O&M
 - 3 WUA rules and regulations prepared and workshops conducted in four Phase II subprojects
 - 4 Three water measurement workshops conducted, thirty farmers trained
 - 5 Five APs (Action Plans) prepared and three MOAs (Memoranda of Agreement) signed
 - 6 Twenty-four WUA executives and IMD/DOI staff trained in M&E
 - 7 Twenty WUA members trained in basic irrigation management principles
 - 8 Proven management transfer processes and strategies incorporated into Irrigation Act
 - 9 Pathraya Subproject rehabilitated and transferred to WUA
 - 10 DOI/HMG staff attend one study tour and one seminar/conference
 - 11 Project support for WUA office improvement
 - Deliverables/Contractor Performance Indicators
October 1, 1999 - November 20, 1999
 - 1 Completed Canal Operation Plan of Pathraya Subproject
 - 2 Contract Completion Report

Project Implementation

The Project is implemented by HMG's IMD/DOI central and field-level staff and the Project WUAs with support and assistance from the technical assistance team. IMD/DOI manages and coordinates the Project from the central level, while most of the activities are implemented by IMD/DOI field-level staff and the WUAs.

Project Accomplishments

From May 30, 1996 to November 20, 1999 the Project's progress has been satisfactory. Contractor deliverables and contractor performance indicators have been fulfilled, including *inter alia*:

- The management of the three Phase I subprojects (14,600 ha) has been formally transferred to the WUAs
- WUAs have been formed, registered, and are operating in all eleven IMTP subprojects
- Local farmers have developed a strong sense of personal accomplishment and achievement, leading to active roles in other local, district, and national civic affairs
- WUA-led CMWFs (Canal Management Workforce) have taken over O&M management responsibilities in the three Phase I subprojects
- Physical rehabilitation has been completed in the three Phase I subprojects, and 90 percent completed in a fourth Phase II subproject (Pathraya)
- The eight Phase II subprojects (53,200 ha) are being prepared for future management transfer
- All eleven Phase II WUAs (three of the eight Phase II subprojects have two WUAs) have opened and are operating bank accounts
- Joint system walk-throughs have been completed in the eight Phase II subprojects
- Eight of the eleven Phase II WUAs have prepared APs, and five of the eleven Phase II WUAs have already signed MOAs with IMD/DOI

Executive Summary Table and **Executive Summary Figure** (see following pages) provide a summary of accomplishments focusing on specific success indicators in Phase I and II subprojects.

Level of Effort

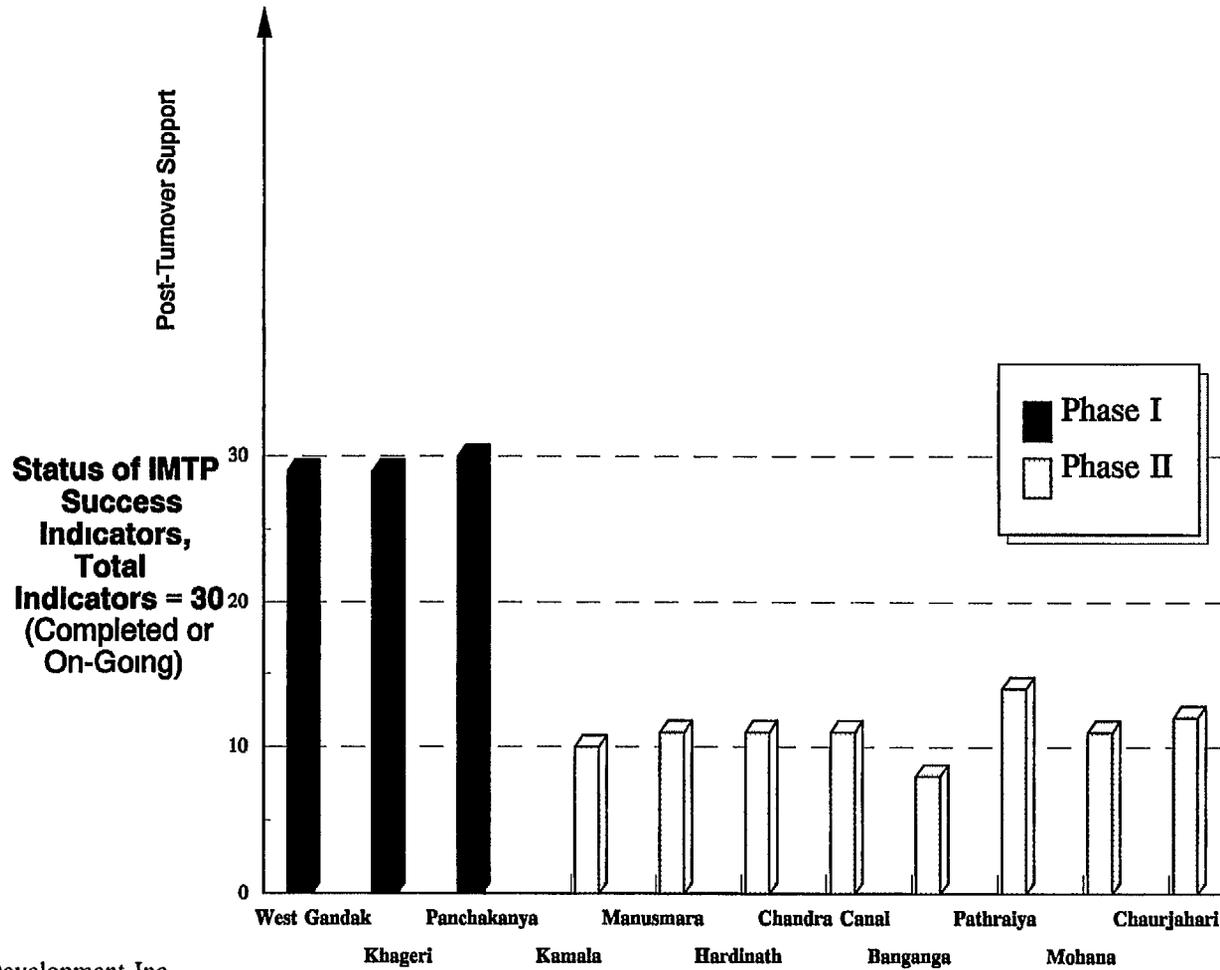
From May 30, 1996 to November 20, 1999 the IMTP technical assistance team provided a total of 29 person-months of expat TA and 167 person-months of local TA.

**EXECUTIVE SUMMARY
TABLE
STATUS OF SUCCESS INDICATORS IN IMTP PHASE I AND II SUBPROJECTS
(November 20 1999)**

Result	Indicators	Phase I Subprojects			Phase II Subprojects							
		West Gandak	Khageri	Panchakanya	Kamala	Manusmara	Hardinath	Chandra Canal	Banganga	Pathraiya	Mohana	Chaurjahari
1 Formal WUA Exists	1.1 Registration Certificate & Renewal Registration	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	1.2 Audit	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	1.3 Elections	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	1.4 Constitution	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	1.5 Physical Office	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	1.6 Staffing and Position	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	1.7 Record Keeping	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	1.8 Rules & Procedures Established	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2 WUA is Operating Canals	2.1 CMWF Exists & Functions	✓	✓	✓								
	2.2 CMWF is Operating Canal	✓	✓	✓								
	2.3 Farmers are Aware of CMWF	✓	✓	✓								
	2.4 WUA Canal Operation Plan Exists/Functions	✓	✓	✓						✓		
	2.5 WUA Water Delivery Records	✓	✓	✓								
	2.6 CMWF Follows Distribution Schedule	✓	✓	✓								
3 WUA is Maintaining Canals	3.1 WUA Conducts Maintenance Needs Assessment	✓	✓	✓								
	3.2 Joint System Walkthrough	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	3.3 Prioritization of Work	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
	3.4 WUA Maintenance Plan Exists	✓	✓	✓						✓		
	3.5 Mechanical Gates are Operational	✓	✓	✓								
	3.6 Canal Capacity Maintained	✓	✓	✓								
	3.7 Maintenance Record Exists	✓	✓	✓								
	3.8 Expenditure of Cash Kind Labor	✓	✓	✓								
	3.9 WUA Canal Inventory	✓	✓	✓								
4 WUA is Mobilizing & Managing Financial Human and Natural Resources	4.1 Membership/Shares Managed	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	4.2 Financial Revenues From Membership/Shares	✓	✓	✓								
	4.3 Human Resources Mobilized	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	4.4 ISF Collected	✓	✓	✓		✓				✓	✓	✓
	4.5 WUA Budget Plan	✓	✓	✓								
	4.6 Expenditures	✓	✓	✓								
	4.7 Labor Contribution for Maintenance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
TOTAL		29	29	30	10	11	11	11	8	14	11	12

✓ Completed or On going Completed are indicators that exist e.g WUA Constitution Office etc On Going are indicators that take place over time e.g WUA Record Keeping

EXECUTIVE SUMMARY
FIGURE
STATUS OF SUCCESS INDICATORS IN IMTP PHASE I AND II SUBPROJECTS
(November 20, 1999)



Lessons Learned from IMTP

The following are the key lessons learned from IMTP

Rehabilitation Processes and Accomplishments

- 1 Linking institutional and physical milestones helps Project implementation
- 2 The innovations introduced in IMTP (Joint System Walk-Through, Subproject Management Committees, AP/MOAs, etc) have contributed positively to the Project
- 3 IMTP's rehabilitation processes take time Don't rush
- 4 Quality of rehabilitation is very important to break the cycle of rehabilitation - decline - rehabilitation - decline

O&M Processes and Accomplishments

- 5 WUAs can perform quality O&M, but they need assistance, particularly after turnover
- 6 Good O&M is linked to strong WUAs
- 7 The WUAs' Canal Management Workforces (CMWFs) has proved to be a workable concept, though "volunteerism" may not sustain O&M over the long-run
- 8 O&M training for WUAs is essential
- 9 The WUAs need to develop realistic O&M budgets and ISF (Irrigation Service Fees) programs

Institutional Activities

- 10 WUA development is an evolutionary process, not a one-time event
- 11 IMTP needs to focus on the development of local institutions as much as it focuses on statistical achievements
- 12 Long-term WUA financial viability and self-sufficiency needs to be stressed
- 13 The WUA formation process seems to be working adequately
- 14 The WUA organizational design and structure in large subprojects is sometimes too cumbersome and complicated
- 15 Involving women in Project activities and benefits will not occur unless Project implementors make an explicit effort to include women

Post Turnover Support

- 16 Post turnover support to IMTP WUAs is far more critical than originally thought

Recommendations for IMTP

The following are the key recommendations for future IMTP activities

Rehabilitation

- 1 Rehabilitation should stress ease of operation for WUAs
- 2 Follow and implement what is written and mutually agreed to in the AP/MOAs
- 3 Continually involve SMCs (Subproject Management Committees) and the WUA in rehabilitation decision-making and implementation Keep them actively informed of progress
- 4 Transparency of Program, Budget, and Expenditures
- 5 Allow WUAs to be paid for work they do beyond their 26 percent "farmers' participation "
- 6 Actively involve women in SMCs and in rehabilitation decision-making
- 7 Rehabilitation and WUA institutional development efforts should be linked and support one another

Operation and Maintenance

- 8 Continue assistance to CMWFs
- 9 Assist WUAs in O&M record-keeping and water measurement

Institutional Strengthening

- 10 The "professionalization" of IMTP WUAs needs to begin
- 11 ISF collections need a better rationale and better training
- 12 Ensure women are involved in all IMTP activities
- 13 Simplify WUA organizational structure

Post-Turnover Support

- 14 Focus more effort and resources in post turnover support

Program Planning and Implementation

- 15 Design and plan IMTP programs in the field
- 16 Focus IMTP planning on targets, goals, outputs, and ends, rather than on means or inputs

Future Development of IMTP

IMTP has introduced a number of important innovations in HMG and rural Nepal, e.g. management transfer (privatization) of large public enterprises, grassroots democracy at the village level, decentralization of decision-making, etc. Perhaps most importantly, the WUAs in the Phase I and II subprojects have made significant strides in taking over the management of the IMTP subprojects. The Project has not only introduced these innovations, but has also achieved some degree of success in implementing and managing these innovations.

The Project, however, needs continued support from HMG, AsDB, and USAID. There are still 2.5 years before Project closure (June 2002). Post-turnover support is required in the three Phase I subprojects, and the WUAs in the eight Phase II subprojects will need assistance as turnover activities progress in the next 2.5 years. Only three of eleven IMTP irrigation systems have been transferred, eight more remain. Key issues in management transfer still need to be addressed including:

- Adequate resource generation at the local level
- Site-specific post-turnover support activities
- Developing proper roles for the WUAs in business enterprises beyond irrigation

It is important that the Project be allowed to succeed by continuing support to irrigation management transfer in Nepal.

1. INTRODUCTION

Chapter One describes the purpose of this Contract Completion Report, Project Objectives, and the physical characteristics of the Project, including Project location and Project size

1.1 Purpose and Structure of the Contract Completion Report

The original technical assistance contract (May 30, 1996) between the United States Agency for International Development/Nepal (USAID/Nepal) and Computer Assisted Development, Inc (CADI) for the Irrigation Management Transfer Project (IMTP) states

The contractor shall submit a final Contract Completion Report within 60 days of the contract completion date (AIDAR 752 7026) The contractor shall budget costs for preparation of this report Fifteen copies of the report are required (Section C, Chapter IX D, USAID/Nepal - CADI Contract)

The original contract also required the contractor to submit an Implementation Plan containing Contractor Performance Indicators (CPIs)

This report (Implementation Plan) will also present the TA (technical assistance) performance indicators, against which the TA success will be measured (Section C, Chapter IX B, USAID/Nepal - CADI Contract)

The TA performance indicators for Phase I of IMTP were developed and formally submitted to and approved by USAID/Nepal in September 1996 as part of the TA Implementation Plan

In 1997, USAID/Nepal changed IMTP's Project Activity Completion Date (PACD) from May 20, 2001 to July 31, 1998 (subsequently extended two months to September 30, 1998) Due to this change in PACD, the contractor was required to submit a revised Implementation Plan The IMTP Revised Implementation Plan was formally submitted to USAID/Nepal in August 1997 The August 1997 Revised Implementation Plan contained slightly different Contractor Performance Indicators These August 1997 IMTP Contractor Performance Indicators guided the TA team through September 1998

In September 1998, USAID/Nepal formally extended the IMTP contract for another twelve months, from October 1, 1998, to September 30, 1999 For this twelve-month extension, USAID/Nepal required the contractor to fulfill nine additional Deliverables (or Contractor Performance Indicators), subsequently expanded to eleven Deliverables

In September 1999, USAID/Nepal gave the IMTP contractor a fifty-day no-cost extension from October 1, 1999 to November 20, 1999. The fifty-day extension states, *inter alia*

CADI will be completing the canal operation plan of the Pathraya Irrigation System by November 10, 1999

Under Section C Chapter IX Section D, the contractor must prepare and submit the final completion report to USAID/N. The report should include recommendations on the essential post turn-over support requirements, new roles of DOI/HMG and WUAs to sustain project achievements, and how to create opportunities for women farmers to fully participate in the benefits of management transfer

From May 1996 to November 1999, therefore, there have been three different sets of Deliverables/Contractor Performance Indicators

- Deliverables/Contractor Performance Indicators from May 30, 1996 (contract signing date) to September 30, 1998
- Deliverables/Contractor Performance Indicators from October 1, 1998 to September 30, 1999
- Deliverables/Contract Performance Indicators from October 1, 1999 to November 20, 1999

The Contractor Completion Report presented here, therefore, meets all the requirements of

- The original IMTP contract (May 30, 1996)
- The IMTP Revised Implementation Plan (August 1997)
- The twelve-month IMTP extension (October 1, 1998 - September 30, 1999)
- The fifty-day IMTP extension (October 1, 1999 - November 20, 1999)

The structure of this Contractor Completion Report will be as follows

Results and Achievements

- | | |
|------------------|--|
| Chapter 2 | Overall Results and Achievements of IMTP (May 30, 1996 - November 20, 1999) |
| Chapter 3 | Results and Achievements of IMTP Deliverables/Contractor Performance Indicators from the August 1997 Revised Implementation Plan (Phase I May 30, 1996 - September 30, 1998) |
| Chapter 4 | Results and Achievements of IMTP Deliverables/Contractor Performance Indicators from the IMTP Twelve-Month Extension (Phase II October 1, 1998 - September 30, 1999) |

Chapter 5 Results and Achievements of IMTP Deliverables/Contractor
Performance Indicators (October 1, 1999 - November 20, 1999)

Analysis and Recommendations on

Chapter 6 Essential Post-Turnover Support Requirements

Chapter 7 New Roles of DOI/HMG and WUAs to Sustain Project Achievements

Chapter 8 Creating Opportunities for Women Farmers to Fully Participate in the
Benefits of Management Transfer

Overall Lessons Learned and Project Recommendations

Chapter 9 Lessons Learned from IMTP

Chapter 10 Recommendations for IMTP

Chapter 11. Conclusion

1 2 IMTP Project Description

IMTP is a collaborative venture between USAID, the Asian Development Bank (AsDB), the Government of Nepal, and Project farmers. The Project will rehabilitate selected government operated irrigation systems, and transfer the management of these systems to Water Users Associations (WUAs). The Asian Development Bank is primarily financing physical rehabilitation of the irrigation systems while USAID/Nepal is providing technical assistance services to the WUAs and to the Irrigation Management Division within the Department of Irrigation (IMD/DOI).

IMTP is divided into two phases. Phase I of the Project (June 1995 - June 1998) is designed to assist the government to transfer the operation and maintenance and/or ownership of three public irrigation schemes (Khageri, Panchakanya, West Gandak) either partially or totally to the WUAs, and to prepare eight additional irrigation systems (Banganga, Chaurjahari, Pathraya, Mohana, Manusmara, Hardinath, Kamala, and Chandra Canal) for future management transfer. Phase II of the Project (June 1998 - June 2002) is designed to assist the government to transfer these eight schemes either totally or partially to the WUAs. The Project, therefore, is designed to assist in transferring eleven irrigation schemes to WUAs.

The Project officially began on June 14, 1995, when the AsDB loan to His Majesty's Government of Nepal (HMG) became effective. The Project will be due for closure on June 20, 2002, though field activities should be completed by December 31, 2001. The Project refers to the eleven IMTP irrigation systems as "subprojects," and the terminology will be used through this report.

USAID contracted with CADI on May 30, 1996 to provide and coordinate the technical assistance services to enhance IMD/DOI's capability to implement the project, to further refine IMD/DOI's management transfer strategies, to strengthen the WUAs so that they can take over full management transfer responsibility, and to assist the WUAs to become self-reliant, self-sustaining business enterprises

Under the contract, CADI is teamed with APTEC Consultancy (P) Ltd , a private Nepalese consulting firm, to provide the technical and managerial expertise to IMD/DOI and WUAs

1 3 Project Goals, Objectives, and General Principles

The Project goals, objectives, and principles, as described by AsDB and USAID/Nepal are presented below

1 3 1 Project Goals and Objectives

The overall Project goals and accompanying objectives focus on irrigation management transfer strategies and processes, capability building of institutions, and actual transfer of eleven subprojects to WUAs Both major donors of IMTP (AsDB, USAID) have similar Project goals and objectives

The loan agreement between AsDB and HMG states

The goal of the project is to assist DOI in improving the O&M of irrigation facilities currently managed by DOI by involving farmer-beneficiaries in their operation and management, thereby complementing ongoing efforts to encourage the private sector's participation in irrigation development, promote, economic growth, and reduce poverty in rural areas

The specific objectives of the Project are (a) to refine and institutionalize within DOI processes and strategies for transferring to WUAs the O&M responsibility for and, if appropriate, legal ownership of such irrigation facilities, and (b) to make such transfers of irrigation facilities to the WUAs in the project area in accordance with their capacity to mobilize local resources

To achieve these objectives, the Project will consist of the following components (a) establishment of sustainable and effective WUAs, and (b) rehabilitation and improvement of irrigation and drainage facilities

AsDB's IMTP Project Administration Memorandum states similar objectives and scope

The project will (i) refine and institutionalize the processes and strategies for transferring O&M and/or ownership of public irrigation schemes to farmers, and (ii) transfer the O&M and/or ownership of 11 public irrigation schemes to farmer-beneficiaries, in accordance with their capacity to mobilize local resources. These objectives will contribute to the Government's goals of improving irrigation system performance, increasing agricultural production and farm incomes, generating employment, and reducing the incidence of poverty and the Government's O&M budgetary requirements.

USAID/Nepal has the same general approach to IMTP's goals and objectives. The CADI-USAID/Nepal contract states:

IMTP is designed to assist HMG/N improve irrigation system efficiency and sustain effective irrigation management practices by democratic WUAs. This will be accomplished through (a) establishment of WUAs, (b) physical system improvement and rehabilitation, (c) active participation of WUAs in decision making for system improvement and rehabilitation, O&M, and enforcing rules and sanctions, (d) establishing functioning water share systems to generate local revenue to enable WUAs to share costs for system improvement and rehabilitation, and to fully finance the routine O&M of the system after management transfer, (e) the transfer of irrigation systems control and management from government to democratically elected WUAs, (f) technical assistance support to WUAs and farmers to promote enterprises that provide collective services to community needs, and technical assistance to the DOI to effectively implement the project.

USAID/Nepal outlines the key objectives of IMTP's technical assistance component as follows:

- Enhance the institutional management system and technical competence of the Irrigation Management Division to develop plans and programs, oversee the implementation and management, and monitor and evaluate Irrigation Management Transfer Project interventions.
- Advise and assist the IMD/DOI to establish viable WUAs in 11 subprojects included under the IMTP.
- Advise and help WUAs to enhance their ability to become functional WUA enterprises which will allow WUA Water Share Systems to be put in place to enable WUAs to generate local resources to share the cost of system rehabilitation, finance O&M costs of systems, and deliver efficient irrigation management services to farmer beneficiaries.

- Advise and assist WUAs and farmers to establish linkages with various public and private, agricultural support service entities at the field level
- Advise and assist WUAs and farmers to assess constraints to women's participation, and formulate plans for greater women involvement in the IMTP, and help WUAs to implement the plans
- Advise and assist DOI and the MOWR to analyze the legal implications of management transfer and to establish the regulatory framework needed to effect such transfers
- Advise and assist WUAs to design and demonstrate crop diversification and income generation models
- Advise and assist WUAs to design and demonstrate on-farm use of low cost appropriate technologies for ground water use, such as treadle pumps, rower pumps, solar pumps, etc

1 3 2 Project General Principles and Concepts

IMTP follows and is guided by a few important general principles and concepts. These are the tenets that guide IMTP implementation.

- **Democracy** WUA leadership is to be elected in free and open elections. Leadership roles for farmers will be developed in areas as small as 50 ha (*upa-tolis*). Grass-roots democracy is an integral part of IMTP.
- **Privatization** IMTP could be called the Irrigation Privatization Project. In essence, the project seeks to privatize significant parts of large public enterprises (DOI irrigation systems), turning over management of these enterprises to local users' groups. The local users' groups then have the authority to manage the irrigation system, but also have the responsibility for paying for the O&M of the subproject.
- **Decentralization** The core of irrigation management transfer is decentralization. Irrigation systems that once were managed by a central bureaucracy will now be managed by local WUAs.
- **Present DOI and WUA Roles versus New DOI and WUA Roles** A major purpose of irrigation management transfer is to change the government's role in irrigation management. Under a management transfer program, irrigation agencies would still be involved with irrigation management and system O&M, but they would take on an advisory and training role, rather than a day-to-day system management role. Many government personnel, particularly at the district level and below, will, therefore, take on these new roles under the management transfer program. Likewise, under irrigation management transfer, the WUA is strengthened to take the place of the government in

day-to-day system management Farmers will now become the new managers of the IMTP irrigation systems The new roles to be played by the WUA and DOI and their delineation of responsibilities will be critical to IMTP How these new government and farmers' roles are managed will affect the outcome of the project

- **IMTP's Physical Improvements will Support Institutional Innovations** The physical improvements and rehabilitation of the irrigation systems have significant implications for both DOI and the WUAs System rehabilitation activities and institutional development activities should support one another, and form the basis of an integrated approach to management transfer, rather than two parallel programs (physical improvements, institutional) within IMTP

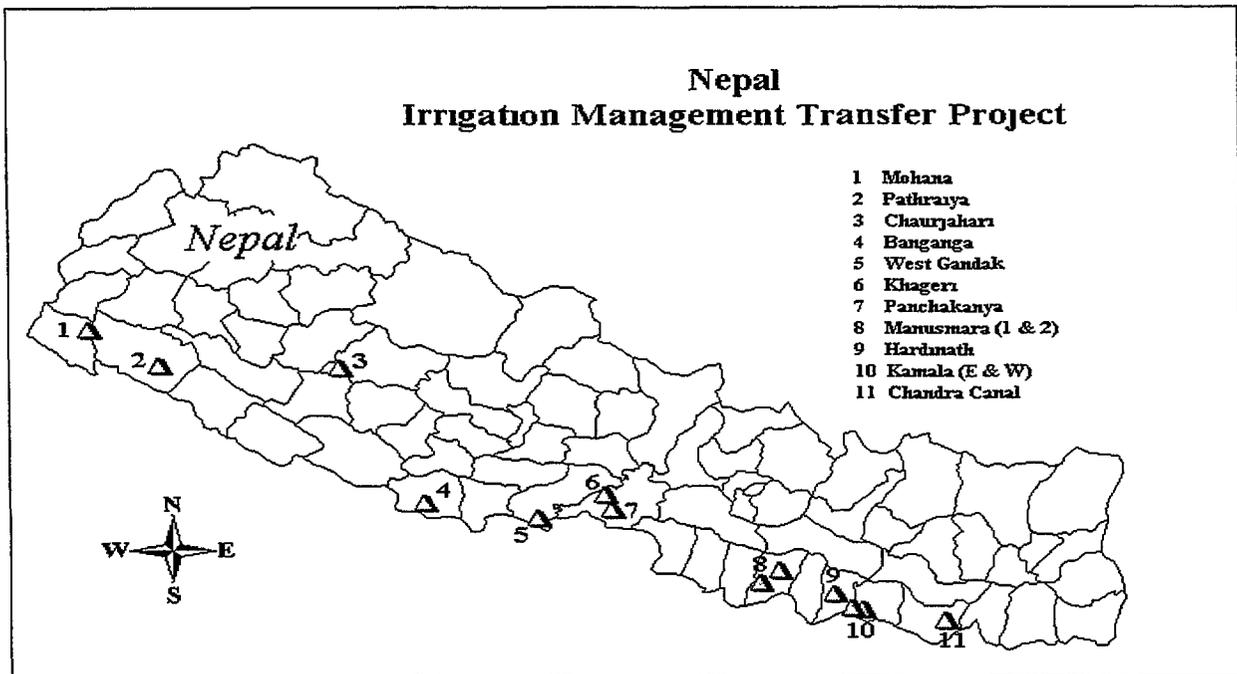
1 4 Physical Characteristics of IMTP

The location and size of the eleven IMTP subprojects affect Project activities and implementation

1 4 1 Project Location

The IMTP subprojects are spread over the length of Nepal, from the far east to the far west (See **Figure 1 1** below) There are IMTP irrigation systems in all of Nepal's five regions Ten of the subprojects are in Terai, and one is in the hills (Chaurjahari) The distance from Mohana (far west) to Chandra Canal (far east) is 700 kilometers

FIGURE 1 1
LOCATION OF IMTP SUBPROJECTS



The subprojects also vary widely in complexity. For example, Panchakanya Subproject has one main canal and nine branch canals. Khageri Subproject has one main canal, eight branch canals, and four minor canals. West Gandak Subproject has one main canal, four branch canals, 18 minor canals, 7 supplementary farm ditches, 24 main offtakes, and 176 main farm ditches.

1 4 2 Project Size

The Gross Command Area of the 11 IMTP Subprojects is over 67,000 hectares. The potential irrigated area is 50,000 hectares, and the estimated actual irrigated area in 1995 was 32,500 hectares. Table 1 1 displays the sizes of Phase I and II IMTP subprojects.

TABLE 1 1
SIZE OF PHASE I AND PHASE II
IRRIGATION SYSTEMS*

Irrigation System	Gross Command Area (ha.)	Potential Irrigated Area (ha.)	Actual Irrigated Area (ha)
Phase I			
West Gandak	10,100	9,000	6,000
Khageri	3,900	3,500	2,100
Panchakanya	600	500	400
SUB TOTAL	14,600	13,000	8,500
Phase II			
Hardinath	2,000	1,200	900
Manusmara	5,200	4,500	4,300
Kamala	25,000	14,000	6,500
Chandra Canal	8,700	7,000	4,200
Banganga	6,100	5,500	4,500
Chaurjahari	600	600	400
Pathraya	2,100	1,800	1,300
Mohana	3,500	2,500	1,900
SUB TOTAL	53,200	37,100	24,000
GRAND TOTAL OF PHASE I & PHASE II	67,800	50,100	32,500

* Asian Development Bank, IMTP Project Administration Memorandum (1995)

2. OVERALL RESULTS AND ACHIEVEMENTS OF IMTP (MAY 30, 1996 - NOVEMBER 20, 1999)

Chapter Two presents a general analysis of IMTP, focusing on results and achievements in five key areas

- Project Results and Achievements in Phase I Subprojects
- Project Results and Achievements in Phase II Subprojects
- Project Institutional and Financial Development
- Improvements in Project O&M and System Performance
- Project Innovations in Rehabilitation Works

This chapter, therefore, presents an integrated picture of the Project, while chapters Three, Four, and Five will focus on formal contractual obligations and results

2.1 IMTP's Results and Achievements in Phase I Subprojects (through November 1999)

During the 3.5 years of USAID/Nepal support to IMTP, Project implementors have discussed what constitutes a "successful" project. Beyond formal contractual obligations, implementors need to know when IMTP is a success, and/or when IMTP is not a success.

To this end, a set of five key result statements has been developed that could be used to define Project success, with accompanying sets of indicators for each of the five results. The five results are simple and comprehensive. At least informally, Project implementors have adopted these five results as definitions of Project "success", i.e. if an individual subproject fulfills all five results, the subproject could be said to be successfully transferred. The five key results and the accompanying indicators are shown below in **Table 2.1**.

**TABLE 2 1
RESULTS AND INDICATORS THAT
DEFINE IMTP SUCCESS**

Key Results	Indicators
1 Formal WUA Exists	1 1 <u>Registration Certificate and Renewal Registration</u> 1 1 1 Audit Completed 1 1 2 Regular Elections Held 1 1 3 WUA Constitution Institutionalized 1 2 <u>Physical Office</u> 1 2 1 Staffing and Positions Filled 1 2 2 Record Keeping On-Going 1 2 3 Rules and Procedures Established
2 WUA is Operating the Canals	2 1 <u>CMWF (Canal Management Workforce) Exists and Functions</u> 2 1 1 CMWF is Operating Canals 2 1 2 Farmers are Aware of CMWF 2 2 <u>Irrigated Area Changes</u> 2 2 1 Wet Season 2 2 2 Dry Season 2 3 <u>WUA Canal Operation Plan Exists and Functions</u> 2 3 1 WUA Water Delivery Records Exist 2 3 2 CMWF Follows Distribution Schedule
3 WUA is Maintaining the Canals	3 1 <u>WUA Conducts Maintenance Needs Assessment</u> 3 1 1 Joint System Walk-Through On-Going 3 1 2 Prioritization of Work On-Going 3 2 <u>WUA Maintenance Plan Exists</u> 3 2 1 Mechanical Gates are Operational 3 2 2 Canal Capacity Maintained 3 3 <u>Maintenance Record Exists</u> 3 3 1 Expenditure of Cash, Labor, Kind 3 3 2 WUA Canal Inventory Exists

Key Results	Indicators
4 WUA is Mobilizing, Collecting, and Managing Human, Natural, and Financial Resources	4 1 <u>Membership/Share System Implemented</u> 4 1 1 Financial Revenues From Membership/Shares 4 1 2 Human Resources Involved 4 2 <u>ISF Collected and Recorded</u> 4 2 1 ISF Collection Efficiency Grows 4 2 2 Gross ISF Collections Sufficient 4 3 <u>WUA Budget Plan Exists</u> 4 3 1 Budget Planning On-Going 4 3 2 Expenditures Recorded 4 4 <u>Labor Contribution for Maintenance</u>
5 Management Transfer Process is Institutionalized	5 1 <u>Preparation of Management Transfer Documents</u> 5 2 <u>Institutionalization of Documents</u> 5 3 <u>Implementation of Documents</u>

For the first 2 5 years of the Project (June 1996 - September 1998), implementors primarily focused on the three Phase I subprojects. As a result of these efforts, the Phase I WUAs have been able to develop and evolve so that by September 1999, they have successfully fulfilled the five results listed in Table 4 1, including full management transfer. Though each subproject has a different level and degree of achievement, all three Phase I WUAs formally exist, are operating and maintaining their canals, and are mobilizing resources to provide at least minimum O&M services to their WUA members.

A crucial finding or result, therefore, is that the three Phase I WUAs are adequately fulfilling the key requirements listed in Table 4 1. Based on this result alone, Phase I of IMTP seems to be progressing satisfactorily.

A complete and detailed breakdown of the status of the three Phase I subprojects using the five key results and accompanying indicators is displayed in **Annex A 1**. Further information regarding WUA activities and WUA training in Phase I subprojects is presented in **Annexes A 2 and A 3**.

2.2 IMTP's Results and Achievements in Phase II Subprojects (Through November 1999)

Extensive work in the Phase II subprojects began in October 1998 (Before that time, the Project was concentrated more in the Phase I subprojects) As **Table 2.2** below shows, the Phase II sites cover an area 260 percent larger than the Phase I sites Additionally, since the Project began to focus more on Phase II subprojects, the Phase I subprojects have not been entirely abandoned While working in the Phase II subprojects, Project personnel have also been continuing work in the Phase I sites In essence, since October 1998 the Project has moved from concentrating on 14,600 ha, to concentrating on 67,800 ha, an increase of 360 percent in area coverage

**TABLE 2.2
IMTP PHASE I AND PHASE II
AREA COVERAGE**

	Area (ha)	Percent Increase in Area Coverage from Phase I (%)
Phase I Subprojects	14,600	---
Phase II Subprojects	53,200	260
TOTAL	67,800	360

Despite this considerable increase in area coverage, the Project has made significant progress in the Phase II subprojects from October 1998 to November 1999

Among the noteworthy accomplishments in Phase II subprojects are

- All eight Phase II subprojects have completed WUA formation and registration
- All eight Phase II subprojects have completed SMC formation
- All eight Phase II subprojects have completed the joint system walk-through
- Seven of the eight Phase II subprojects have completed design and cost estimates for system rehabilitation
- Eight of eleven Phase II WUAs (three Phase II subprojects have two WUAs) have prepared Action Plans (APs)
- Five of the eleven Phase II WUAs have signed Memoranda of Agreement (MOAs) with IMD/DOI

Annexes A 4, A 5, and A 6 provide a more comprehensive breakdown on these accomplishments in the Phase II subprojects

Project personnel have also provided numerous training programs to Phase II WUAs. Training programs completed in Phase II subprojects include

- All eleven Phase II WUAs have received training in (i) Basic Share System Development and Administration, and (ii) Basic Administration and Office Management
- Ten of eleven Phase II WUAs have received orientation on IMTP Implementation Procedures
- Nine of the eleven Phase II WUAs have received training in Construction Management and Quality Control
- Seven of the eleven Phase II WUAs have received training in Basic Water Management

Annex A 7 provides a complete breakdown on WUA training/orientation programs in Phase II subprojects

Though much has been accomplished in the Phase II subprojects in a relatively short period of time, much still remains to be done. For instance, the giant Kamala Subproject covering 25,000 ha (37 percent of total project area) will require extensive technical and institutional assistance before formal management transfer. Working with the two Kamala WUAs will take considerable time and effort.

Work in the Phase II subprojects will use the same five key results to define success that were used in the Phase I subprojects (see Annex A 1). Though it is still relatively early in Phase II activities and premature to judge Phase II performance by examining the five key results, **Annex A 8** presents the approximate status of success indicators for Phase II subprojects.

2.3 Results and Achievements of IMTP's Institutional and Financial Processes (Through September 1999)

In assessing the results and achievements of IMTP, a number of independent observers, researchers, and evaluators have examined IMTP's institutional and financial processes and components. These outside observers have analyzed IMTP's institutional and financial accomplishments using empirical data from the field, and to ensure objectivity, have conducted their examinations apart from normal Project activities.

One of the most comprehensive and recent analyses of IMTP's institutional and financial components was carried out by IMD/DOI's RTDB (Research and Technology Development

Branch), in conjunction with IWMI (International Water Management Institute) Their results were presented in a two-day workshop in Kathmandu October 11-12, 1999

An important RTDB/IWMI study (Upadhyaya, 1999) compared a number of donor and HMG-financed irrigation management transfer projects in Nepal, including IMTP The study focused on documenting different institutional development efforts in different projects, making a comparative assessment of the different institutional processes, and then conducting an impact and performance assessment of the processes and WUAs

One of the key findings of the study is presented in **Table 2 3** on the following page The researchers evaluated the performance of a number of WUAs in Nepal, including the three IMTP Phase I WUAs The results shown in Table 2 3 demonstrate that the three IMTP WUAs were rated by nine different criteria, and received ratings from excellent to poor Of the twenty-seven potential individual ratings (nine for each of the three WUAs), the IMTP WUAs received four "excellents" and fifteen "goods" In other words, seventy percent of the individual ratings for the institutional performance IMTP WUAs were either "excellent" or "good"

The same independent study made some general conclusions about IMTP's institutional development processes and also commented on IMTP's Panchakanya (PIS) WUA

An elaborate institutional arrangement has been instituted by the agency (DOI) in the case of IMTP to facilitate IMT (Irrigation Management Transfer) activities Main reasons rating PIS WUA as highly functional are because of an elaborate process adopted for the WUA formation by IMTP Strength on resource mobilization and the record keeping as well as the canal O&M could be attributed to the adequate training imparted together with the institutional arrangements made in the IMTP to facilitate the management transfer (Upadhyaya, 1999, pp 15-16)

Another RTDB/IWMI study (de Fraiture and Prasad, 1999) examined some key financial processes and accomplishments of IMTP, specifically at IMTP's West Gandak Subproject They examined whether irrigation management transfer leads to a reduction in government O&M expenditures

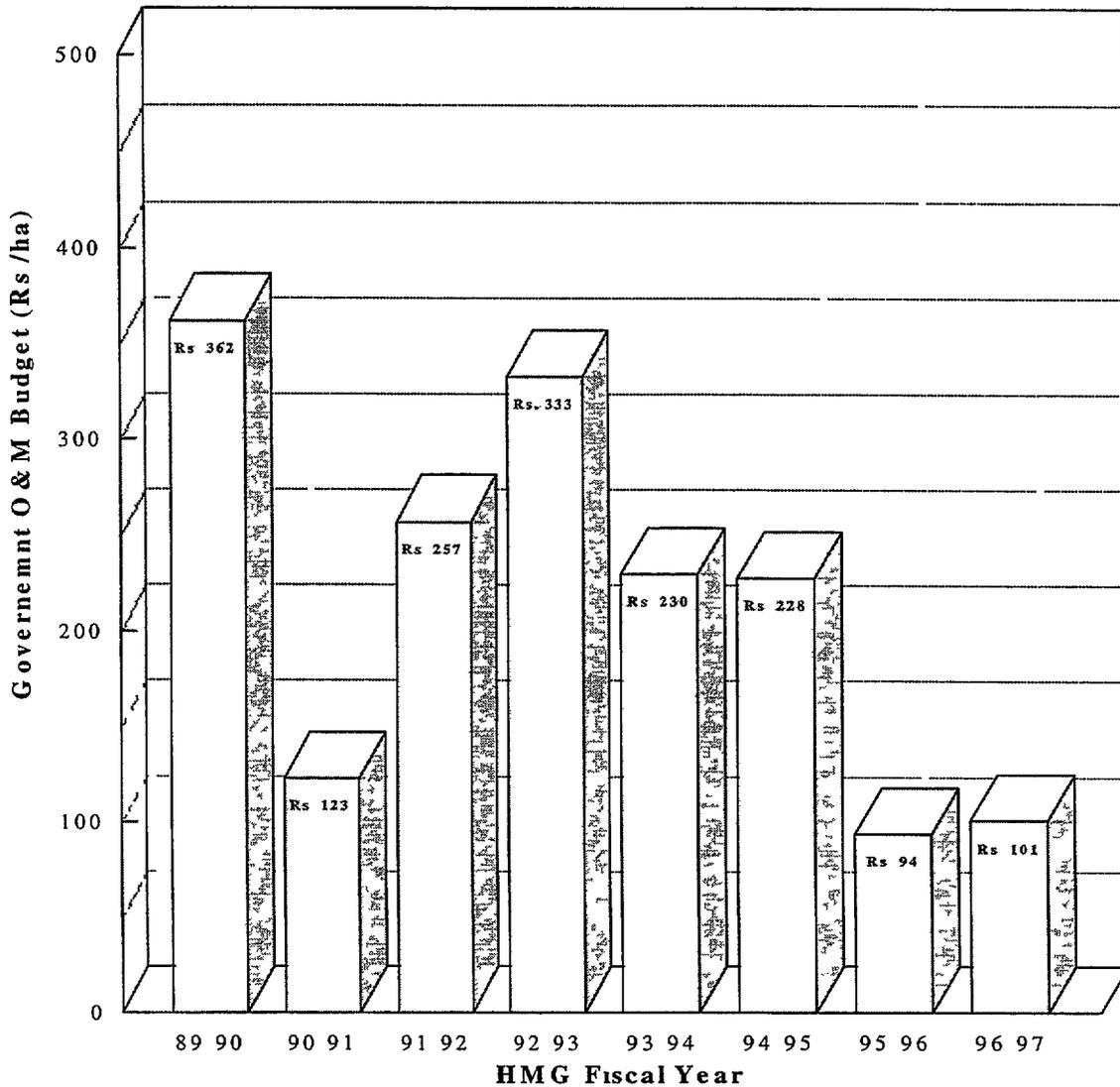
TABLE 2 3
INSTITUTIONAL PERFORMANCE OF PHASE I IMTP WUAs*

Subproject	Effectiveness of Organizational Structure	Checks, Balance and Transparency	Sound Record-Keeping	Effective Conflict Management	Resource Mobilization	System Operation	System Maintenance	Agricultural Performance	System Sustainability
Panchakanya	Excellent	Excellent	Good	Good	Excellent	Good	Excellent	Good	Fair
Khageri	Good	Good	Good	Good	Good	Good	Good	Good	Good
West Gandak	Fair	Fair	Fair	Fair	Poor	Good	Fair	Good	Fair

*Data from RTDB/IWMI study by Upadhyaya (1999)

Figure 2 1 below presents the results of de Fraiture and Prasad's (1999) research They conclude that overall government O&M budget allocations to IMTP's West Gandak have decreased dramatically since irrigation management transfer

FIGURE 2 1
HMG O&M BUDGETS (Rs/ha) FOR WEST GANDAK SUBPROJECT



Data from RTDB/IW MI study by de Fraiture and Prasad (1999)

More recent data compiled by IMTP show similar results for all three IMTP Phase I subprojects. Figures 2 2 and 2 3 below show that both the numbers of DOI staff assigned to the three subprojects, and the Project/HMG budgets, have decreased in the last four years.

**FIGURE 2 2
TOTAL HMG/DOI STAFF REDUCTIONS IN THREE IMTP PHASE I
SUBPROJECTS**

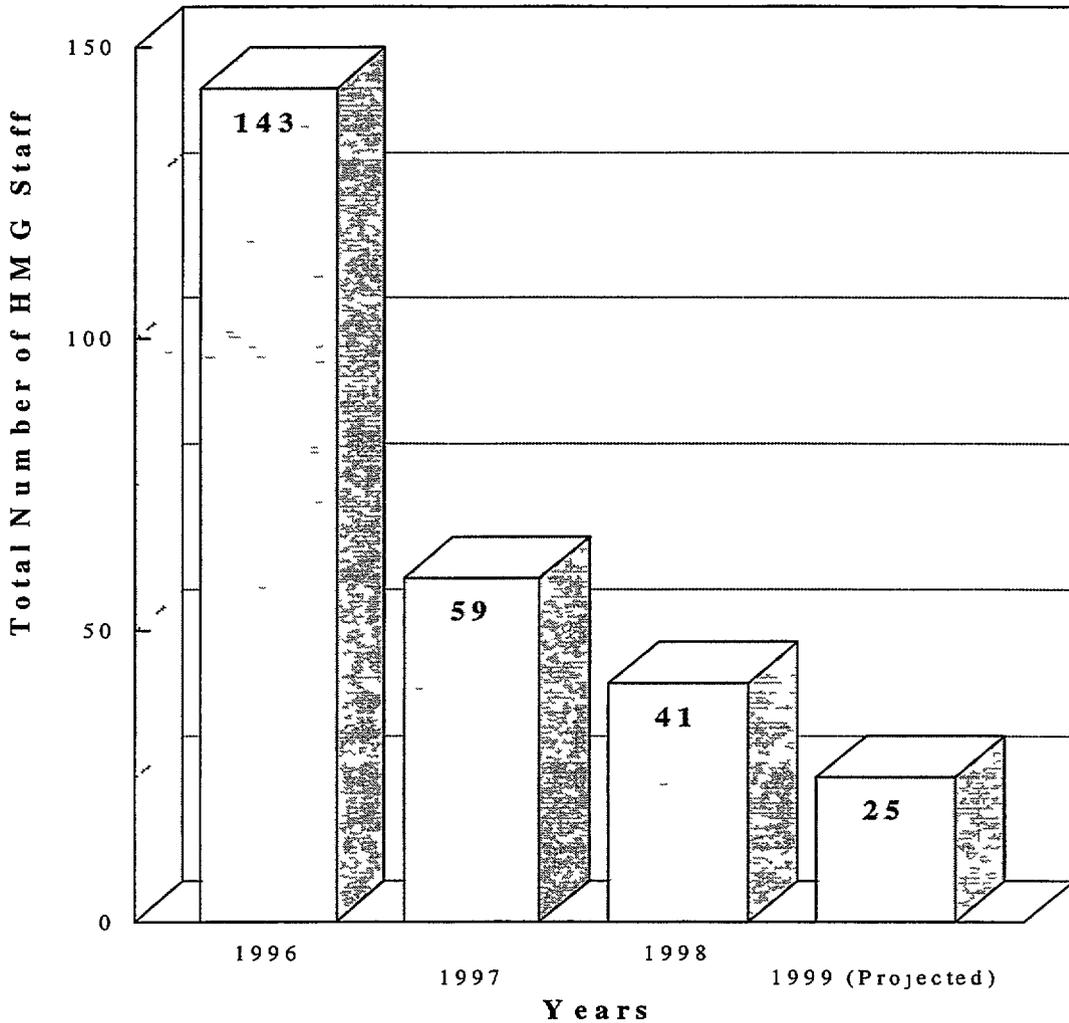
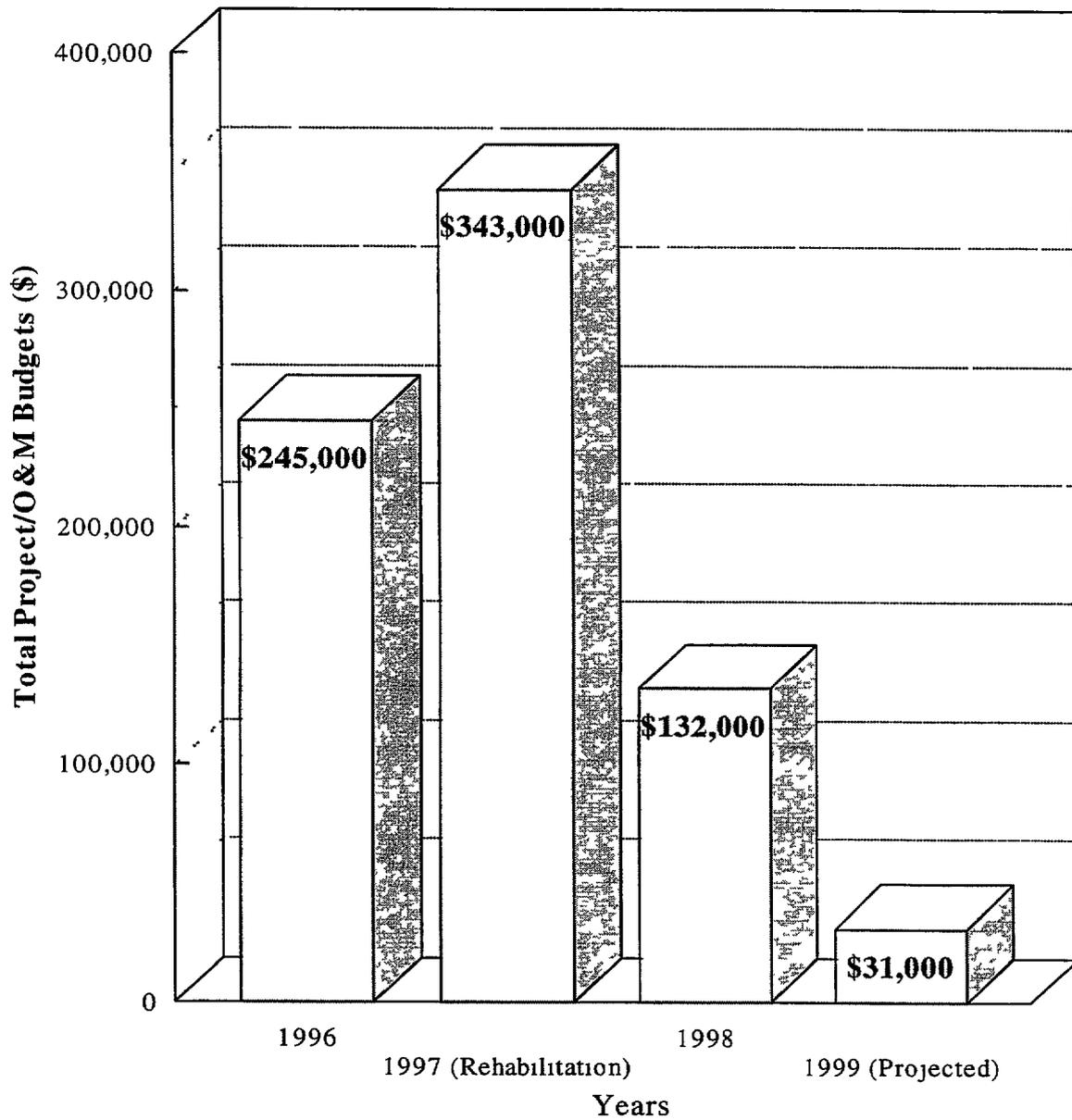


FIGURE 2 3
TOTAL HMG/DOI PROJECT/O&M BUDGET REDUCTIONS FOR THREE IMTP
PHASE I SUBPROJECTS



2.4 Results and Achievements in the O&M Processes of IMTP (through September 1999)

IMTP is based on the premise that the farmers are most concerned about improved system performance, as their livelihood depends on receiving the right amount of water, at the right time, and at the right place. To reach those goals, system O&M must be improved. In IMTP, the WUAs (composed of farmers) will have an incentive to take over the responsibility and authority for system O&M, since then they would control system O&M. If this supposition is correct, O&M should be better in irrigated areas already turned over, compared to irrigated areas that have not been turned over.

De Fraiture and Prasad (1999) in the RTDB/IWMI study examined five components of irrigation O&M in transferred and non-transferred areas

- Farmers' perceptions of adequacy of water
- Farmers' perceptions of timeliness of water
- Farmers' perceptions of equity of water distribution
- Farmers' perceptions of difficulty of arranging water
- Farmers' perceptions of difficulty of receiving assistance from WUA/irrigation staff

The researchers sampled 96 farmers in non-transferred areas, and sampled a total of 156 farmers in transferred areas. The results of their study are presented below in **Table 2.4**

The results displayed in Table 2.4 clearly demonstrate that O&M performance is consistently higher in transferred areas compared to non-transferred areas. The researchers conclude

- 1 The adequacy of irrigation water is better in transferred minors
- 2 The timeliness of irrigation water is better in transferred minors
- 3 The water distribution is fairer in transferred minors than in non-transferred minors
- 4 Farmers of transferred minors face less difficulty in arranging for irrigation water
- 5 Farmers feel it is easier to get assistance of the WUAs in transferred minors as compared to getting the assistance from the agency in non-transferred minors (de Fraiture and Prasad, 1999, pg 9)

TABLE 2 4
FARMERS' PERCEPTIONS OF O&M PERFORMANCE IN TRANSFERRED AND
NON-TRANSFERRED IMTP AREAS*

Farmers' Perceptions	Non-Transferred Area		Transferred Areas			
	Manjhariya (N=96)		Palhi (N=76)		Parsauni (N=80)	
	Dry Season (%)	Wet Season (%)	Dry Season (%)	Wet Season (%)	Dry Season (%)	Wet Season (%)
1 Adequacy of Irrigation						
Adequate Most of the Time	9	12	21	15	21	20
Sometimes Adequate	42	50	61	68	49	44
Never Adequate	49	38	18	17	30	36
2 Timeliness of Water Supply						
Mostly on Time	8	10	24	20	17	20
Sometimes on Time	45	52	54	62	58	50
Never on Time	47	38	22	18	25	30
3 Equity of Water Distribution						
Mostly Fair	9	14	18	14	28	28
Sometimes Fair	31	34	29	39	31	30
Unfair	60	52	53	47	41	42
4 Difficulty of Arranging Water						
Difficult	62	54	44	35	58	47
Sometimes Difficult	30	34	38	47	22	28
Easy	8	12	18	18	26	25
5 Difficulty in Getting Assistance From WUA/Irrigation Staff						
Difficult	54		35		47	
Sometimes Difficult	34		47		28	
Easy	12		18		25	

* Data from RTDB/TWMI study by de Fraiture and Prasad (1999)

2.5 Results and Achievements in the Rehabilitation Processes of IMTP (Through September 1999)

In addition to the institutional/financial and O&M aspects of the Project, physical rehabilitation of IMTP subprojects has been a major component of Project implementation. Another RTDB/IWMI study (Hemchuri, 1999) examined those rehabilitation components in IMTP, and assessed the efficacy of those components in terms of better system management after rehabilitation.

A key element of the management transfer strategy is that physical improvements and rehabilitation can only be carried out after minimum indicators of institutional development have been completed. Although flood damage repairs can be carried out at any time during the management transfer process, other types of physical improvement works, such as emergency maintenance/repairs, must be linked with institutional development accomplishments.

Hemchuri (1999) examined the rehabilitation processes in the IMTP Phase I subprojects, paying particular attention to what was originally envisioned, and what was fulfilled, regarding pre-conditions for rehabilitation, and the actual activities in rehabilitation. As the data in **Table 2.5** below show, what was envisioned regarding pre-conditions and the actual activities, was fulfilled.

**TABLE 2.5
ENVISIONED AND FULFILLED PRE-CONDITIONS AND ACTIVITIES IN IMTP'S
PHASE I REHABILITATION PROGRAM***

Pre-Conditions for Rehabilitation	Status
<ul style="list-style-type: none"> • Emergency Maintenance <ul style="list-style-type: none"> - WUA Formed and Registered - AP Approved • Essential Structural Maintenance <ul style="list-style-type: none"> - Joint System Walk-Through - AP Formally Adopted - WUA Record Keeping Instituted • General System Improvements <ul style="list-style-type: none"> - WUA O&M Plan Prepared - Share Membership Administered - ISF Collection Started 	<ul style="list-style-type: none"> - Fulfilled

Activities in Rehabilitation	Status
• Initial Organization Stage	
- WUA Formation/Registration	- Fulfilled
- SMC Formation	- Fulfilled
• Preparation Stage	
- Joint System Walk-Through	- Fulfilled
- Identification and Prioritization of Rehabilitation Needs	- Fulfilled
- Development of AP	- Fulfilled
- MOA Signing	- Fulfilled
• Implementation Stage	
- Implementation of AP	- Fulfilled
- Construction	- Fulfilled
- Resource Mobilization	- Fulfilled

* Data from RTDB/IWMI study by Hemchuri (1999)

As the data in Table 2 5 indicate, all the rehabilitation pre-conditions and activities were fulfilled by the Project

Hemchuri (1999) also points out some of the main features of the IMTP rehabilitation process

- Setting up conditional ties between rehabilitation and institutional development milestones
- Capacity building of farmers and agency staff in O&M operations
- Intensive farmer participation from need identification to commissioning of rehabilitated works
- Cost sharing between farmers and agency

As a result of the Project following and fulfilling these components of IMTP rehabilitation, Hemchuri (1999) reports the following results

- The process provided time for maturity of the WUAs, increased sense of ownership towards the system, and greater WUA preparedness
- Systems are able to deliver adequate, reliable and equitable water supplies
- Less waterlogged areas and more irrigable command area
- Local irrigation organizations have become more effective in running the system
- Farmers have developed their capabilities in O&M operations by generating and mobilizing their own resources

3. RESULTS AND ACHIEVEMENTS OF THE IMTP DELIVERABLES/CONTRACTOR PERFORMANCE INDICATORS FROM THE AUGUST 1997 REVISED IMPLEMENTATION PLAN (Phase I: May 30, 1996 - September 30, 1998)

Chapter two presented the overall results and achievements of IMTP, examining Project performance not specifically related to formal contractual delegations. Chapters Three, Four, and Five directly address contractual deliverables and performance indicators.

3.1 Major Project Tasks and Related Deliverables/Contractor Performance Indicators

The original contract between USAID/Nepal and the contractor contained eight major project tasks. The August 1997 IMTP Revised Implementation Plan contained the associated Contractor Performance Indicators (CPIs) for each of the eight tasks. The performance indicators were to be completed by September 30, 1998. Chapter 3 details the results and accomplishments of the major tasks and the performance indicators through September 1998.

The tasks and the related performance indicators are listed below in Table 3.1.

TABLE 3.1
IMTP MAJOR PROJECT TASKS AND CONTRACTOR PERFORMANCE INDICATORS

(May 30, 1996 - September 30, 1998)

Major Project Task	Contractor Performance Indicators (To be completed by September 30, 1998)
1 Development and refinement of the strategies and processes of management transfer activities	(a) Phase I subprojects operating under management transfer (i.e. turnover, joint management) (b) Phase II subprojects undergoing preparation for management transfer

Major Project Task	Contractor Performance Indicators (To be completed by September 30, 1998)
<p>2 The training of DOI staff to plan and implement the proven strategy for management transfer</p>	<p>(a) A knowledgeable and skilled cadre of IMD/DOI staff working on management transfer (b) Overseas training program completed</p>
<p>3 Improving the engineering and quality control of system improvement and rehabilitation works</p>	<p>(a) Effective farmer involvement and decision-making in management transfer physical rehabilitation and improvements (b) Recommendations on rehabilitation design and control</p>
<p>4 Establishment of an effective project monitoring and evaluation system</p>	<p>A refined, effective, and simple M&E system operating at WUAs and IMD/DOI</p>
<p>5 Assist DOI to incorporate the proven processes and strategies into DOI's institutional framework</p>	<p>Management transfer strategy guidelines prepared for IMD/DOI/s use</p>
<p>6 Establishing sustainable water users associations</p>	<p>(a) Functional, autonomous WUAs operating in Phase I subprojects (b) Functional, autonomous WUAs operating in Phase II subprojects</p>
<p>7 Encourage the participation of women in WUAs, and in securing benefit from the project</p>	<p>(a) Awareness campaign implemented in Phase I subprojects (b) Portion of IMTP training program focused exclusively on women and/or regular training program more inclusive of women</p>
<p>8 Assist WUAs and the irrigation community to demonstrate and undertake various income generating irrigation and agriculture related activities</p>	<p>Strengthened linkages between WUAs and agricultural support services</p>

3 2 Results and Accomplishments of IMTP's Eight Major Project Tasks and Associated Contractor Performance Indicators (CPIs)

Task 1	Development and Refinement of the strategies and processes of management transfer activities
Performance Indicator 1(a)	Phase I subprojects operating under management transfer (i e , turnover, joint management)

DOI formally turned over the management of two of the Phase I subprojects (West Gandak, Panchakanya) to their WUAs on November 29 and December 13, 1997, respectively. As of September 30, 1998, most of the third Phase I subproject (Khageri) was operating under a joint management agreement between the Khageri WUA and DOI.

In West Gandak, as of September 30, 1998, the WUA had the responsibility for the O&M of the 32 kilometer-long main canal, and all branch canals and farm ditches. (The West Gandak Subproject takes water from the Narayani River, which is controlled by an agreement with India. Therefore, the headworks of West Gandak remain under the management of Nepal's DOI.)

In Panchakanya, the WUA is responsible for the O&M of the entire irrigation system, including headworks, main canals, and branch canals.

In Khageri, approximately 3,400 ha of the 3,900 ha (87 percent) of the Khageri subproject had been turned over to the WUA by September 30, 1998. In September 1998, Khageri was still undergoing physical rehabilitation, and therefore not all areas had been transferred to the WUA. Six of the eight branch canals and two of the four minor canals had been transferred to the WUA. Khageri will be under a joint management program. DOI and the WUA have decided that DOI will continue to manage the main canal, while the WUA manages the O&M of the branch and minor canals.

Table 3 2 below outlines the results and accomplishments of Performance Indicator 1(a). **Annex B 1** presents more comprehensive data on the status of Phase I subprojects as of September 30, 1998.

TABLE 3 2
RESULTS AND ACCOMPLISHMENTS OF CONTRACTOR PERFORMANCE
INDICATOR 1(a)
MANAGEMENT TRANSFER OF PHASE I SUBPROJECTS
(September 30, 1998)

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
<p>1 Development and refinement of the strategies and processes of management transfer activities</p>	<p>(a) Phase I subprojects operating under management transfer (i.e. turnover, joint management)</p>	<p><u>West Gandak Subproject</u></p> <ul style="list-style-type: none"> • 10,100 ha turned over • 32 km main canal turned over • 4 branch canals turned over • 18 large minors turned over • 24 MCs turned over • 7 special farm ditches turned over • 176 MFD turned over <p><u>Khageri Subproject</u></p> <ul style="list-style-type: none"> • 3,400 ha turned over • 6 (of 8) branch canals turned over • 2 (of 4) minor canals turned over • Subproject under joint management of DOI and WUA <p><u>Panchakanya Subproject</u></p> <ul style="list-style-type: none"> • 600 ha turned over • Headworks turned over • 5 km main canal turned over • 9 branch canals turned over • 6 outlets turned over

Task 1	The development and refinement of the strategies and processes of management transfer activities
Performance Indicator 1(b)	Phase II subprojects undergoing preparation for management transfer

Phase II subprojects will be turned over to their respective WUAs in Phase II of IMTP (October 1998 - June 2002). As of September 1998, all Phase II subprojects had undergone preparation for future management transfer. By September 1998, WUAs in seven of the eight Phase II subprojects had been formed and registered. Subproject Management Committees (SMCs) had been formed in Kamala, Chandra Canal, Hardinath, and Banganga Subprojects to oversee rehabilitation works. Joint walk-throughs had been completed in most Phase II subprojects, and preparation of Action Plans/Memorandums of Agreement (AP/MOAs) were on-going.

Additionally, as of September 30, 1998, rehabilitation work had already started in the Phase II Pathraya Subproject. Rehabilitation was started early in Pathraya due to the early completion of institutional development activities, the joint diagnostic walk-through, detailed designs, and the formal signing of the AP/MOA between DOI and the WUA.

Table 3.3 below highlights some of the key accomplishments of management transfer preparation in Phase II subprojects.

A detailed presentation of the status of the Phase II subprojects as of September 1998 is presented in **Annexes B.2 and B.3**.

TABLE 3 3
RESULTS AND ACCOMPLISHMENTS OF CONTRACTOR PERFORMANCE
INDICATOR 1(b)
PREPARATION OF PHASE II SUBPROJECTS FOR MANAGEMENT TRANSFER
(September 30, 1998)

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
<p>1 Development and refinement of the strategies and progress management of the activities</p>	<p>(b) Phase II subprojects undergoing preparation for management transfer</p>	<ul style="list-style-type: none"> • IMTP introductory workshops, and WUA formation and registration completed in all Phase II subprojects • Joint walk-throughs completed in six of eight Phase II subprojects • Workshops on Basic WUA Administration, Office Management, and Share System Development conducted in most Phase II subprojects • Detailed Activities Completed • <u>Pathraya</u> <ul style="list-style-type: none"> - WUA formation, registration, record-keeping - Joint walk through between WUAs, DOI, and TA for AP/MOA - Farmer participation in rehabilitation and canal O&M work - Training on share system, office administration, and construction management/quality control

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
<p>1 Development and refinement of the strategies and progress management of the activities</p>	<p>(b) Phase II subprojects undergoing preparation for management transfer</p>	<ul style="list-style-type: none"> • <u>Mohana</u> <ul style="list-style-type: none"> - WUA formation and registration - WUA involvement in canal operation, maintenance, and repair works - Regular meeting/interactions and joint walk-through between farmers, DOI staff, and TA - Membership distribution and inventory collection on-going • <u>Manusmara</u> <ul style="list-style-type: none"> - Two WUAs formed and registered, and record-keeping - Initial organizational activities and joint walk through completed - Membership collection, share distribution, and farmer inventories • <u>Hardinath</u> <ul style="list-style-type: none"> - Two WUAs formed and registered - SMC formation, membership distribution and farmer inventory on-going - Cost estimate for rehabilitation works started

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
<p>1 Development and refinement of the strategies and progress management of the activities</p>	<p>(b) Phase II subprojects undergoing preparation for management transfer</p>	<ul style="list-style-type: none"> • <u>Chaurjahari</u> <ul style="list-style-type: none"> - WUA formation and registration completed, office establishment and financial record-keeping on-going - Joint walk-through completed, design of works and system inventory - Share certificate and ISF collection started • <u>Kamala</u> <ul style="list-style-type: none"> - Two WUAs formed and registered - Initial organizational activities and joint walk through completed - SMC formation in East main canal • <u>Banganga</u> <ul style="list-style-type: none"> - WUA formation and registration, WUA office being established - Initial organizational activities started - Preparing inventory of irrigation system - Various training programs on basic administration, financial management, leadership development, basic share system development

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
<p>1 Development and refinement of the strategies and progress management of the activities</p>	<p>(b) Phase II subprojects undergoing preparation for management transfer</p>	<ul style="list-style-type: none"> • <u>Chandra Canal</u> <ul style="list-style-type: none"> - WUA formation and registration - Initial organizational activities started - Joint walk-through completed, cost estimate preparation started - WUA office establishment and basic account operation - Record-keeping system - Orientation training to WUA on IMTP implementation procedures started

Task 2	The training of DOI staff to plan and implement the proven strategy for management transfer
Performance Indicator 2(a)	A knowledgeable and skilled cadre of IMD/DOI staff working on management transfer

The Project has trained IMD/DOI staff throughout Nepal to implement IMTP Training programs have been concentrated at both the central level and the field level of the three Phase I subprojects

In general, a short-term test of training program effectiveness is desired changes in participants' attitudes, skills, or knowledge In IMTP, measures of longer-term training quality and effectiveness are provided in earlier and later IMTP contractor performance indicators (e g 1(a), 1(b), 6, etc) **Table 3 4** below displays the width, depth, and breadth of training provided to IMD/DOI staff

TABLE 3 4
RESULTS AND ACCOMPLISHMENTS OF CONTRACTOR PERFORMANCE
INDICATOR 2(a)
TRAINING OF DOI STAFF

(September 30, 1998)

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
2 The training of DOI staff to plan and implement the proven strategy for management transfer	(a) A knowledgeable and skilled cadre of IMD/DOI staff working on management transfer	<p><i>Training Manuals and Reports Prepared</i></p> <p><u>Institutional Issues</u></p> <ul style="list-style-type: none"> • IMTP Principles, Strategies and Status (November 1996) • Introductory Training Manual Developing Farmer-Managed WUAs for Participatory Irrigation Management (March 1997)

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
<p>2 The training of DOI staff to plan and implement the proven strategy for management transfer</p>	<p>(a) A knowledgeable and skilled cadre of IMD/DOI staff working on management transfer</p>	<ul style="list-style-type: none"> • Stage I Training Manual - Steps in Initial WUA Formation and Farmer Participation in the Formation of the WUA Government Structures (March 1997) • Stage II Training Manual - Share System Development and Administration for WUAs (March 1997) • Stage IV Training Manual - Model Financial Record Keeping for WUAs (March 1997) • Stage VII Training Manual - Leadership Issues in WUA and Conflict Management (March 1997) • Training Modalities A Concept, Process, and Procedures for Irrigation Management Transfer (February 1998) • Concepts on Proposed Training Modules for IMTP (March 1998) <p><u>O&M Issues</u></p> <ul style="list-style-type: none"> • Preliminary Report on Water Measurement Work of West Gandak Canal System (January 1997) • Irrigation Management Transfer Consolidated Training Manual (February 1997) • Stage V Training Manual - Canal Operation and Maintenance Training for WUAs and Irrigator Groups (March 1997) • Stage VI Training Manual - Model Water Booking and Water Delivery Record Keeping for WUAs (March 1997) • Canal Operation Plan for Phase I Irrigation Systems (May 1997) • West Gandak Irrigation Subproject Preliminary Draft, Model O&M Training Manual (November 1997)

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
<p>2 The training of DOI staff to plan and implement the proven strategy for management transfer</p>	<p>(a) A knowledgeable and skilled cadre of IMD/DOI staff working on management transfer</p>	<ul style="list-style-type: none"> • Training of Trainers for IMD Staff on Gender Awareness and Increasing Women's Participation in IMTP Activities (November 1997) • On-Farm Water Management Training Manual (February 1998) • Canal Operation and Maintenance Plan (April 1998) • Guidelines for a Pilot Farm Water Management Program (June 1998) • Guidelines for Farm Water Management Policy and Resource Allocation Strategies (June 1998) • Guidelines for Connecting Farm Water Management to Main System Management (June 1998) • Guidelines for Farm Water Management Data Collections (June 1998) • Guidelines for a Pilot Farm Water Management Program (June 1998) • Guidelines for Farm Water Management Policy and Resources Reallocation Strategies (June 1998) • Guidelines for Connecting Farm Water Management to Main System Management (June 1998) • Guidelines for Farm Water Management Data Collection (June 1998) • A Farm Water Management Training Manual (July 1998) • Irrigation O&M Plan for Phase I DOI Staff • Training of Trainers on Project Monitoring and Evaluation • Training of Trainers on ISF Concept and Procedures • Training of Trainers on Improved Irrigation Methods

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
<p>2 The training of DOI staff to plan and implement the proven strategy for management transfer</p>	<p>(a) A knowledgeable and skilled cadre of IMD/DOI staff working on management transfer</p>	<p><u>Physical Rehabilitation Issues</u></p> <ul style="list-style-type: none"> • Stage III Training Manual - Irrigation System Walk-Through (March 1997) • Stage VIII Training Manual - Guidebook for Subproject Managers Completing the Plan of Action and Memorandum of Agreement (March 1997) • Guidelines for WUA Participation in Rehabilitation, Quality Control, and Cost Sharing (July 1997) • Quality Control of the Rehabilitation Works <p><i>Training and Orientations Conducted</i></p> <ul style="list-style-type: none"> • IMTP Principles, Strategies, and Status (November 1996) • Hydraulic Operation of West Gandak (January 1997) • Trainers Training on Canal Operation Plan (January 1997) • Irrigation Management Transfer Consolidated Training Presentation (February 1997) • Issues on Quality Assurance and Control (February 1997) • Hydraulic Structures of West Gandak Irrigation Subproject (February 1997) • Issues on Quality Control and Cost Sharing (July 1997) • WUA Organization and Financial Management (September 1997) • Proposed Design of Mohana Headworks and Model O&M (December 1997) • Problems of Mohana Headworks and Conceptual Design of Headwork (March 1998)

Task No 2 The training of DOI staff to plan and implement the proven strategy for management transfer

Performance Indicator 2(b) Overseas training program completed

The Project called for implementation of an overseas training program, including facilitating and funding two-year graduate degree programs in South and Southeast Asian universities for IMD/DOI staff. Project personnel also arranged for other IMD/DOI staff to participate in short-term international seminars, conferences, and study tours. The Project successfully carried out a number of long-term and short-term overseas training programs, as displayed in **Table 3 5** below.

**TABLE 3 5
RESULTS AND ACCOMPLISHMENTS OF CONTRACTOR PERFORMANCE
INDICATOR 2(b)
OVERSEAS TRAINING PROGRAM**

(September 30, 1998)

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
2 Training of DOI staff to plan and implement the proven strategy for management-transfer	(b) Overseas training program completed	<p><u>Long-Term Training/Study</u></p> <ul style="list-style-type: none"> • M E Degree Program in India 3 participants (On-Going as of 9-30-98) • M E Degree Program in Thailand 1 participant (On-Going as of 9-30-98)

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
<p>2 Training of DOI staff to plan and implement the proven strategy for management-transfer</p>	<p>(b) Overseas training program completed</p>	<p><u>Sort-Term Training/Conferences/Study Tours</u></p> <ul style="list-style-type: none"> • Mexico and USA 3 participants (December 1996) • Mexico and USA 4 participants (June 1997) • Indonesia 12 participants (August 1997) • Italy 2 participants (September 1997) • Indonesia 2 participants (July 1998) • Italy 1 participant (September 1998)

Task 3	Improving the engineering and quality control of system improvement and rehabilitation works
Performance Indicator 3(a)	Effective farmer involvement and decision-making in management transfer physical rehabilitation and improvements

The Project attempts to integrate physical and institutional improvements within the subproject. After a joint system walk-through, DOI and WUA officials develop an Action Plan that outlines the realistic physical improvements needed in the subproject. A Memorandum of Agreement is also prepared, outlining DOI and WUA roles and responsibilities before, during, and after the physical improvements take place.

A key element of the management transfer strategy is that physical improvements and rehabilitation can only be carried out after minimum indicators of institutional development have been completed. Although flood damage repairs can be carried out at any time during the management transfer process, other types of physical improvement works, such as emergency maintenance/repairs, must be linked with institutional development accomplishments, as outlined below in **Table 3 6**.

**TABLE 3 6
PHYSICAL IMPROVEMENTS' LINKAGE WITH INSTITUTIONAL DEVELOPMENT INDICATORS IN IMTP**

Physical Improvements to be Carried Out	Minimum Institutional Development Indicators
• Emergency Maintenance/Repair	• WUA Formation/Registration, Preliminary AP Approved
• Essential Structural Maintenance	• Joint System Walk-Through, Catch-Up Maintenance, AP Formally Adopted, MOA Executed, WUA Record-Keeping Instituted
• General System Improvements	• WUA O&M Plan Prepared, WUA Established Irrigation Service Fees (ISF)

Table 3 7 below outlines some of the results and achievements of effective farmer involvement in IMTP physical rehabilitation. Further information regarding WUA activities in IMTP rehabilitation works is also provided in **Annexes B 1, B 2, and B 3**.

TABLE 3 7
RESULTS AND ACCOMPLISHMENTS OF CONTRACTOR PERFORMANCE
INDICATOR 3(a)
IMPROVING ENGINEERING AND QUALITY CONTROL

(September 30, 1998)

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
3 Improving the engineering and quality control of system improvement and rehabilitation works	(a) Effective farmer involvement and decision making in management transfer physical rehabilitation and improvements	<u>Phase I Subprojects</u> <ul style="list-style-type: none"> • SMCs formed and functioning in all subprojects • AP/MOAs signed and implemented in all subprojects • Farmers contributed 11 to 18 percent of total rehabilitation costs through their labor • Rehabilitation complete in two subprojects (West Gandak, Panchakanya), rehabilitation approximately 85 percent complete in third subproject (Khageri)
		<u>Phase II Subprojects</u> <ul style="list-style-type: none"> • SMC formed in eight of eleven WUAs • Joint system walk-through (DOI, WUAs, TA) complete in nine of eleven WUAs • Joint preparation (DOI and WUA) of cost estimate complete in five of eleven WUAs • AP/MOA signed in one subproject (Pathraiya) • Supervision and quality control by SMC on-going in one subproject (Pathraiya)

Task 3	Improving the engineering and quality control of system improvement and rehabilitation works
Performance Indicator 3(b)	Recommendations on rehabilitation design and quality control

In addition to encouraging effective farmer participation in IMTP physical rehabilitation, the Project also called for sound technical advice and recommendations on design and quality control. **Table 3 8** below outlines some of the rehabilitation technical reports, presentations, and field work that the Project has accomplished

**TABLE 3 8
RESULTS AND ACCOMPLISHMENTS OF CONTRACTOR PERFORMANCE
INDICATOR 3(b)
RECOMMENDATIONS ON REHABILITATION**

(September 30, 1998)

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
3 Improving the engineering and quality control of the system improvement and rehabilitation works	(b) Recommendations on rehabilitation design and quality control	<p><u>Papers and Reports</u></p> <ul style="list-style-type: none"> • Issues on Quality Assurance and Control (February 1997) • Guidelines for WUA Participation in Rehabilitation, Quality Control and Cost Sharing (July 1997) • Mohana System Headworks Rehabilitation Recommendations (November 1997) • Conceptual Design of Mohana Headworks (November 1997) • Revised AP/MOA developed and instituted for Pathraya Subproject (January 1998) • Status of Action Plan Preparation (July 1998) • Status of Action Plan Preparation (September 1998) • Detail Design of Pathraya • Guidelines for Quality Control of Construction Works

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
<p>3 Improving the engineering and quality control of the system improvement and rehabilitation works</p>	<p>(b) Recommendations on rehabilitation design and quality control</p>	<p><u>Presentations and Field Work</u></p> <ul style="list-style-type: none"> • Issues on Quality Assurance and Control (February 1997) • Issues on Quality Control and Cost Sharing (July 1997) • Assisted in design of structures at West Gandak Subproject • Provided suggestions for quality control works in all Phase I subprojects • Calibration of Hydraulic Structures in Phase I subprojects • AP/MOAs signed and implemented in three Phase I subprojects

Task 4 Establishment of an effective project monitoring and evaluation system

Performance Indicator 4 A refined, effective, and simple M&E system operating at WUAs and IMD/DOI

Monitoring and evaluation of Project activities not only provides a useful guide for Project performance, but it also contributes to successful Project management. Both IMD/DOI and WUAs have established IMTP monitoring systems.

IMTP has provided regular semi-annual Benefit and Impact Monitoring Reports to USAID/Nepal since the beginning of the Project. These reports have focused on

- Cropped Area
- Yields
- Cropping Intensity
- Irrigated Area
- Sales
- Number of Households and Farmers Involved
- Number of WUAs Involved
- Area Transferred to WUAs

Further M&E activities have also tracked number of paid members in Phase I WUAs, share system administration and distribution, and ISF collection efficiency.

Table 3.9 below displays some of the key results and accomplishments in establishing an IMTP M&E system. An example of the IMTP monitoring system being implemented is displayed in **Annexes B 1, B 2, and B 3**.

TABLE 3 9
RESULTS AND ACCOMPLISHMENTS OF CONTRACTOR PERFORMANCE
INDICATOR 4
PROJECT MONITORING AND EVALUATION

(September 30, 1998)

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
<p>4 Establishment of an effective project monitoring and evaluation system</p>	<p>A refined, effective, and simple M&E system operating at WUAs and IMD/DOI</p>	<ul style="list-style-type: none"> • Baseline studies of three Phase I subprojects complete • Baseline studies of three Phase II subprojects complete • Data regularly collected and monitored <ul style="list-style-type: none"> - Irrigated Area - Discharge Measurement - Cropping Intensity - Crop Yields - Farm Income - WUA Membership - ISF Collection - Water User Conflicts - Participation of Farmers in O&M Activities - Women's Participation in WUAs and IMTP activities • Semiannual Updated Benefit & Impact Evaluation Reports submitted to USAID/Nepal, Numbers 1 to 4 • Benefit Monitoring & Evaluation Report of Phase I Subprojects (March 1998) • Irrigation Management Transfer in Nepal Status and Achievement of Nepal's IMTP (May 1998) • WUA Membership, Share System Distribution, and ISF Collection Efficiency data for Phase I subprojects (May 1998) (Data from Phase I WUAs' M&E records)

Task 5 Assist DOI to incorporate the proven processes and strategies into DOI's institutional framework

Performance Indicator 5 Management transfer strategy guidelines prepared for IMD/DOI's use

For the long-term sustainability of irrigation management transfer in Nepal, management transfer strategies and guidelines need to be formally and legally institutionalized within HMG/Nepal. A number of important strategy documents have been prepared by the Project, and many of them have become official HMG and DOI policy.

Table 3 10 below outlines some of the most important documents that the Project has prepared and helped to incorporate into DOI's institutional framework.

TABLE 3 10
RESULTS AND ACCOMPLISHMENTS OF CONTRACTOR PERFORMANCE
INDICATOR 5
MANAGEMENT TRANSFER GUIDELINES
(September 30, 1998)

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
<p>5 Assist DOI to incorporate the proven processes and strategies into the DOI's institutional framework</p>	<p>Management transfer strategy guidelines prepared for IMD/DOI's use</p>	<p><u>Preparation of Management Transfer Documents</u></p> <ul style="list-style-type: none"> • AP/MOA (1995) • 1992 Irrigation Policy, First Amendment 1997 (1997) • Revised AP/MOA (December 1997) • Irrigation Pricing Policies and Structures Discussion Paper (December 1997) • Irrigation Management Transfer Guidelines (February 1998) • Agreement between DOI & WUA for Turnover of IMTP Subproject (English & Nepali) (September 1998) • Agreement between DOI & WUA for Joint Management of IMTP Subproject (September 1998)

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
<p>5 Assist DOI to incorporate the proven processes and strategies into the DOI's institutional framework</p>	<p>Management transfer strategy guidelines prepared for IMD/DOI's use</p>	<p><u>Institutionalization of Management Transfer Documents</u></p> <ul style="list-style-type: none"> • AP/MOA, original and revised (approved by IMD/DOI, AsDB, WUAs, 1995, 1996, 1998) • 1992 Irrigation Policy, First Amendment 1997 (Approved by DOI, 1997) • Turnover and Joint Management Document (Approved by DOI and WUAs, 1997) • Irrigation Management Transfer Guidelines (Approved and accepted by DOI, June 1998)

Task 6	Establishing sustainable water users associations
Performance Indicator 6(a)	Functional, autonomous WUAs operating in Phase I subprojects

The establishment of sustainable water users associations is perhaps the most important task in IMTP. As of September 1998, WUAs had been formally established, registered, and trained in all three Phase I subprojects. All Phase I WUAs were functional and were actively participating in institutional/financial, O&M, and rehabilitation activities.

Phase I WUA Institutional and Financial Development

As of September 1998, the Project had assisted the WUAs in the three Phase I subprojects to develop and strengthen their organizations. In West Gandak Subproject, for instance

(1) **Main Committee Replaced by Board of Directors and Executive Committee**

The West Gandak WUA was originally designed with a Main Committee, composed of 35 members. The Main Committee would meet once a month. Because of the size and length of time between committee meetings (i.e. 30 days), quick decision-making was difficult, decisions were sometimes not implemented, and immediate problems could not be resolved. For instance, if people or livestock were damaging canal banks, the WUA had to wait weeks before another Main Committee meeting to resolve the issue.

Therefore, after functioning for two years, the West Gandak WUA members decided that the Main Committee was too cumbersome and needed to be changed. The WUA decided that a streamlined Board of Directors with a five person Executive Committee should replace the Main Committee. The role of the new Board of Directors is primarily policy-making, including developing WUA rules regulations. The five-person Executive Committee (one Executive Manager and four Chiefs) is responsible for day-to-day decision-making and implementing decisions of the Board of Directors. The new Board of Directors and Executive Committee began work in August 1998.

(2) **Amended WUA Constitution (Financial Regulations, Election Procedures, etc.)**

The West Gandak WUA's constitution contains provisions for changes and amendments. Due to experience and changing circumstances, the WUA has (i) added new internal financial regulations to their constitution, (ii) changed the terms of office for the new WUA leadership from two to four year terms, and (iii) changed the WUA structure from a Main Committee to a Board of Directors and Executive

Committee (see above) **Annex B 4** displays the cover page of the new West Gandak WUA constitution

(3) Elections and Election Regulations

The previous WUA constitution stipulated that new WUA elections must take place every two years. The amended constitution changed that to elections every four years. The term of the previous WUA leadership expired in February 1998, and throughout May-July 1998 the WUA held elections for new leaders. By August 1998, the West Gandak WUA had new leaders for a four-year term (See **Annex B 5**)

(4) Various training programs have also been provided to the Phase I WUAs. These programs have included institutional, technical, and financial subjects. **Annex B 6** provides details of the WUA training programs conducted at the Phase I subprojects through September 1998.

Resource Generation WUA Membership and Irrigation Service Fees (ISF)

Key elements of WUA sustainability and successful irrigation management transfer are the WUA's ability to maintain sufficient personnel and generate adequate financial resources. Both system O&M and administrative costs must be covered to ensure the WUA's long-term financial viability.

The three WUAs in the Phase I subprojects have approached the issue of resource generation in slightly different ways. As of September 1998, West Gandak WUA members had to pay a one-time share certificate fee of Rs 20/bigha (Rs 30/ha). Then annual ISF fees were assessed at a rate of Rs 40/bigha/year (Rs 60/ha/year). In the Piparpati/Parsauni section of West Gandak, however, the local WUA had set ISF at Rs 150/bigha/year (Rs 225/ha/year). In the past, the West Gandak WUA tried to implement a Rs 40/bigha/crop ISF, but farmers were reluctant to pay ISF for dry season irrigation. Therefore, the new WUA constitution reflected a new rate of Rs 40/bigha/year, regardless of the number of crops grown.

As of September 1998, the Khageri and Panchakanya WUAs also required a one-time share certificate fee (Khageri Rs 20/bigha, or Rs 30/ha, Panchakanya Rs 60/bigha or Rs 90/ha) and annual ISF fees (Khageri Rs 40/bigha/crop or Rs 60/ha/crop on BC-1, Rs 40/bigha/year or Rs 60/ha/year in all other BCs, Panchakanya Rs 100/bigha/year or Rs 150/ha/year). In Khageri and Panchakanya, however, the WUAs also required a small annual WUA membership fee (Rs 10/member to join, thereafter Rs 1/member/year).

As of September 1998, the three Phase I subprojects had made significant progress in establishing WUA membership and irrigation service fee collections. For WUA membership,

West Gandak had 60.6 percent of subproject farmers as paid members, Khageri 62.1 percent, and Panchakanya 91.2 percent. ISF collection efficiency was 65.7 percent at West Gandak, 65.2 percent at Khageri, and 81.5 percent at Panchakanya. **Annexes B 7 and B 8** provide a detailed time-series breakdown of the fee collections in each of the three Phase I subprojects.

Subproject O&M

As of September 1998, the Project has helped each of the three Phase I WUAs to establish their own O&M processes and procedures.

(1) O&M/Water Management Plans

With help from DOI staff, the WUAs have established practical O&M plans, procedures, and manuals. These are written documents, with simple and appropriate forms, that outline the times and personnel required for specific O&M activities. WUA irrigation schedules are also provided in written form to branch committees. The new WUA O&M Plans were first used in the 1997 rainy season (June-September 1997) and proved to be very successful.

Annexes B 9 to B 11 provide examples of Phase I WUA O&M plans and irrigation schedules.

(2) Canal Management Workforce

One of the most innovative, yet necessary, accomplishments of the Phase I WUAs was the establishment of a Canal Management Workforce. In each of the subprojects, local farmers have been recruited to take over the O&M of their respective irrigation systems. In West Gandak, for instance, the main canal has been divided into four regions. Each of the four regions has a Main Canal Manager, who is responsible for O&M along his stretch of the main canal. The Main Canal Managers are paid Rs 500/month by the WUA. Each of the four regions also has many farmers working as part of Branch/Minor Canal Workforces. A total of 210 farmers are working as a part of the West Gandak WUA Canal Management Workforce. Each of the four regions has also adopted a certain color of hat to wear to identify them as Canal Management Workforce members. Region 1 wears blue hats, Region 2 wears green, Region 3 yellow, and Region 4 red.

Annex B 12 shows the cover page of the Training Manual used for Canal Management Workforces in Phase I subprojects.

Physical Rehabilitation

WUAs were actively involved in rehabilitation planning and implementation in the three Phase I subprojects. During the joint walk-throughs early in the Project, WUA members worked with DOI staff to identify the priority areas for rehabilitation. Based on the results of those joint walk-throughs, DOI staff and WUAs prepared Action Plans that outlined the physical improvement work that needed to be carried out. Cost sharing arrangements were also prepared that described the contributions from government and farmers. Memorandums of Agreement were also prepared outlining roles and responsibilities before, during, and after the rehabilitation process. Both DOI and the WUA leadership signed these formal APs and MOAs.

Based on these agreements and after further discussions with the SMC, the rehabilitation works were carried out. As the WUA was responsible for contributing cash and/or labor up to 26 percent of the rehabilitation cost, WUA members also monitored the quality of construction during rehabilitation.

Table 3 11 below displays some key results and accomplishments involved in establishing functional WUAs in Phase I subprojects.

TABLE 3 11
RESULTS AND ACCOMPLISHMENTS OF CONTRACTOR PERFORMANCE
INDICATOR 6(a)
FUNCTIONAL WUAS IN PHASE I SUBPROJECTS

(September 30, 1998)

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
<p>6 Establishing sustainable water users associations</p>	<p>(a) Functional, autonomous WUAs operating in Phase I subprojects</p>	<p><u>West Gandak WUA</u></p> <ul style="list-style-type: none"> • Main office established • Branch offices being established • Distribution of Share certificates/membership • Collection of ISF • Formation of main and branch committees • Renewed registration and formalization of WUA rules/regulation • Refined O&M manual for West Gandak • Record keeping of financial transactions and water delivery
		<p><u>Khageri WUA</u></p> <ul style="list-style-type: none"> • Main office established • Branch offices established (on-going) • Formation/election of main and branches committee officers • Increased distribution of share membership • General membership drive on-going • Increased collection of ISF • Renewed registration and WUA rules/regulations formalized • Evaluation report of WUA, and record keeping of finances and water delivery

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
6 Establishing sustainable water users associations	(a) Functional, autonomous WUAs operating in Phase I subprojects	<u>Panchakanya WUA</u> <ul style="list-style-type: none">• Main office established• Formation/election of main and branches committee officers• Increased distribution of share membership (increased)• General membership drive ongoing• Increased collection of ISF (increased)• Renewed registration & WUA rules/regulations• Evaluation report of WUA & record keeping of financial transactions & water delivery

Task 6	Establishing sustainable water users associations
Performance Indicator 6(b)	Functional, autonomous WUAs operating in Phase II subprojects

Though the primary focus of IMTP during Phase I was the successful management transfer of three Phase I subprojects (14, 600 ha), another significant component of the Project was preparing for future management transfer in eight Phase II subprojects (53,200 ha)

To successfully achieve Phase II management transfer, WUAs in the eight Phase II subprojects had to be established, strengthened, and trained to take over the O&M responsibility and authority for managing their irrigation systems. While assisting the Phase I WUAs in actual management transfer, the Project also actively worked with all WUAs in the Phase II subprojects, to ensure that they would be adequately prepared to take over system management in Phase II.

Table 3 12 below briefly describes the results and accomplishments of establishing WUAs in Phase II subprojects. A more comprehensive analysis of the status of Phase II WUAs is presented in **Annexes B 2 and B 3**.

**TABLE 3 12
RESULTS AND ACCOMPLISHMENTS OF
CONTRACTOR PERFORMANCE INDICATOR 6(b)
FUNCTIONAL WUAS IN PHASE II SUBPROJECTS**

(September 30, 1998)

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
6 Establishing sustainable water users' associations	(b) Functional, autonomous WUAs operating in Phase II subprojects	<ul style="list-style-type: none">• Formation and registration of WUAs in all Phase II subprojects• WUA main offices being established• Completed joint walk through in seven of eight subprojects• SMC formed in eight of eleven Phase II WUAs• Eight of eleven Phase II WUAs have opened bank accounts• Four of eight Phase II subprojects have developed and accepted formal WUA rules and regulations• Pathraya Subproject has prepared and implemented AP/MOA

Task 7 Encourage the participation of women in WUAs and in securing benefits from the Project

Performance Indicator 7(a) Awareness campaign implemented in Phase I subprojects

The Project has made efforts to ensure that women in the Phase I subprojects not only know about IMTP, but are able to participate in the benefits from the Project. To this end, the Project has first focused on making women in Phase I subprojects aware of the Project. Activities have been launched both in Kathmandu and in the field to ensure that women are involved in the Project activities.

Table 3 13 below outlines some of the activities conducted to increase women's awareness of the Project. **Chapter 8** of this Report (Creating Opportunities for Women Farmers to Fully Participate in the Benefits of Management Transfer) gives a more comprehensive description of gender issues in IMTP.

**TABLE 3 13
RESULTS AND ACCOMPLISHMENTS OF
CONTRACTOR PERFORMANCE INDICATOR 7(a)
IMTP AWARENESS CAMPAIGN TARGETED TO WOMEN**

(September 30, 1998)

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
7 Encourage the participation of women in WUAs and in securing benefits from the project	(a) Awareness campaign implemented in Phase I subprojects	<u>Activities</u> <ul style="list-style-type: none"> • USAID/Washington and IMD/DOI staff met with Phase I women farmers (July 1996) • Strategy developed by IMD/DOI staff to implement awareness campaign (August 1996) • Field trips to Phase I Subprojects by IMD/DOI staff to begin awareness campaign (October 1996) • Provided coordination and liaison between USAID/Nepal's SO3's literacy program and IMTP Phase I women (1996, 1998)

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
7 Encourage the participation of women in WUAs and in securing benefits from the project	(a) Awareness campaign implemented in Phase I subprojects	<ul style="list-style-type: none"> • Developed and implemented institutional development programs for Phase I WUAs ensuring participation of women in WUA activities, e g , WUA meetings, O&M decision-making, etc (1997, 1998) • Ensured all WUA members aware of DOI policy requiring 20 percent of WUA officers to be women • Conducted formal IMTP program for Phase I WUA Leader Women (November 1997) • Contacted HMG and NGO offices working for women development (1996) • Contacted district-level HMG Women Development Offices in Chitwan and Nawalparasi Districts (1996, 1997) <p><u>Reports</u></p> <ul style="list-style-type: none"> • Facilitating Meaningful Participation of Women in Irrigation Management in Nepal (August 1996) • Increasing Women's Participation in IMTP (November 1997) • Linkage Contacts in Chitwan District (November 1997) • Roles and Responsibilities of Women in IMTP for Phase I Subprojects (November 1997)

Task 7	Encourage the participation of women in WUAs and in securing benefits from the project
Performance Indicator 7(b)	A portion of IMTP training program focused exclusively on women and/or regular training program more inclusive of women

The Project has also been active in including women in IMTP training programs. Women have been included as participants in specialized training for women only, and also as participants in training for general WUA members.

Specialized IMTP Training

There have been a number of training programs conducted for women only in the Phase I subprojects. Women in Phase I subprojects have received training in mushroom production, pickle production, and income generation (kitchen gardens), plant production activities, and women's roles, status, and responsibilities in agriculture and irrigation decision-making.

There was also a two-day training of training workshop conducted in Kathmandu for IMD/DOI staff on "Gender Awareness and Increasing Women's Participation in IMTP". Though most of the participants in this training of trainers workshop were male, the discussions focused on activities for women.

General IMTP Training

Women have also been included in institutional and O&M training programs that the Project has provided to WUA members. In West Gandak, for instance, women attended O&M and water management training programs. In MC-3 in West Gandak, for instance, a women member of the WUA is responsible for water distribution along that canal, as she attended the IMTP training in O&M.

Women have also participated in IMTP institutional training programs. For example, from June - August 1998, West Gandak WUA held new elections. Women were elected to high-level positions during this election, and in August - September 1998, the Project provided training to the new WUA officers (including the new women elected) on WUA processes and procedures.

A more complete description of gender issues in IMTP is provided in **Chapter 8**. Additionally, **Table 3 14** below outlines some the key results and accomplishments of gender-sensitive training through September 1998.

TABLE 3 14
RESULTS AND ACCOMPLISHMENTS OF CONTRACTOR PERFORMANCE
INDICATOR 7(b)
TRAINING FOR WOMEN

(September 30, 1998)

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
<p>7 Encourage the participation of women in WUAs and in securing benefits from the project</p>	<p>(b) Portion of IMTP training program focused exclusively on women and/or regular training program more inclusive of women</p>	<p><u>Activities</u></p> <ul style="list-style-type: none"> • Training of Training Workshop on Gender Awareness and Increasing Women's Participation in IMTP (November 1997) • Training in Phase I subprojects on Roles and Responsibilities of Women in IMTP Activities (December 1997) • Mushroom and Pickle Production Training (December 1997) • Plant Protection Training (December 1997) • Income generation training programs in opening bank accounts and financial record-keeping (1997) • Regular IMTP training and orientation programs on WUA institutional development and O&M (1997, 1998) <p><u>Training Manuals</u></p> <ul style="list-style-type: none"> • Gender Awareness and Women's Participation in IMTP Activities (November 1997) • Leadership and Gender Awareness in IMTP (January 1998)

Task 8	Assist WUAs and the irrigation community to demonstrate and undertake various income generating irrigation and agriculture related activities
Performance Indicator 8	Strengthened linkages between WUAs and agricultural support services

The Project has made an effort to include improved agricultural practices in the package of technologies offered to the IMTP WUAs. Numerous meetings and orientations between district ADO (Agricultural Development Office) staff and IMTP WUAs have been held, and agricultural field demonstrations have also been employed. For instance, in the MC-12 canal in West Gandak, HMG's SPIN program has been launched in an effort to improve local agricultural practices.

The most comprehensive effort to strengthen the linkages between IMTP WUAs and agricultural support services took place from December 1997 to March 1998. During that time, Project personnel visited ten of the eleven IMTP subprojects and met with WUAs, local district ADO staff, and local DOI officials. Tentative plans were developed for long-term interactions between WUAs, ADO staff, and irrigation officials. These plans were formalized in February 1998 during a two-day workshop in Rampur, Chitwan, attended by IMTP WUAs, ADO officials from all IMTP districts, local irrigation officials, and IMD/DOI staff from Kathmandu. At this workshop, plans were formalized to strengthen the linkages between farmers' groups and agricultural support services.

Table 3 15 below shows some of the key results and accomplishments regarding linkages between WUAs and agricultural support services.

**TABLE 3 15
RESULTS AND ACCOMPLISHMENTS OF
CONTRACTOR PERFORMANCE INDICATOR 8
STRENGTHENED AGRICULTURAL LINKAGES**

(September 30, 1998)

Major Project Task	Contractor Performance Indicator	Results and Accomplishments
<p>8 Assist WUAs and the irrigation community to demonstrate and undertake various income generating irrigation and agriculture related activities</p>	<p>Strengthened linkages between WUAs and agricultural support services</p>	<ul style="list-style-type: none"> • Regular, periodic meetings and interactions between WUAs, district ADO personnel, and local DOI staff in IMTP subprojects • SPIN program launched in West Gandak Subproject • IMTP WUAs involved in some cooperative activities, e g , selling of seeds, fertilizer, etc • Orientation of IMTP Activities and Linking Line Agencies to Accelerate Capability Building Process on WUAs (March 1998) • Concept and Modalities of Capacity Building Process and Joint Implementation Planning Strategies Towards Agriculture and Accelerating Irrigation Management Transfer (March 1998)

4. RESULTS AND ACHIEVEMENTS OF THE DELIVERABLES/CONTRACTOR PERFORMANCE INDICATORS FROM THE IMTP TWELVE-MONTH EXTENSION (Phase II: October 1, 1998 - September 30, 1999)

In September 1998, USAID/Nepal extended the Project for twelve months, from October 1, 1998 to September 30, 1999 Chapter Four describes the results and achievements of this extension

4.1 IMTP Twelve-Month Extension (October 1998 - September 1999)

The USAID/Nepal calendar for IMTP and the HMG/AsDB calendar for IMTP differ slightly From the USAID/Nepal point of view, Phase I of IMTP ended on September 30, 1998 This roughly corresponds with IMD/DOI and AsDB's Project calendar, which considered June 1998 as the completion of IMTP Phase I activities USAID/Nepal's 12-month extension of IMTP, therefore, roughly covers the first year of Phase II implementation activities Because the extension was for only one year, relatively short-term Deliverables/Contractor Performance Indicators were developed for the Project, rather than the more comprehensive and long-term performance indicators developed for Phase I of the Project

Annexes C 1 to C 6 outline the key accomplishments and present status (September 1999) of the IMTP subprojects

Table 4.1 below displays the 11 Deliverables/Contractor Performance Indicators developed for IMTP for the twelve-month extension from October 1998 to September 1999

**TABLE 4 1
DELIVERABLES/CONTRACTOR PERFORMANCE INDICATORS
FOR THE IMTP TWELVE-MONTH PHASE II EXTENSION**

(October 1, 1998 - September 30, 1999)

IMTP Phase II Contractor Performance Indicators	
1	Five TNAs on O&M completed
2	Twenty IMD/DOI and Subproject Managers/Officers trained in O&M
3	WUA rules and regulations prepared and workshops conducted in four Phase II subprojects
4	Three Water Measurement Workshops conducted, thirty farmers trained
5	Five APs prepared and three MOAs signed
6	Twenty-four WUA executives and IMD/DOI staff trained in M&E
7	Twenty WUA members trained in basic irrigation management principles
8	Proven management transfer processes and strategies incorporated into Irrigation Act
9	Pathrayya Subproject rehabilitated and transferred to WUA
10	DOI/HMG staff attend one study tour and one seminar/conference
11	Project support for WUA office improvement

The remainder of this chapter will detail the results and accomplishments of the Project in fulfilling these performance indicators

4.2 Results and Accomplishments of the Eleven IMTP Deliverables/Contractor Performance Indicators (October 1, 1998 - September 30, 1999)

Performance Indicator 1 Five TNAs (Training Needs Assessment) on O&M completed

During the twelve-month Phase II extension, Project personnel examined the current O&M practices in seven of the eight Phase II subprojects. This included working closely with central and local IMD/DOI staff, and involving local WUA members in the O&M analyses. Cutthroat flumes were used to measure water flow in many of the Phase II subprojects, and extensive interviews were conducted with farmers about their operating procedures and maintenance schedules.

As a result of these studies in the field, the Project was able to develop simple and straightforward TNAs for five IMTP Phase II subprojects. As a result of these TNAs, O&M guidelines and training manuals have already been developed.

Table 4.2 below outlines the O&M TNA activities undertaken by Project personnel.

**TABLE 4.2
RESULTS AND ACCOMPLISHMENTS OF
CONTRACTOR PERFORMANCE INDICATOR 1
O&M TNAs**

(September 30, 1999)

Contract Performance Indicator	Results and Accomplishments
1 Five TNAs on O&M completed	<ul style="list-style-type: none"> • TNA studies and observations conducted in Kamala, Chandra Canal, Hardinath, Manusmara, and Pathraya Subprojects (April - May 1999) • Guidelines and training manuals on (i) WUA Canal Operation Plans and (ii) Canal Maintenance Plans prepared and ready for distribution

Performance Indicator 2 Twenty IMD/DOI and Subproject Managers/Officers trained in O&M

In addition to the five O&M TNAs mentioned in Performance Indicator 1, the Project also completed a number of O&M training programs for IMD/DOI staff. Since many of the Phase II irrigation systems are very large, joint management programs will become more evident in Phase II of the Project, as opposed to complete turnover, which was the norm in Phase I. Under joint management, IMD/DOI staff will still play important roles in system O&M. With rehabilitation soon to start in Phase II subprojects, it is crucial for central and field-level DOI staff to refine their skills in properly operating and maintaining the soon-to-be renovated irrigation systems.

From October 1998 to September 1999 the Project trained a number of DOI staff in O&M. The DOI staff included Subproject Managers, Assistant Engineers, and Overseers. All O&M training programs took place in individual subprojects, to take into consideration the unique hydraulic and environmental conditions prevailing in each subproject.

Table 4.3 below details the accomplishments in O&M training for IMD/DOI staff.

TABLE 4.3
RESULTS AND ACCOMPLISHMENTS OF
CONTRACTOR PERFORMANCE INDICATOR 2
O&M TRAINING FOR IMD/DOI STAFF

(September 30, 1999)

Contract Performance Indicator	Results and Accomplishments
2 Twenty IMD/DOI and Subproject Manager/Officers trained in O&M	<ul style="list-style-type: none"> • Six DOI officials trained in Kamala Subproject (February 1999) • Seven DOI officials trained in Manusmara Subproject (April 1999) • Seven DOI officials (one Subproject Manager, one Assistant Engineer, five Overseers) trained in Chandra Canal (June 1999)

Performance Indicator 3 WUA Rules and Regulations prepared and workshops conducted in four Phase II subprojects

One of the first requirements of IMTP is to assist the WUAs to develop rules and regulations that guide the WUAs' management decisions. The Project has made establishing WUA rules and regulations one of the key elements of the internal institutional processes of the WUAs. Before the rules and regulations are formalized, extensive discussions are held with the WUA, to listen to suggestions from the farmers, and to ensure that the rules and regulations are known and accepted by all.

Annex C 5 and Table 4 4 below outline the status of WUA rules and regulations within the Phase II WUAs

TABLE 4 4
RESULTS AND ACCOMPLISHMENTS OF
CONTRACTOR PERFORMANCE INDICATOR 3
WUA RULES AND REGULATIONS ESTABLISHED

(September 30, 1999)

Contract Performance Indicator	Results and Accomplishments
3 WUA Rules and Regulations prepared and workshops conducted in Four Phase II Subprojects	<ul style="list-style-type: none"> • WUA Rules and Regulations prepared and discussed with WUAs in Kamala and Chandra Canal Subprojects (April 1999) • WUA Rules and Regulations prepared and discussed with WUAs in Hardinath, Mohana, and Pathraya Subprojects (August 1999)

Performance Indicator 4 Three Water Measurement Workshops conducted, thirty farmers trained

When the WUAs take over the management of an irrigation system, one of their first tasks is to manage water allocation and distribution. This can only be done if the WUA knows how to accurately measure the water flowing in the canals.

In the last twelve months, the Project has conducted a number of water measurement workshops for Phase II WUAs, and a number of WUA members have been trained in water measurement. Annex C 6 shows where the water measurement workshops have been conducted, and Table 4 5 below provides details of the workshops.

TABLE 4 5
RESULTS AND ACCOMPLISHMENTS OF
CONTRACTOR PERFORMANCE INDICATOR 4
WATER MEASUREMENT WORKSHOPS CONDUCTED AND FARMERS TRAINED
(September 30, 1999)

Contract Performance Indicator	Results and Accomplishments
4 Three Water Measurement Workshops conducted, thirty farmers trained	<ul style="list-style-type: none">• Hardinath - 11 WUA executives trained (February 1999)• Manusmara I - 32 WUA executives including WUA chairman and WUA secretary trained (April 1999)• Manusmara II - 26 WUA executives trained (April 1999)• Pathraya - 12 WUA executives trained (May 1999)

Performance Indicator 5 Five APs prepared and three MOAs signed

IMTP ensures farmer involvement in the rehabilitation activities by requiring the WUAs to help prepare and then sign the AP/MOAs before construction begins. The preparation and signing of these documents, therefore, is of critical importance to the success of the project.

The Project has worked extensively with the Phase II WUAs, SMCs, and local DOI officials to ensure that the AP/MOAs were realistic and accurate. Annexes C 4 to C 5 show the present status of the AP/MOAs in Phase II subprojects. Table 4 6 below shows the details of AP preparation and MOA signings in Phase II subprojects.

**TABLE 4 6
RESULTS AND ACCOMPLISHMENTS OF
CONTRACTOR PERFORMANCE INDICATOR 5
AP/MOAs**

(September 30, 1999)

Contract Performance Indicator	Results and Accomplishments
<p>5 Five APs prepared and three MOAs signed</p>	<ul style="list-style-type: none"> • APs prepared and submitted to IMD/DOI <ul style="list-style-type: none"> - Hardinath (April 1999) - Chandra Canal (March 1999) - Mohana (June 1999) - Manusmara I (June/July 1999) - Banganga (July 1999) • MOAs signed <ul style="list-style-type: none"> - Hardinath (July 1999) - Manusmara I (September 1999) - Mohana (September 1999)

Performance Indicator 6 Twenty-four WUA executives and IMD/DOI staff trained in M&E

Monitoring and evaluation systems are an integral part of both WUA and IMD/DOI management systems. The monitoring not only provides important information regarding Project impacts and benefits, but the data also become a critical part of Project management. "Monitoring for Project management", therefore, is just as important, if not more important, than monitoring for Project performance, impact, and benefits.

Annex C is an example of WUA and IMD/DOI Project monitoring.

Table 4.7 below outlines the key results and accomplishments of training WUA and IMD/DOI staff in M&E.

TABLE 4.7
RESULTS AND ACCOMPLISHMENTS OF
CONTRACTOR PERFORMANCE INDICATOR 6
M&E TRAINING FOR WUA AND IMD/DOI PERSONNEL

(September 30, 1999)

Contract Performance Indicator	Results and Accomplishments
<p>6 Twenty-four WUA executives and IMD/DOI staff trained in M&E</p>	<ul style="list-style-type: none"> • <u>West Gandak</u> <ul style="list-style-type: none"> - Fifteen WUA members and one DOI staff trained (June 1998) • <u>Khageri</u> <ul style="list-style-type: none"> - Forty WUA members and one DOI staff trained (June 1998) • <u>Panchakanya</u> <ul style="list-style-type: none"> - Four WUA members and the DOI staff trained (June 1998)

Performance Indicator 7	Twenty WUA members trained in basic irrigation management principles
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As the WUAs take over the responsibility and authority of managing the IMTP irrigation systems, they will need to know basic irrigation management principles. Although some of these principles are technical in nature (e.g. water measurement, water distribution schedules, etc.), other responsibilities will be more management-oriented (e.g. staff required for canal O&M, office administration, etc.). The Project has made a concentrated effort to train WUA members in basic irrigation management principles, and will continue to do so as the Project continues.

Table 4.8 below shows the details of irrigation management training through September 30, 1999.

TABLE 4.8
RESULTS AND ACCOMPLISHMENTS OF
CONTRACTOR PERFORMANCE INDICATOR 7
IRRIGATION MANAGEMENT TRAINING FOR WUAS

(September 30, 1999)

Contract Performance Indicator	Results and Accomplishments
7 Twenty WUA members trained in basic irrigation management principles	<ul style="list-style-type: none"> • <u>Hardinath</u> <ul style="list-style-type: none"> - Forty WUA executives, chairmen, vice-chairmen, and WUA members trained (February 1999) • <u>Pathraya</u> <ul style="list-style-type: none"> - Twenty-one WUA executives trained (May 1999)

Performance Indicator 8 Proven management transfer processes and strategies incorporated into Irrigation Act

For long-term sustainability of irrigation management transfer in Nepal, it is crucial that the strategies, processes, and procedures be institutionalized and formalized within HMG/N. One of the most important pieces of that institutionalization process is Nepal's Irrigation Regulation and Irrigation Act (DOI's official Irrigation Policy already endorses management transfer). The Project has actively worked with IMD/DOI staff to ensure that adequate management transfer regulations are developed and incorporated into Nepal's Irrigation Act.

Table 4.9 below details the efforts made by the Project to institutionalize irrigation management transfer into Nepal's Irrigation Regulations.

TABLE 4.9
RESULTS AND ACCOMPLISHMENTS OF
CONTRACTOR PERFORMANCE INDICATOR 8
MANAGEMENT TRANSFER INSTITUTIONALIZED WITHIN HMG/N

(September 30, 1999)

Contract Performance Indicator	Results and Accomplishments
8 Proven management transfer processes and strategies incorporated into Irrigation Act	<ul style="list-style-type: none"> • Draft management transfer processes and strategies for Nepal's Irrigation Regulations submitted to IMD/DOI (December 1998) • Project sponsored HMG/N seminar on Management Transfer Regulations for MOF, MOWR, and DOI officials on December 27, 1998

Performance Indicator 9 Pathraya Subproject rehabilitated and transferred to WUA

Physical rehabilitation and institutional development of IMTP's Pathraya Subproject in Nepal's Far Western Region has progressed steadily and rapidly from October 1998 to September 1999. As of September 30, 1999, approximately 80 to 90 percent of the rehabilitation works have been completed, and the Pathraya WUA is prepared to take over O&M management responsibilities.

Annexes C 3 to C 6 display the rapid progress that Pathraya Subproject has made through September 30, 1999. **Table 4 10** below shows the details and status of rehabilitation and management transfer at Pathraya.

TABLE 4 10
RESULTS AND ACCOMPLISHMENTS OF
CONTRACTOR PERFORMANCE INDICATOR 9
PATHRAYA SUBPROJECT REHABILITATED AND TRANSFERRED TO WUA
(September 30, 1999)

Contract Performance Indicator	Results and Accomplishments
9 Pathraya Subproject rehabilitated and transferred to WUA	<ul style="list-style-type: none">• Rehabilitation 80-90 percent complete. Final rehabilitation halted for rainy season 1999. Will begin again in November 1999.• Draft turnover document prepared and presented to Pathraya Subproject Manager (July 1999).

Performance Indicator 10 DOI/HMG staff attend one study tour and one seminar/conference

IMTP encourages IMD/DOI staff to participate in domestic and international study tours and conferences. Exposure to outside ideas and practices will assist DOI/HMG staff to implement IMTP more effectively and efficiently.

Table 4 11 below outlines some of the study tours and conferences attended by DOI/HMG staff from October 1998 to September 1999.

**TABLE 4 11
RESULTS AND ACCOMPLISHMENTS OF
CONTRACTOR PERFORMANCE INDICATOR 10
IMTP STUDY TOURS AND CONFERENCES**

(September 30, 1999)

Contract Performance Indicator	Results and Accomplishments
10 DOI/HMG staff attend one study Tour and one seminar/conference	<ul style="list-style-type: none"> • Forty DOI Officials attended and participated in INPIM Seminar in Rampur, Chitwan (November 10-14, 1998) • One DOI staff attended international dam safety conference in India (November 1998) • Four IMD/DOI Officials attended and participated in ICID Seminar in Spain (September 9-25, 1999)

Performance Indicator 11 Project support for WUA office improvement

A key element of IMTP is assistance for the WUAs to improve their offices, including helping the WUAs purchase basic office furniture. If the WUAs contribute 26 percent of the cost of the office improvements (in the form of labor, land, painting, etc.), the Project will supply the additional 74 percent of the cost of office improvements.

Table 4 12 below shows the efforts made by the Project to provide support for WUA office improvement.

TABLE 4 12
RESULTS AND ACCOMPLISHMENTS OF
CONTRACTOR PERFORMANCE INDICATOR 11
SUPPORT FOR WUA OFFICE IMPROVEMENT

(September 30, 1999)

Contract Performance Indicator	Results and Accomplishments
11 Project support for WUA office improvement	<ul style="list-style-type: none">• <u>West Gandak</u><ul style="list-style-type: none">- Office furniture delivered (January 1999)• <u>Chandra Canal, Mohana, Hardinath, and Pathraya</u><ul style="list-style-type: none">- WUA offices established (March - June 1999)• <u>Khageri (BC-4, Minor 2, Minor 3)</u><ul style="list-style-type: none">- Offices improved (April - May 1999)

4.3 Full Turnover of Phase I Khageri Subproject

Though not a specific Deliverable/Contractor Performance Indicator for the twelve-month extension, the full turnover of the Khageri Subproject also took place during this twelve-month extension. After rehabilitation was completed in the first half of 1999, two branch canals and two minor canals (approximately 500 ha) were turned over to the Khageri WUA between April 1999 and August 1999. As mentioned previously, Khageri Subproject will be jointly managed by IMD/DOI and the Khageri WUA.

5. RESULTS AND ACHIEVEMENTS OF IMTP DELIVERABLES/CONTRACTOR PERFORMANCE INDICATORS (October 1, 1999 - November 20, 1999).

After the twelve-month extension (October 1998 - September 1999) described in Chapter Four, USAID/Nepal extended the assistance to IMTP for fifty additional days (October 1 - November 20, 1999) in order to complete two final Deliverables/Contractor Performance Indicators

- Canal Operation Plan for Pathraya Subproject
- Contract Completion Report (Draft)

5.1 Canal Operation Plan for Pathraya Subproject

As mentioned in Chapter Four, Phase II's Pathraya Subproject has progressed further than other Phase II subprojects. As of September 1999, the Pathraya WUA had been established and was functioning, and rehabilitation was 80 to 90 percent complete. It is anticipated that full turnover of Pathraya to the WUA will take place in mid-2000. (Final rehabilitation works will be completed during the 1999-2000 dry season.)

A key element of that turnover is the ability of the Pathraya WUA to operate and maintain their irrigation system. To that end, Project implementors worked with the Pathraya WUA during September-October 1999 to develop a Canal Operation and Maintenance Plan. This plan was developed at the subproject with full participation of the farmers, and was formally submitted to USAID/Nepal in November 1999. A copy of the cover page of this Canal O&M Manual for Pathraya is included as **Annex D 1**.

5.2 Contract Completion Report

An electronic version of the draft Contract Completion Report for IMTP was sent by e-mail to USAID/Nepal on November 15, 1999, and hard copies were express mailed on November 16, 1999. As per the original USAID/Nepal - CADI contract, the contractor will submit final copies of the report to USAID/Nepal "within 60 days of the contract completion date", i.e. January 20, 2000.

5.3 Project Technical Activities in the Field

During the 50-day extension from October 1, 1999 to November 20, 1999, Project Implementors continued their activities in the field. Meetings were held with WUAs in Phase II subprojects, and AsDB concluded a formal IMTP Project Review Mission. During this 50-day extension, small changes were made in the field requiring the status of the IMTP WUAs, e.g., the Pathraya Operations and Maintenance Plan, was completed. Annexes A 1 to A 8 outline the current status and activities in Phase I and II subprojects through November 20, 1999.

6. ESSENTIAL POST-TURNOVER SUPPORT REQUIREMENTS

Chapters Two to Five of this report focused on results and achievements of the Project from May 1996 to November 1999. The next three chapters (Six to Eight) analyze three key components of IMTP:

- Post-Turnover Support
- IMD/DOI and WUA Roles in Management Transfer
- Opportunities for Women's Participation

These following chapters suggest ways to further improve Project performance by operationalizing these three key components:

6.1 Post-Turnover Support Principles, Goals, and Objectives

A post-turnover support strategy (PTOS) or package must be based on basic principles, goals, and objectives. These principles provide a road map or guide for PTOS implementation.

Key PTOS principles include:

- **Stress WUA Self-Reliance and Self-Help** - Post-turnover strategies should focus on self-reliance for the WUAs and avoiding dependency through a constant stream of government assistance. Strategies should stress that the government should not implement what farmers can do for themselves. The inherent capabilities of the farmers should never be underestimated, they should be nurtured and developed further.
- **WUAs Will Not Be Abandoned** - Irrigation management transfer does not mean that farmers will be abandoned after turnover, or that all government subsidies will be reduced or eliminated. Post-turnover strategies should include a role for the government in providing technical guidance and assistance to the farmers, and helping them in matters beyond their capabilities.
- **Avoid Generating WUA Dependency on Government Services** - While the WUAs will not be abandoned, they should also not become dependent on a constant, unending stream of government assistance.
- **WUAs Must Be Helped to Become Economically Viable Business Houses** - The WUA must be run like a business, not like a social welfare program. This requires modest financial and accounting skills and knowledge. To become a "business house",

however, does not imply that the WUA must branch out into commercial profit-making enterprises. That decision should be left up to the WUA. Some WUAs may prefer to do this, others may not. But all should be run like economically viable business houses.

- **PTOS Packages Should Be Practical, Pragmatic, and Do-able** - It is of little use to design elaborate PTOS packages that will never be implemented. PTOS implementors must be practical and pragmatic regarding what can and cannot be accomplished in PTOS in rural Nepal. PTOS strategies should explicitly and realistically consider Nepal's resource constraints, and plan accordingly.
- **Include Private Sector Activities in Conjunction with Government Assistance** - There is often an overriding assumption that "government line agencies" will provide the bulk of assistance in PTOS packages. While the government will play an important role, the private sector should be actively encouraged to become involved in post turnover support.
- **PTOS is an Evolving Process** - Post turnover support strategies cannot be completely defined in advance. It is unlikely that there will be one or two overall strategies that will fit all Nepalese irrigation systems. A "cookie cutter" or overly standardized approach that decrees one PTOS package for all irrigation systems will likely fail. Some degree of flexibility must be built into PTOS strategies. As different subprojects will have different needs, so should PTOS packages have different components that can meet those needs.

The first two principles in particular (WUA Self-Reliance, WUAs Will Not Be Abandoned) can become contradictory if they are not managed properly. Both should be stressed. One principle should not be over-emphasized and the other principle under-emphasized. The PTOS strategy in IMTP subprojects must continue to develop the WUAs capabilities, but in a way that enhances the WUAs' own abilities. At the same time, it should be demonstrated that DOI personnel will be available for assistance, but they will play a different role than in the past (See **Chapter 7** for description of new DOI roles).

6.2 Factors Affecting Types of PTOS Packages

There are a number of factors that will influence the type and extent of PTOS required. Some of these factors (e.g. strength of WUA) can be modified and are subject to direct management intervention. Other factors, however (e.g. water availability) are not so readily subject to man-made intervention, and PTOS packages have to be developed that

acknowledge such environmental and geographic factors, and explicitly plan to deal with them. Depending on how these factors are managed and accounted for, PTOS packages can succeed or fail.

Such factors influencing PTOS include

- Complexity of the Irrigation System Network
- Maturity of the WUA
- Exposure to Natural Hazards
- Subproject Accessibility to Roads, Towns, etc
- Water Availability
- Size of the Command Area
- Nature of Transfer

Despite all these elements that influence PTOS, perhaps the most critical factor determining the nature and extent of PTOS is how well the initial organization, preparation, and implementation stages were implemented. If the AP/MOAs were rushed, if rehabilitation quality was poor, if the WUA was weak and not involved in the management transfer processes, then PTOS strategies will be expensive, time-consuming, and long-term. If the initial stages were implemented properly, however, PTOS packages will likely be smaller, more manageable, and less costly.

6.3 Current PTOS Packages

Although PTOS strategies have not been explicitly and comprehensively addressed in official HMG and DOI documents, some guidelines for PTOS have been mentioned in HMG's Irrigation Policy (1997 Amendment), IMTP's Phase I MOAs, and in the new IMTP Transfer Agreement.

6.3.1 Irrigation Policy (1997 Amendment)

HMG's Irrigation Policy (1997 Amendment) does not explicitly mention post turnover support, but does briefly describe "provisions for the transfer of the irrigation system to the

Users' Association " (Section 2 2 2) The policy clearly states that DOI will continue to play a role in assisting the WUA after management transfer

After transfer If request is made for technical assistance because of it being beyond the capability of Waters Users' Association, His Majesty's Government may provide such assistance (Section 2 2 2 e)

Though the type, extent, and duration of "technical assistance" after transfer is not addressed, it seems clear that the policy's intention is that some PTOS will be provided

The Irrigation Policy (1997 Amendment) also describes arrangements under Joint Management (Section 2 2 3), but does not mention PTOS in joint management subprojects It may be supposed that the technical assistance mentioned under the Transfer Section is to be applied to those portions of the irrigation system that are turned over in a joint management subproject

6 3 2 Phase I MOAs

In the Phase I MOAs, and in the slightly revised MOA used for IMTP's Patharaiya Subproject, there is a lengthy description of the responsibilities of the WUA and DOI after management transfer (Section 9) Post turnover support, however, is not addressed in the Phase I MOAs, though there is an clear connection between potential responsibilities and support

In the IMTP Phase I MOAs (Section 9), WUA responsibilities include

- Maintenance, Repair, and Improvement of Canal
- Canal Operation
- System Rehabilitation and Improvement
- Record Keeping
- Raising of Watercess and Irrigation Service Fee
- Outcome Monitoring
- Reporting Work

DOI responsibilities include

- Maintenance, Repair, Improvement, and Water Distribution
- Technical Assistance
- Renovation, Improvement, and Extension
- Natural Calamities

These WUA and DOI responsibilities are quite comprehensive and detailed, although perhaps not always practical or doable. Nevertheless, the responsibilities described in the Phase I MOAs provide a good start for developing detailed PTOS packages. It is clear that the Phase I MOA calls on both parties to cooperate in O&M, system rehabilitation, and administrative/financial work.

In the proposed new MOA for Phase II subprojects, however, Section 9 on WUA and DOI responsibilities has been eliminated entirely. That is, in the proposed new MOA, there are not explicit sections dealing with DOI and WUA responsibilities after transfer. Rather, ideas concerning responsibilities and support have been transferred to the proposed new Transfer Agreement. The new Transfer Agreement addresses PTOS per se.

6.3.3 Proposed New Transfer Agreement for Phase II Subprojects

The proposed new Transfer Agreement focuses more on the services and advice that DOI should provide to the WUAs, and less on DOI's and the WUAs' responsibilities. All the responsibilities of both parties outlined in Section 9 of the Phase I MOAs have been subsumed under shorter sections in the Transfer Agreement focusing on post turnover support.

Section 4 of the new Transfer Agreement ("Terms and Conditions to be Complied by the Association") very briefly mentions the WUAs' responsibilities. For instance, "The repair and maintenance works of the constructions (structures) of the irrigation system and the assets shall be done by the Association itself using its own means and resources." (Section 4.6) This section also describes how the WUA can obtain ownership of assets, collect irrigation service fees, etc.

Only in Subsection 4.4 does the new Transfer Agreement specifically mention that the WUA can request technical assistance and support from DOI. "In case it requires to improve structures of the constructions the concerned Irrigation Office shall provide necessary technical service free of cost is so requested by the Association." Although the technical service itself is not explicitly described, it seems clear that the Transfer Agreement gives the WUA rights to free technical assistance from DOI after transfer.

Section 5 ("Works to be Done by the Department") is far more explicit about PTOS. Section 5.1 describes PTOS in case of natural disasters. Section 5.2 describes annual joint monitoring and evaluation activities that should be conducted by DOI. Section 5.3 and 5.4 discuss training, research, and engineering services that DOI should provide free of charge. Training for the WUA is detailed in Section 5.5. Section 5.6 specifically discusses the transitional support that shall be made available to the WUA.

PTOS packages, therefore, are specifically identified and authorized in the proposed new Transfer Agreement. Though the document obviously does not go into great detail about the type, extent, or duration of PTOS, it does make clear that free PTOS should be provided to the WUAs after transfer. Conceptually, therefore, the Transfer Agreement fulfills the legal necessity of giving approval and a stamp of legitimacy to PTOS.

The more difficult question is what should PTOS consist of, and how should it be implemented.

6.4 Proposed Types of PTOS the "What"

A crucial element in PTOS in IMTP is the recognition that the "How" of PTOS is just as important as the "What". In other words, PTOS packages can be defined fairly easily, but the more difficult task is to effectively implement those packages. If resources to actually implement PTOS are lacking, then the what becomes only a paper exercise. Therefore, Section 6.4 in this chapter describes the what, and Sections 6.5 to 6.8 describe the how.

In general, there are three broad areas or types of PTOS that could be considered in Nepal: (1) O&M, water management, rehabilitation, (2) institutional and financial services, and (3) agricultural assistance.

It is important to point out, however, that DOI cannot and should not provide all of these post-turnover support services to a single subproject. Such a task is far beyond the capability and resources of a single government agency. A key PTOS principle mentioned earlier should be reiterated - PTOS packages should be practical, pragmatic, and do-able. Below is a list of *potential* PTOS services that DOI might implement. This is not to say that DOI should implement all of them all the time. PTOS packages should focus on what can be done considering resource constraints, logistical problems, and budgets. PTOS packages should not focus on being all things to all WUAs. There are practical limits to PTOS services that should always be adhered to.

6 4 1 O&M, Water Management, and Rehabilitation Activities

There are a number of O&M, water management, and rehabilitation activities that should be in a PTOS package

1 Annual System Walk-Through

Every year the WUA should conduct their own system walk-through. At least for the first few years after turnover, DOI staff should accompany the WUA to provide technical assistance. This annual system walk-through is explicitly described in the new Transfer Agreement (Section 5.2), though there it is called joint monitoring and evaluation.

The purpose of the post-turnover system walk-through is the same as the original joint system walk-through (conducted in the management transfer preparation phase) - to identify the areas and structures within the subproject that need particular care and maintenance during the subsequent year. Such a walk-through would provide an added benefit of allowing local DOI officials and the WUA to meet at least annually in a structured format, to observe and discuss O&M and rehabilitation issues.

2 Review and Revise WUA O&M Plan

As the subproject physically changes over time, it is likely that the WUA's O&M plan will need periodic revisions and modifications. The WUA will make these changes with DOI technical support.

Assisting the WUA to focus on system maintenance, in particular, will be an important part of PTOS activities. In the earlier management transfer preparation and implementation phases, some specific types of maintenance should have already been completed. *ESM* (essential structural maintenance), for instance, is the minimum level of investment that should have already been made in order to improve water deliveries. *Catch-up maintenance* should have taken care of accumulated *deferred maintenance*. These items should have been implemented before turnover.

In the turnover phase, *normal maintenance* should be done by the WUA every year. Normal and routine maintenance are synonymous terms referring to the usual (normal) maintenance activities that are conducted annually by the WUA. Normal maintenance involves those activities commonly done (rather than "should be done") every year. Part of the PTOS package will be to help the WUA identify what activities should be included in *normal annual maintenance*.

PTOS will also help the WUA develop and implement an effective *preventative maintenance* program. Preventative maintenance focuses on the causes creating maintenance needs when they are only minor problem, rather than allowing such maintenance needs to go unattended until they become a major and expensive problem (CADI and APTEC Consultants, March 1997)

Developing both normal and preventative maintenance programs with the WUAs will be a key component of PTOS

Experiences from other countries, however, have indicated that preventative maintenance often is neglected after turnover. INPIM, for instance, points out that farmer organizations rarely raise long-term capital replacement funds. Rather,

They tend to emphasize cost containment to the point of neglecting preventative maintenance of their infrastructure. Taken together, these two trends constitute an emerging threat to the sustainability of irrigation systems, particularly where the ability of governments to finance rehabilitation in the future is uncertain (INPIM Newsletter No 7, April 1998, pg 13)

Nepal's PTOS strategy should take notice of this trend, and address the potential reluctance of WUAs to raise long-term capital replacement funds and carry out preventative maintenance

3 Assistance to Canal Management Workforce

During the post-turnover phase, the Canal Management Workforce will continue its O&M work. The actual size of the workforce may change over time, but it will retain its primary duty as implementor of the WUA's O&M plan. Under the PTOS strategy, the Canal Management Workforce becomes the primary tool to ensure effective O&M of the subproject. Therefore, periodic training and orientation programs should be provided to the WUA's Canal Management Workforce, to upgrade their skills and ensure continuity as Workforce members change.

4 Recruitment, Training, and Monitoring of WUA Technical Manager

The WUA should hire a full-time Technical Manager, who will be in charge of the Canal Management Workforce. The WUA Technical Manager might be an ex-DOI employee, but his salary will come from the WUA.

Selecting the best person for this position will obviously be the responsibility of the WUA, but DOI should provide advice regarding who would be the best candidate for this job. After

selection, DOI should help in the training of the WUA Technical Manager, as he (or she) gradually replaces DOI staff

5 Gradual Subproject Upgrading by the WUA

Based on the annual system walk-through, and financed by ISF (irrigation service fees), DOI will help the WUA to plan gradual upgrading of the irrigation system. For larger rehabilitation needs, the WUA will negotiate with DOI for assistance.

It is often the case that the physical condition of an irrigation system affects institutional success. In the IMTP program, rehabilitation has been provided prior to management transfer, to ensure that the subproject's physical condition is acceptable. PTOS should help the WUAs to keep the system in running order. Ideally, "irrigation systems should be designed to minimize operational and maintenance costs over the long term, rather than aiming at low capital costs in the initial rehabilitation or construction phase" (INPIM Newsletter, No 7, April 1998, pg 16)

6.4.2 Institutional and Financial Activities

A PTOS strategy for Nepal will also contain a number of institutional and financial activities

1 WUA Assistance

(a) Periodic WUA Elections

In line with its constitution, the WUA will hold periodic elections to ensure that new leaders and ideas are always a part of the WUA. PTOS will assist the WUA in ensuring that true grassroots democracy is being practiced in the elections.

(b) WUA Administration and Resource Management

Operating an effective and efficient WUA requires a degree of administrative expertise in The Three M's (i) manpower, (ii) material, and (iii) money. Managing human, financial, and technical resources will be a primary job of the WUA after management transfer. PTOS activities will assist the WUAs in these three critical areas of management. The support may be as basic as helping the WUA establish a simple office with a few desks and chairs, or as complex as devising a working schedule for a WUA Canal Management Workforce for a 25,000 hectare irrigation system.

(c) Record-Keeping

For financial and management purposes, sound WUA record-keeping is essential. If records are not accurately kept, particularly of financial transactions, the WUA will quickly lose credibility with the farmers. A PTOS package will help WUAs keep accurate, up-to-date, and transparent records.

(d) Strengthening WUA Lower Administrative Levels (*upa-tolis*)

An interesting finding from the IMTP Phase I subprojects is that particularly in the larger subprojects, the WUA's lower administrative levels (i.e. *upa-tolis*) are still not firmly committed to the turnover program. That is, though the main committee may be active and trained, many of the *toli* and *upa-toli* leaders are either not fully informed or involved in management transfer activities. For true sustainability, the PTOS package must make provisions to activate and strengthen these lower administrative levels. Without their participation and involvement, it is doubtful that management transfer can succeed over the long run.

(e) Creating Opportunities for Women

No PTOS will be complete without a specific commitment of resources to create opportunities for women to fully participate in the benefits of management transfer. PTOS packages for women might include components for income generation and crop diversification programs targeted to women. Of all the subproject farmers, it is the women who are the most anxious to see the post turnover activities succeed.

2 WUA Financial Viability

For long-term sustainability, the WUA will focus on its financial viability, including an emphasis on making the WUA a true business house where income and expenditures are closely monitored.

(a) Revised ISF Collections Based on Annual Walk-Through

The financial backbone of the WUA must remain ISF collections. While ISF collections should have started under the management transfer preparation and implementation stages, revised ISF collections will be stressed in PTOS activities.

Based on the annual system walk-through, the WUA will develop revisions in their ISF. That is, if additional revenues are needed, ISF rates will increase. If the subproject's O&M needs appear to be less in a given year, the ISF rate can decrease. PTOS packages will help the WUA to implement these ISF changes.

The PTOS activities will focus on a learning cycle to test and strengthen the social and technical skills of the WUAs in ISF collections. This will involve identifying components that the WUAs can pay for, rather than using the more cumbersome method of repaying work budgeted and commissioned by others (INPIM Newsletter No. 7, April 1998).

(b) Relevant WUA O&M Budgets

To be sustainable, ISF collections must not be based on arbitrary figures, but on relevant O&M budgets. Then, based on those budgets, ISF fees can be accurately determined and collected. PTOS strategies will be focused on working with WUAs to develop relevant WUA O&M budgets. The first logical step would be to have WUA sub-project managers explain their present DOI O&M budgets to the WUAs, and then help the WUAs to develop their own O&M budgets.

(c) Financial Viability from Other Sources (Tolls, Trees, etc.)

WUAs will likely wish to pursue new opportunities for income generation other than ISF, such as tree planting and cutting along canal right-of-ways, collecting small tolls along canal roads, etc. While not replacing ISF, these other sources of income can become a valuable element in the WUA's long-term financial viability. PTOS packages will help WUAs exploit these other opportunities, while not losing sight of the primacy of ISF collections.

(d) Diversification of WUA Activities Beyond Irrigation

It is also likely that some WUAs may wish to expand their income producing activities beyond irrigation per se. While there is nothing inherently wrong with this approach, a PTOS strategy might work with the WUAs to point out the advantages and disadvantages of expanding beyond irrigation activities.

"After IMT, farmer organizations often seek to replace their lost government subsidies with income from sideline enterprises, such as renting out of equipment, sale of excess water, bulk purchase or sale of agricultural inputs, marketing services, etc.

Some observers view this as a threat to management performance, in that it dissipates the attention of the organization from its original primary function of irrigation management. Others see it as a means to increase farmer group support for their organization " (INPIM, April 1998, pg 13)

A potential three-step PTOS strategy for assisting the WUA to rationally diversify WUA activities beyond irrigation might include

- (i) First ensure that the WUA finances on purely irrigation matters are in order, e.g. ISF collections, etc
- (ii) Then assist WUAs to begin other income generating activities that are directly related to water, such as small fisheries or raising ducks
- (iii) Finally, emerge into income producing enterprises not connected with water, e.g. agricultural inputs, etc

By following such a PTOS phased approach, the WUAs may keep their primary focus on irrigation performance, but also increase their income on other outside activities

3 WUA Training

The proposed new Transfer Agreement specifically mentions that WUA training will be a part of the PTOS package. The document states that to increase the efficiency of the WUA, the WUA should submit requests for training to DOI, and based on those requests, the Department may provide continuous training to the WUA.

WUA training should focus on increasing or altering the WUA's skills, attitudes, or knowledge on topics that are relevant to the WUA. Though DOI may not be able to provide sufficient training on all topics requested by the WUA, DOI can act as a liaison to other organizations that can provide more specialized training.

4 Farmer Participatory Research

PTOS strategies could make a valuable contribution to long-term WUA sustainability by helping facilitate farmer participatory research in management transfer subprojects. Farmer participatory research is a unique type of research, where farmers are used not as objects of the research, but as true participants. The farmers become partners with the researchers, not the object of study itself.

There are a host of important research topics that a PTOS package could facilitate, including small farm machinery, WUA enterprise diversification, better water management practices, etc

5 Long-Term Institutional PTOS Activities

(a) Development of WUA Water Rights

A key element of PTOS activities will be to secure water rights for the WUA. This is a long-term proposition, and will not be solved immediately. Farmers, however, will need to know that they have a long-term legal right to their irrigation water and PTOS can provide assistance in the water rights area.

(b) WUA Legal Rights

Though the Water Resources Act 2049 (1992), as well as the new Transfer Agreement, outline some key WUA rights, farmers in IMTP Phase I subprojects are continually requesting more information on WUA legal rights. As this is such an important topic for farmers, PTOS packages should directly address the WUA legal rights, and then communicate those rights to the WUAs.

6.4.3 Liaison for Agricultural Support Services

Another key element of PTOS strategies is linking the post turnover WUA to agricultural support services. As PTOS actively promotes the WUA's financial viability and its transition into a business house, it is inevitable that agricultural services will play a key role in that transformation. Though WUAs may wish to expand their activities beyond agriculture, it is likely that the majority of farmers will continue see agriculture as their primary livelihood.

It is also crucial to acknowledge, however, that DOI is not an agricultural support service. DOI is a government irrigation agency. With its new service orientation, DOI can act as a liaison or linkage between the WUA and agricultural support services, but DOI should not be viewed as a provider or doer of agricultural services.

While acting as a linkage to agricultural support services, however, PTOS packages should not focus exclusively on other government line agencies. Opportunities in private sector agricultural services should also be promoted and exploited.

1 Assisting WUAs in Increasing Production and Income

PTOS strategies should focus on assisting the WUAs to manage agricultural support services. For long-term sustainability, PTOS processes should help build the WUA's capacity to collectively increase their agricultural production.

There are at least three compelling reasons why PTOS should emphasize building the capacity of the WUAs to increase the productivity of their irrigation systems:

- (a) Transforming the WUA into a viable financial entity and business house depends to a large extent on the paying capacity of the farmers, which in turn depends on their level of production and income.
- (b) The most tangible objective of an irrigation system, upon which its performance may be measured, is the increase in agricultural production.
- (c) Another process for revitalizing WUAs will become available.

Increasing production on a collective basis requires grass roots mobilization on a continuing basis for planning and implementation activities. After physical rehabilitation of an irrigation system, the desire of the farmers to further increase production and income becomes a continuing challenge and opportunity for the WUA. An effective PTOS process for developing WUA capacity along these lines will be another powerful tool for irrigation management transfer.

The basic methodology and some of the resources for developing the process are available in DOI. With the proper channeling of efforts and resources, the process can be developed, implemented, and expanded.

2 Crop Diversification (Cash Crops)

Cropping systems in Nepal's Terai typically follow continuous rice-wheat rotations. Diversifying these systems to higher value crops and livestock enterprises can result in increased employment, higher incomes, and reduced poverty levels. Diversification strategies, however, are often hampered by labor shortages, transportation bottlenecks, and inadequate space in the cropping sequence for additional enterprises.

PTOS strategies should focus on assisting the WUAs to diversify towards high value crop and livestock enterprises. Working with both government line agencies and private sector support services, PTOS could facilitate farmer experimentation with alternative diversification enterprises. Results from the IMTP Phase I subprojects indicate that farmers are very interested in learning more about vegetable production. Currently they only lack the impetus and information required to diversify into vegetables. Women in the Phase I subprojects have

particularly voiced a desire for assistance in cash crop development PTOS services should provide the needed linkage and liaison between the WUAs and crop diversification activities

3 New Agricultural Technologies and Techniques

In addition to new crop diversification strategies, PTOS could also help link the WUAs with new and productive agricultural techniques and technologies For instance, there is evidence in Nepal that zero tillage and small farm machinery reduces turnaround time, fosters timely sowing, avoids late planting, improves input use efficiency, increases yields, breaks labor and transport constraints, makes possible more diverse cropping systems, and assists in the introduction of high value enterprises (CIMMYT, 1998) Mechanization of agriculture with small farm machinery may be an important element in increasing farmers' productivity and income PTOS packages could put WUA member in touch with the practitioners of these new agricultural technologies and techniques By acting as a catalyst, PTOS services from DOI could do much to sustain WUAs over the long run

6 4 4 Post-Turnover Support in IMTP Phase I Subprojects The "What"

To properly define the PTOS activities and elements (the "what") for the IMTP Phase I subprojects, in August/September 1998 the IMTP TA team contacted and interviewed all three Phase I WUAs regarding their most critical needs in the next 12 months Local DOI personnel were also interviewed, including the then two current Phase I subproject managers, and the past West Gandak Subproject Manager Finally, the TA team discussed among themselves and with other key informants what were the most practical and do-able PTOS activities that could be conducted in the three Phase I subprojects

Though different WUAs and DOI staff had different opinions regarding the most critical needs in the next 12 months, at least three common requests emerged

1 Agricultural Support Services

- (a) Recommended cropping patterns for different types of land (irrigated, non-irrigated, flooded)
- (b) Crop diversification
- (c) Cash crop production
- (d) Vegetable production

2 Activation and Strengthening of Lower Levels of WUA (*upa-tolis*)

- (a) Office administration
- (b) ISF collection
- (c) Commitment of *upa-tolis* to management transfer
- (d) Financial management

3 Canal O&M Procedures

- (a) How to get water to tail?
- (b) Identification of O&M costs
- (c) Water management

It is important to point out that there was not one universal theme or pattern for each of the three major requests listed above. Rather, within each of the three major requests, there were a host of different needs. In agriculture, for instance, some farmers wanted help in cereal production (rice, wheat). Others requested assistance in horticulture production and backyard or "kitchen gardens". Others wanted to learn about zero tillage techniques and its applicability to different types of land.

In addition to these three major items, specific farmers and WUA officials included other requests for support. These requests might be termed "Flex Items" (or flexible items) because they were not mentioned consistently, but were strongly requested.

- Opportunities for Women (Income Generation)
- Identification of WUA Legal Rights
- O&M of Heavy Equipment
- Farmer-to-Farmer Training

In providing a PTOS program to Phase I subprojects, multiple interests and requests will have to be considered. It is doubtful that IMTP can satisfy all the diverse requests. Rather, IMTP will have to prioritize the requests, and match the subprojects' needs with the resources readily available. An IMTP PTOS program might be more effective concentrating on two or three key elements or activities, rather than trying to satisfy all requests, which would severely stretch IMTP's resources. Considering IMTP financial, manpower, and equipment constraints, IMTP should focus on a significant impact in two or three key areas of concern, rather than a small impact in many different areas of need.

6 5 Implementing Post Turnover Support in IMTP the "How"

Regardless of what should be included in a PTOS package, IMTP must also consider *how* to implement PTOS activities

6 5 1 General Strategies for PTOS Implementation in Phase I Subprojects

Ideas regarding how to implement PTOS could be classified under six major headings

- 1 The WUAs themselves should take the lead role in most of the PTOS implementation** The WUA has the primary responsibility for PTOS, with Project personnel as back-up support
- 2 DIO (District Irrigation Office) staff, DEs, and Overseers should be involved in PTOS activities** After turnover, it is likely that DIO staff will take on more responsibility for the IMTP subprojects. It is crucial that they become involved in PTOS. For instance, DIO staff and Overseers from Chitwan should be taken to West Gandak to observe the changes in that subproject
- 3 The Phase I WUAs will continue to need much interaction (contact days) and moral support** As management transfer is a new process in rural Nepal, IMTP WUAs will need moral support as much, if not more, than monetary support
- 4 Periodic Project presence is still needed** IMTP farmers have very strongly suggested that they still need a reduced, but continuing presence of Project staff
- 5 Private sector agricultural services should be contacted and used** While some WUAs may want to work with government line agencies for agricultural support services, other WUAs may rather work directly with private sector services, e.g. private seed farming, private soybean oil, etc. Private sector services might be responsive and available
- 6 PTOS activities should be conducted in *Mangsir, Pus, and Magh*** Farmers said they would be available to participate in PTOS activities between rice harvesting and wheat harvesting, generally the three Nepalese months of *Mangsir, Pus, and Magh* (November - February)
- 7 PTOS activities in IMTP must be directly related and oriented to the activities carried out in IMTP** In other words, whatever PTOS strategy is selected, it should follow on the work already done in the IMTP sites. There is no need to re-invent the

wheel Whoever works in PTOS activities in IMTP should know the management transfer process that was used, and should know the WUAs This may require training and orientation of new staff

- 8 Each of the IMTP subprojects have different needs and expectations** Therefore, PTOS activities must be location specific as much as possible For instance, the PTOS needs in Panchakanya are very different from the PTOS needs in West Gandak PTOS packages must reflect those differences as much as possible

6 5 2 Six Options for PTOS Implementation in IMTP

Based on these general strategies for PTOS implementation, there seem to be approximately six potential options to consider for PTOS activities in Phase I subprojects The six potential strategies, with their advantages and disadvantages, are shown in **Table 6 1** below

These six options are not mutually exclusive That is, elements of one option can be combined with other options The best option may be a mixture of DOI, NGO, private sector, and TA support

**TABLE 6 1
POST TURNOVER SUPPORT
POTENTIAL OPTIONS FOR *HOW* TO IMPLEMENT IN IMTP SUBPROJECTS**

OPTION	ADVANTAGES	DISADVANTAGES
<p>1 "Traditional," What IMTP Has Already Done in Phase I, DOI and TA (Long-Term and Short-Term) Implement</p>	<ul style="list-style-type: none"> • DOI and TA control schedule and operations • General working arrangements already known and accepted • Already produced good Phase I results 	<ul style="list-style-type: none"> • Serious resource constraints for both DOI and TA • Not responsive and flexible enough, can be slow-moving

OPTION	ADVANTAGES	DISADVANTAGES
<p>2 Trained DOI Personnel are Posted at Phase I Subprojects, TA Only Works in Phase II Subprojects</p>	<ul style="list-style-type: none"> • DOI does not have to rely on TA • DOI develops full-scale government model for post turnover support • TA resources concentrated in more limited area (i.e. only Phase II), thus increasing impact 	<ul style="list-style-type: none"> • DOI faces many resource constraints • DOI staff posted in Phase II subprojects would first have to be trained in what happened during Phase I, will take time • Phase I WUAs have specifically requested that TA continue support in Phase I subprojects
<p>3 Hire Local NGO with TA or DOI Funds</p>	<ul style="list-style-type: none"> • Someone can live at site full-time working with WUA • Can build productive relationship with Phase I WUAs • Can be flexible and responsive • Some talented and dedicated local NGOs exist in Nepal 	<ul style="list-style-type: none"> • May be expensive • Will take 6-12 months to build up trust and experience • First six months may not be productive • Will have to be trained in what happened in Phase I and irrigation management transfer procedures
<p>4 Use INGO</p>	<ul style="list-style-type: none"> • Many of the same advantages of local NGO, e.g. will live at the site, can build productive relationships with WUAs, etc • Good technical expertise 	<ul style="list-style-type: none"> • INGO defines the post turnover program, not IMD/DOI. May have different priorities • Will take 6-12 months to build up trust and experience with WUA • Must be able to speak <i>pukka</i> Nepalese or Hindi
<p>5 TA or HMG Provides Direct Grant to WUA (say Rs 200,000), But with Control Over use of Money</p>	<ul style="list-style-type: none"> • Most responsive and flexible • WUA hires its own trainers, extension agents, advisors, etc • Very grassroots oriented, WUA has control of its own destiny • Builds up WUAs' financial capability 	<ul style="list-style-type: none"> • Not sustainable over long-run/ • Can create dependency • Some bureaucracy

OPTION	ADVANTAGES	DISADVANTAGES
6 DOI Provides "x" percent of Their Training, O&M, Institutional Development Budget to WUA as Grant or With Vouchers, But With Control Over Use of Money	<ul style="list-style-type: none"> • Responsive and flexible to WUAs needs • WUA can hire their own advisors • Builds up WUA's financial capability • More sustainable than TA providing grant • Makes DOI very sensitive to WUAs' needs 	<ul style="list-style-type: none"> • Will decrease DOI's IMTP budget • May be HMG rules preventing this • Could create dependency in WUA

6 6 Transitional Support

PTOS strategies also need to explicitly consider transitional support, where assistance from the government is gradually reduced, rather than abruptly reduced to zero

6 6 1 Transitional Support In Principle

Under the PTOS package, support will always be available to the WUAs. One of the overall principles of PTOS is that management transfer or turnover does mean that the WUA will be abandoned. Support will always be present. The key questions are what form should the support take, and should the type of support change from year to year.

A rational PTOS policy would not promote a sudden and complete cancellation of support. Rather, a transitional phase of perhaps three or four years should be considered, where pre-planned and structured government support is gradually reduced. During this time, government training programs would continue, and there would continue to be close contact between WUAs and government officials. The number of contact days and intensity of interaction between the WUA and the government would gradually decrease during this transition phase.

Even after these three or four years, however, support would not entirely disappear. Rather, government support would reach a kind of steady state, where drastically reduced, but continuous, support is available.

For instance, during the transitional support phase, contact days between the WUA and government officials may decrease from 120 days/year in the first year, to 90 days/year in the second year, to 60 days/year in the third year. Starting in the fourth year, contact days per year might remain at a constant 30 days/year into the future. This type of phased, but not total withdrawal, could be visualized as **Table 6 2** below.

**TABLE 6 2
HYPOTHETICAL NUMBER OF CONTACT DAYS PER YEAR BETWEEN DOI AND
WUA DURING AND AFTER TRANSITIONAL SUPPORT PHASE**

Years After Formal Turnover	Contact Days Per Year
One	120
Two	90
Three	60
Four	30
Five	30
Six	30
Seven, etc	30, etc

Obviously there are many factors that will determine the type and length of support in the transitional support phase. At present DOI has a policy that transitional support will last for two years in smaller subprojects, and three years in larger subprojects. Although a two to three year transitional period may be a little short, the actual length of time for a formal transitional support phase is not as important as the larger goal of ensuring that the WUA's self-reliance is established during the transitional phase.

6 6 2 Transitional Support in Number of DOI Staff

During the transitional support phase, both the DOI and WUA staff will undergo significant changes in numbers, composition, and purpose. For instance, in the first year after management transfer, DOI might assign one Engineer and two Overseers to work with the WUA and the WUA Technical Manager. The DOI staff would train the WUA Technical Manager and ensure that he was technically capable. In the second year after management transfer, the DOI support might be reduced to two Overseers. In the third year, that support could be reduced to one Overseer. By the fourth year, the WUA Technical Manager should be fully capable of managing the subproject's O&M without any full-time government assistance.

At the same time, the WUA should be encouraged and assisted to hire their own staff, using their ISF collections for salary. In addition to the WUA Technical Manager, the WUA Canal Management Workforce will take on added members and responsibilities.

This type of phased DOI manpower reduction and increase in WUA responsibilities could be visualized in **Table 6 3** below.

**TABLE 6 3
HYPOTHETICAL REDUCTION OF GOVERNMENT STAFF DURING
TRANSITIONAL SUPPORT PHASE**

Number of Years After Formal Turnover	DOI Staff at Subproject	WUA Staff at Subproject
One	<ul style="list-style-type: none"> • One DOI Engineer • Two DOI Overseers 	<ul style="list-style-type: none"> • One WUA Technical Manager • WUA Canal Management Workforce
Two	<ul style="list-style-type: none"> • Two DOI Overseers 	<ul style="list-style-type: none"> • One WUA Technical Manager • WUA Canal Management Workforce
Three	<ul style="list-style-type: none"> • One DOI Overseer 	<ul style="list-style-type: none"> • One WUA Technical Manager • WUA Canal Management Workforce
Four	<ul style="list-style-type: none"> • No Permanent DOI Staff 	<ul style="list-style-type: none"> • One WUA Technical Manager • WUA Canal Management Workforce

6 6 3 Transitional Support Outlined in Proposed New Transfer Agreement

In the proposed new Transfer Agreement there is a small, but important subsection that deals explicitly with transitional support. Subsection 5.6 of the new transfer document states that, "The Department shall provide transition support to the Association for the management of the irrigation system and the assets to be transferred for a period up to _____." The document, therefore, allows the local DOI office and the WUA to define the length of the transitional support period.

Subsection 5 6 further states, "The technician, manpower, and other services as well as financial assistance to be provided under transitional support shall be as mentioned in schedule " Schedule 5 in the back of the document provides DOI and the WUA an opportunity to be very clear and transparent regarding the details of transitional support Schedule 5 is shown as **Table 6 4** below

**TABLE 6 4
SCHEDULE 5 IN PROPOSED NEW TRANSFER AGREEMENT
"TECHNICAL MANPOWER TO BE AVAILED FREE OF COST"**

Types of Manpower	Year No	Year No	Year No
1			
2			
3			
4			
5			
Other Assistance			
1			
2			
3			
4			

Though the Schedule itself may not be perfect in all respects, it does clearly show what support the WUA should expect from DOI over the next few years In other words, it defines the transitional support to be provided in a clear format, thus allowing both DOI and the WUAs to discuss beforehand what support should or should not be provided All transitional support should be this clear, transparent, and open before formal turnover takes place

6 7 Asset Transfer (Equipment, Land, Buildings, etc)

To be truly comprehensive, a PTOS package must also consider asset transfer That is, what will happen to the equipment, land, and buildings that DOI owns after management transfer Will DOI continue to own them, or will the WUA take over ownership?

There are basically two types of asset transfer - (i) utility transfer, and (ii) legal transfer Under utility transfer, the WUA has the right to use the assets, but DOI retains legal

ownership. The purpose of utility transfer is to ensure that the WUA has full rights and responsibilities to use the equipment, but would not have the right to rent or sell the equipment and property. For instance, if the WUA owned a DOI bulldozer and in principle could sell it, the WUA might be tempted to sell the bulldozer for a large sum of money, but that would leave the subproject very vulnerable to floods and canal breaches during the rainy season. With utility transfer, DOI at least retains veto power over some potential WUA decisions.

Under legal transfer, the WUA has legal ownership of the assets and in principle, could rent or sell the assets after they receive ownership.

6.7.1 Asset Transfer in the Proposed New Transfer Agreement

In the proposed new Transfer Agreement, Subsection 3.3 clearly states that DOI will retain ownership of the subproject's structures and assets. "The ownership of the physical structures and assets as mentioned in Schedule transferred under this agreement shall remain with the Department."

Later on in the document, however, Subsection 4.1 states that if DOI deems it more useful to transfer the ownership of assets to the WUA, the Department can do this through a separate agreement. In this case, the WUA would have legal transfer and the assets would belong to the WUA. Subsections 4.2 and 4.7 go even further and state that although physical structures and assets may not be sold or mortgaged, if the assets' ownership rights have been transferred to the WUA, the WUA can at least rent out the assets and property, and in principle may be able to sell them.

The intent of these subsections seems to be to ensure that DOI has the ultimate control over and ownership of the assets, but also leaves open the option of future legal transfer to the WUAs, under certain unspecified conditions. This seems to be a reasonable compromise between utility transfer and legal transfer to the WUAs. At some future date, it may be wise to transfer legal ownership of the subproject's assets to the WUA, and this option should be kept open. At present, however, as PTOS strategies in Nepal are in a nascent stage, it is best for DOI to retain ownership.

6 7 2 A Strategy for Rational Asset Transfer

A rational strategy for asset transfer might include four steps

- 1 **Assets ownership, especially heavy equipment, will be retained by DOI for a number of years, at least until the WUA has demonstrated clear and unambiguous responsibility and ability to operate and maintain the assets**
Because of the critical nature of maintaining the equipment in good working order to repair flood damage and canal breaches, DOI should have the ultimate control over the equipment for some time. Utility transfer to the WUA, however, could take place fairly soon after turnover.
2. **No guarantees of ultimate ownership transfer should be given to the WUAs**. That is, the WUA may be happy to continue only utility transfer. Indeed, considering the cost of spare parts for heavy equipment, the WUA may prefer a long-term utility transfer. In any event, ultimate legal ownership transfer should not be a right freely given or guaranteed to the WUAs. Legal transfer should be retained as an option, but not as a promise.
- 3 **Legal transfer of assets could be given quicker to the WUAs if some mutually agreed-upon limit or standard were set in advance**. For instance, DOI could propose legal transfer to the WUAs of any asset under Rs 100,000. If this was acceptable to the WUA, legal transfer could take place very quickly.
- 4 **If the WUA does not properly operate and maintain the equipment, either in utility transfer or legal transfer, DOI should have the option of retaining legal ownership**. If during a critical flood, for instance, the WUA did not respond quickly enough to repair a canal breach, DOI must retain the option of controlling the equipment and conducting repairs. During emergency situations, it is important that competent and responsible staff - whether DOI or WUA - control the equipment.

6 8 Natural Disasters

During natural disasters or natural calamities, subprojects could be greatly damaged. A PTOS package should contain some provision for assisting the WUA during these disasters.

6 8 1 Natural Disasters in the Proposed New Turnover Agreement

The proposed new Turnover Agreement directly addresses PTOS during natural disasters in Subsection 5 1 The subsection states that during a natural calamity, " the Department may make arrangement to avail appropriate amount to the Association through concerned Irrigation Office " The document then says that DOI will assist in maintenance and rehabilitation if there is "people's participation" (i e some contribution from the farmers), and if certain structures and lengths of canals are damaged

This subsection is appropriate, but still slightly confusing Is the "appropriate amount" mentioned (i) actual money (Rs) directly given to the WUA, or (ii) simply technical help and assistance, or (iii) both? These are very different PTOS options, and the subsection might directly mention these differences For PTOS strategies, either option could be appropriate under different conditions

A PTOS package regarding natural disasters should be clear The principle of PTOS in natural disasters is that DOI will help repair a turned over irrigation system under certain conditions, but outright rehabilitation "gifts" to the WUA simply because some members of the WUA complain is not appropriate Under PTOS, DOI will not abandon the WUA during natural disasters, but conversely, DOI should not commit itself to large repair and rehabilitation due to political pressure or overly ambitious farmers

6 8 2 Natural Disasters and WUA's Self-Reliance

Though it is right and appropriate that DOI provide swift assistance to turned over subprojects during natural disasters, a PTOS package must still guard against developing dependency within the WUA It is crucial that DOI resist the temptation of simply releasing a large amount of money to a WUA after a natural disaster A swift response is important, but before any release of funds, DOI should ask the WUA what their contribution will be In the past, funding may have been provided too quickly and too readily, without the necessary step of ensuring the WUA's full participation in disaster relief A proper PTOS strategy will fulfill both criteria (i) quick and proper assistance, and (ii) appropriate assurances from the WUA that they too will provide considerable contributions

7. NEW ROLES OF DOI/HMG AND WUAs TO SUSTAIN PROJECT ACHIEVEMENTS

Irrigation management transfer in Nepal will inevitably demand new roles for DOI/HMG and WUAs Chapter Seven briefly describes these potential new roles

7.1 New Roles for DOI/HMG to Sustain Project Achievements

HMG/DOI owns and operates scores of irrigation systems commanding hundreds of thousands of hectares of irrigated land throughout Nepal The conventional view has been that HMG/DOI should have the responsibility and authority to operate and maintain these irrigations systems Therefore, the traditional roles for DOI/HMG (and IMD/DOI in particular) in irrigation projects in Nepal has been that of project implementor and irrigation system operator

IMTP is implementing a new approach to this traditional pattern of operation Rather than continue government operation of these irrigation systems, the management and control of the systems would be turned over to WUAs Since the farmers have the largest vested interest in the performance of the irrigation systems, IMTP focuses on giving the WUAs the responsibility and authority to manage these large public enterprises

To accomplish this task, and to sustain the achievements that have already been made in IMTP, IMD/DOI needs to take on new roles and responsibilities The primary changes required in IMD/DOI's roles are shown below in **Table 7.1**

**TABLE 7.1
DOI ROLES BEFORE AND AFTER IRRIGATION MANAGEMENT TRANSFER**

DOI Roles <i>Before</i> Management Transfer	DOI Roles <i>After</i> Management Transfer
• Implementor	• Supporter
• Trainer	• Trainer
• Doer	• Guider
• Up Front, "Pulling"	• Advisor
	• Counselor
	• Facilitator
	• Helper
	• Liaison

DOI Roles <i>Before</i> Management Transfer	DOI Roles <i>After</i> Management Transfer
	<ul style="list-style-type: none"> • Stand in Background, Behind the Scenes, "Pushing"

In IMTP, IMD/DOI needs to take on the role of supporter, guider, and advisor of the WUAs, rather than the implementor or the doer of irrigation activities. Rather than operating in the "front" of the Project, in essence pulling the irrigation activities in a certain direction, IMD/DOI now needs to operate more in the background, behind the scenes, pushing and urging the WUAs to operate the irrigation systems.

Under management transfer, IMD/DOI should also operate more as a liaison between the WUAs and outside support services, rather than simply provide the support services themselves. Helping the WUA to contact and work with public and private-sector agricultural support services is a good example of the type of liaison that IMD/DOI could offer the WUAs in IMTP.

IMD/DOI should not change, however, their role as trainer. Both before and after management transfer, IMD/DOI should offer training programs to the WUAs.

There are at least four general guidelines or principles that should be followed in order for IMD/DOI to successfully adapt to these new roles:

- **New roles do not imply that after management transfer WUAs will be abandoned.** Even after management transfer, some degree of government assistance will still be required, including some potential subsidies. The government would still play a role in WUA assistance as trainers, advisors, and counselors.

It is also impractical to think that no mistakes will be made in implementing management transfer. Rather than turn aside from these mistakes, Project implementors should embrace those errors, and make concentrated efforts to correct them, and learn from them. Implementing a new type of development program such as irrigation management transfer calls for a learning process approach, where mistakes are accepted as a part of the learning process, but then immediately corrected. Not directly dealing with the problem may increase the WUA's sense of isolation and feeling that they have been abandoned.

- **DOI should be given time for these new roles to emerge, grow, and mature.** It is unrealistic to think that any organization, including IMD/DOI, will fully embrace and implement these new roles immediately. Adjustment time will be required, that

organizationally could take nine to twelve-months, if not years, to be institutionalized. This period of adjustment should be anticipated.

- **To ensure sustainability, management transfer principles, strategies, procedures, processes, and the new roles should be institutionalized within HMG.** This process will also take time, and IMD/DOI has already taken the lead in this process within DOI. For instance, IMTP Management Transfer Guidelines are now an official and integral part of DOI, and all donor-assisted projects in DOI use the IMTP Management Transfer Guidelines. Likewise, new Irrigation Regulations on management transfer should be institutionalized within Nepal's Irrigation Act.

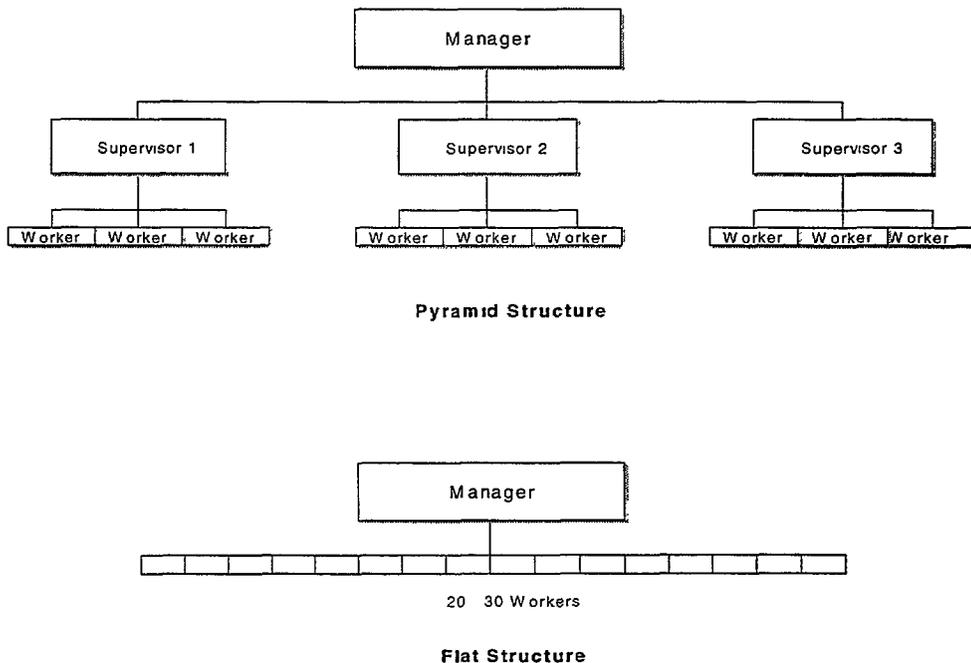
It is important, however, that some degree of flexibility be built into the new management transfer documents and processes that are institutionalized. For instance, the official Management Transfer Guidelines contain procedures for rehabilitation before management transfer. It is very possible, however, that other management transfer projects in Nepal may want to either (i) turnover the system first, then rehabilitate, or (ii) not rehabilitate at all. Institutionalization of management transfer within HMG should allow project implementors the flexibility to try new and progressive approaches to management transfer.

- **To support these new roles, IMD/DOI may wish to consider restructuring and altering some internal management procedures.** Though IMD/DOI has proven to be one of the most innovative divisions within DOI and HMG, there are some structural and management changes that IMD/DOI may wish to consider (Block, 1987).
 - (i) The division may wish to "flatten" itself out. For instance, a typical bureaucratic model contains a series of bureaucratic levels with managers, supervisors, workers, etc. Recent management science, however, postulates that creating a flat organizational structure, rather than a pyramid, allows staff to work on their own internal authority, rather than waiting for a series of approvals before acting. **Figure 7.1** below is a graphic representation of the potential change in organizational structure.
 - (ii) IMD/DOI may also wish to eliminate or minimize administrative boundaries within the bureaucracy. One of the comparative advantages of IMD/DOI is the talent, knowledge, and experience that exists among the staff. Confining that talent and knowledge to one relatively constrained bureaucratic division can isolate those talented staff from other Project activities, thus potentially depriving IMTP of needed talent. Fluid, quick-moving teams with one manager and the ability to create and dissolve their teams quickly should be

created based on the tasks to be completed. Under such an approach, talented staff have an opportunity to use their talents to the fullest capacity, in multiple bureaucratic and technical areas.

- (iii) Self-managing teams should also be considered. The team, not the supervisor or manager, would be responsible for recruiting, scheduling, assignments, and quality control. The supervisor or manager would only be responsible for defining output requirements and ensuring sufficient resources are available to carry out the tasks.
- (iv) Change when a supervisor supervises. Allow the role of the supervisor to be consultative and by invitation only. Consider allowing the subordinates to decide when to involve the supervisor.

**FIGURE 7 1
PYRAMID AND "FLAT" ORGANIZATIONAL STRUCTURES**



7 2 New Roles for WUAs to Sustain Project Achievements

Even if DOI embraces their new roles, the Project's achievements will not be sustainable unless the WUAs also change their roles and management Table 7 2 below outlines the changes in WUA roles that are required to ensure Project sustainability

TABLE 7 2
WUA ROLES BEFORE AND AFTER
IRRIGATION MANAGEMENT TRANSFER

WUA Roles <i>Before</i> Management Transfer	WUA Roles <i>After</i> Management Transfer
• Student	• Manager
• Learner	• Implementor
• Follower	• Doer
• Receiver	• Leader

The biggest role change for the WUA after management transfer is the change from a follower to a manager Under management transfer, the WUAs must manage the entire system, or under joint management, they must manage large parts of the system The WUAs, therefore, must become implementors, doers, and leaders, rather than followers

It is important to note, however, that farmers have always participated in system O&M It is only the question of what type of participation that has been questioned Likewise, farmers have always implemented certain activities in irrigation systems, particularly in rural Nepal Under management transfer, the priority is to organize and prioritize these activities in a more coordinated and coherent whole

In some situations, however, a WUA may not want to take on totally new roles, and may still wish to remain behind the scenes, letting others make the major decisions for the WUAs, even after turnover Management transfer packages must take account of situations such as this

Farmers do not always want to maximize their participation in all ways, and for many good reasons For example, IMT may bring the possibility of future civil liabilities, taxation or financial obligations to rehabilitate the system In situations of partisanship by local factions or elites, farmers may prefer that government remain partly involved to help regulate conflict, guard against abuses by factions or powerful individuals, and audit finances And where

farmers' opportunity costs are high due to other employment options, they may not want to takeover the direct management tasks of the system. In these cases, farmers' desire for participation may be focused on participating in approving basic policies and selecting their leaders (INPIM, April 1998, pg 13)

There are at least four tasks or processes that the WUAs could carry out to ensure that their new roles will sustain project achievements

- **Professionalization of WUA** If the WUAs are to truly become managers of the IMTP subprojects, the WUA needs to be "professionalized". At present, most activities in the subprojects are carried out by farmers on a voluntary basis, with little or no cash exchanged. For instance, for almost all O&M activities, WUAs rely on voluntary labor. Considering the small cash incomes that exist in rural Nepal, this reliance on voluntary labor is understandable.

Sooner rather than later, however, the WUAs in the larger irrigation systems will need a professional O&M Manager, a professional with both technical and "hands-on" experience managing large irrigation systems. This O&M Manager should be hired by the WUA, and should be accountable to the WUA, and should be paid by the WUA. This should be a full-time position, with a salary of perhaps Rs 10,000-20,000/month. To become truly sustainable, the WUAs should seriously consider hiring a professional O&M Manager, rather than relying almost exclusively on part-time, voluntary farmers managing the subproject.

- **WUA financial and administrative autonomy** The IMTP WUAs need to be financially autonomous and self-reliant. Though some government subsidies for post-turnover support will still be necessary, the WUAs will have to focus on becoming more financially independent. They will have to develop a sense of autonomy and belief that their actions are their own choices and that the WUA itself, not outside forces, are in charge of what is happening at the moment. This financial self-sufficiency does not have to be accomplished overnight. It can be a gradual process. The WUA, however, must always be moving towards that financial autonomy.
- **Change WUA dependency on the government assistance to WUA independence from government assistance** For historical, cultural, and political reasons, rural Nepal still depends on HMG for much assistance. Over the past few decades, a sense of dependency has developed among farmers in government irrigation systems that if anything goes wrong, the government should fix it. Under management transfer, this dependency needs to be changed to independence from, or at least a partnership with, the government.

Observers of irrigation management transfer in Nepal have noted that Phase IMTP I WUAs still demand much from DOI, even after turnover. While some of these requests are genuine and should be addressed, some are frivolous and should be ignored. When WUAs make a genuine request for assistance after management transfer, the first question to the WUA should be, "How much can you provide?" Only then should the government decide what assistance to provide. There should not be an automatic, almost knee-jerk response to every request from the WUAs.

Other observers have suggested that the level and type of government help to the WUAs after management transfer should be directly related to the performance of the WUA, e.g. assistance should be related to the WUA's level of ISF collection efficiency. Under this scenario, if a WUA has a high ISF collection efficiency and requests help from the government, the government will consider the request more seriously than if the WUA has a low ISF collection efficiency. Linking government assistance to WUA performance indicators is an idea that should be seriously discussed in IMD/DOI.

- **The WUAs will need time for these new roles to emerge, grow, and mature.** The changes that need to be made in the WUAs after management transfer will not take place overnight. They should be allowed time for the changed roles to develop and be institutionalized.

8. CREATING OPPORTUNITIES FOR WOMEN FARMERS TO FULLY PARTICIPATE IN THE BENEFITS OF MANAGEMENT TRANSFER

Women have been and will continue to be a vital part of IMTP. This chapter examines how the Project can create opportunities for women farmers to fully participate in the benefits of management transfer.

8.1 Background

Throughout rural Asia, creating opportunities for women is crucial to achieving sustainable development. Rural development as a whole cannot be fully realized without increased investments in women and greater attention to their needs, concerns, and contributions. Without involving women directly in development efforts, the potential contribution of half of the population is either unutilized or underutilized, representing an economic loss to the country. Without adequate women's training and access to resources, women's productivity can be severely limited, thus constraining a country's overall economic efficiency and growth. Rural development programs, including IMTP, that actively promote women's participation in the benefits of development have a greater likelihood of success.

Overall, development programs that include measures to expand women's economic opportunities and increase their incomes, or promote improvements in women's health and education, result in greater economic efficiency and decreased levels of poverty (AsDB, 1998, pg. 5).

8.2 Present Status of Women's Development Activities in IMTP

As in much of rural Nepal, women in IMTP subprojects sometimes face barriers to equitable gender participation. These barriers can result from biases in more formal institutions (property rights, labor laws, inheritance laws, etc.), as well as from biases in informal institutions linked to social norms.

The degree of women's access to resources and services within IMTP subprojects varies greatly, depending on the geographic, cultural, and ethnic setting. In the Chitwan District, for instance, there are highly educated and progressive women and families, while 75 kilometers to the west in the southern border regions of Nawalparasi District (West Gandak Subproject), there are areas where women still must wear veils, cannot leave the house, and are influenced by the social and cultural practices of conservative rural India. It is difficult to generalize

regarding the overall status of women in IMTP subprojects because of the wide variation of women's status in different regions, districts, and VDCs (Village Development Committees)

After meeting with many women in IMTP subprojects, Batsa (1998) identified the following constraints to improving women's participation in IMTP

- Illiteracy (low literacy rate in women)
- Women's economic status (poverty)
- Socio-cultural norms
- Lack of users' rights to water resources
- Institutional support is inadequate for women technical staff, financial resources, and information flow
- Perceived lack of commitment at different levels
- Low confidence and little leadership experience
- Household responsibilities and economic insecurity
- Poor access to resources

Not all these constraints can be addressed in IMTP, but some measures can be implemented to help reduce constraints and provide an opportunity to increase women's participation in Project activities

IMTP has made serious efforts to include women in Project activities and benefits. Project implementors have implemented a number of activities targeted to women beneficiaries, including *inter alia*

- A two-person team from USAID/Washington visited IMD/DOI and IMTP subprojects, and produced a report on "Facilitating Meaningful Participation of Women in Irrigation Management in Nepal" (1996)
- IMD/DOI gender specialists made field trips to IMTP subprojects and produced recommendations on how to encourage the participation of women in WUAs and in securing benefits from the Project (1996)
- An international gender specialist conducted a two-month consultancy for IMTP focusing on Gender Awareness and Women's Participation in IMTP Activities (1997)
- A two-day IMTP Gender Awareness Training of Trainers Workshop for IMD/DOI staff was conducted in Kathmandu (1997)
- A one-day program for women in Phase I subprojects was conducted on Roles and Responsibilities of Women in IMTP Activities (1997)

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- A local gender specialist conducted a two-month consultancy for IMTP, including developing a Leadership and Gender Awareness Training Manual, and Skill and Capability Development Training on Mushroom Cultivation (1997-98)
- Project personnel have actively participated in RTDB/IWMI workshops on Gender, Poverty, and Water (1998-99)
- Of the approximately 2,900 participants trained in IMTP in 1998/98, 171 (six percent) were women. While this is still a small figure, it represents a quantum leap from the very low participation of women at the beginning of the Project

Beyond these formal and short-term activities, Project personnel have also actively encouraged the participation of women in routine Project activities, particularly in the Phase I subprojects. Project staff have had scores of informal meetings with women farmers in IMTP subprojects, encouraging and assisting them to participate in project activities, particularly in the Phase I subprojects.

These efforts have paid dividends in the marked increase in the number of women elected to WUA positions in Phase I subprojects. All three Phase I WUAs have amended their constitutions to incorporate more women into their administrative structure. As **Tables 8 1** and **8 2** below show, Panchakanya WUA has 25 percent of its elected positions held by women, West Gandak 13 percent, and Khageri 6 percent. Additionally, the number of women in WUA elected positions has greatly increased since IMTP has been implemented (See **Table 8 2** below). Panchakanya WUA is particularly noteworthy as its male leadership has actively supported women's participation in WUA activities.

TABLE 8 1
WOMEN'S PARTICIPATION IN DIFFERENT
TIERS OF PHASE I WUAs

Panchakanya			
Organizational Level	Men	Women	Total
General Assembly	72	38	110
Main Committee	15	1	16
Outlet Committee	40	10	50
Branch Committee	32	8	40
Sub-Branch Committee	105	30	135
TOTAL	264	87 (25%)	351
Khageri			
Organizational Level	Men	Women	Total
General Assembly	83	5	88
Main Committee	15	0	15
Branch Committee	65	5	70
Sub-Branch Committee	29	3	32
TOTAL	192	13 (6%)	205

TABLE 8 2
WOMEN'S PARTICIPATION AND ELECTIONS
IN WEST GANDAK WUA

Year	Number of Women Elected to WUA Positions	Percent of WUA Positions Held by Women (%)
1993 (1st WUA Election)	4	0.3
1995 (2nd WUA Election)	9	0.8
1998 (3rd WUA Election)	160 (4 on Board of Directors)	13.1

There is also anecdotal data from West Gandak Subproject indicating that women who were once afraid to express their views in WUA meetings are now speaking up and participating more vigorously in WUA affairs than before

Women have also proved their ability to take on irrigation management tasks that are traditionally the purview of men. In MC-3 in the West Gandak Subproject, for instance, a woman is managing the O&M and ISF collections. MC-3 is one of the best performing minor canals in West Gandak, at least partially due to the work of this female manager.

Project personnel have also developed an evolutionary process of ensuring adequate women's representation in IMTP WUAs. Project personnel realized in 1996 that due to local cultural norms it would be impractical to expect a quick increase in women directly elected to positions of authority in IMTP WUAs. Therefore, the Project decided to first emphasize *selection* of women leaders, and later emphasize *election* of women leaders. IMTP farmers agreed to this procedure so that women would gain positions of authority, demonstrate their commitment and competence, and later could be directly elected to WUA positions. This policy seems to have worked reasonably well, as more and more women are being elected to positions.

Although these have been impressive achievements, much work remains to be done. Many problems and issues regarding female participation in Project benefits remain unresolved, including

- Monitoring women's participation in Project activities and benefits is difficult. Only recently have gender-disaggregated data been collected.
- WUA decision-making is still largely an exclusively male activity.
- Gender awareness training has been only a one-time event, with follow-up lacking.
- Quantity of women's participation (e.g. numbers of females participating) has been stressed over the quality and sustainability of participation.
- The number of IMD/DOI female staff in senior positions compared to men is still small.
- HMG qualifications for female field and central-level staff preclude the long-term hiring of IMD/DOI female staff.

It should be noted that IMD/DOI is one of the more progressive government institutions in promoting and including females in project benefits. Some HMG rules, regulations, and

qualifications for government positions, however, can make it difficult for Project staff to actively promote women and women's activities. IMD/DOI must follow HMG provisions and rules, often precluding IMD/DOI's genuine desire and commitment to include more women in Project activities.

8.3 General Strategies to Create More Opportunities for Women to Participate in Project Activities and Benefits

There are a number of general strategies and activities that the Project could implement to create more opportunities for women to participate in Project activities and benefits:

- **Move from a WID (Women in Development) to a GAD (Gender and Development) approach** - The Project should change its emphasis from a WID to a GAD approach. Under the traditional WID approach, the Project focused exclusively on women, and implied that the problem, and therefore the solution, could be confined to women. The WID approach also focused on women in isolation from the rest of their lives and from their relations to their larger society.

In the GAD approach, the emphasis would be widened to view women as active participants and agents of development as a whole, as opposed to the WID approach, which perceived women simply as passive recipients of development. While WID focused exclusively on women to improve women's unequal positions, GAD recognizes that increasing women's participation in benefits requires including relations between men and women in development efforts, and the concurrence and cooperation of men. GAD, in other words, sees gender as a cross-cutting issue, with relevance to all aspects of IMTP activities.

A GAD approach in IMTP also implies gender mainstreaming to address women's concerns more holistically. It will require gender planning in all IMTP development operations, not just in activities specifically targeted to women. (See AsDB, 1998 for a more comprehensive description of WID versus GAD.)

- **Operationalize HMG's Ninth Five-Year Plan (improved socio-economic status of women) and DOI's Irrigation Policy Regarding Gender Issues** - As an HMG Project, IMTP has the obligation to operationalize HMG's Ninth-Five Year Plan which explicitly supports women's participation in the benefits of development.

Likewise, DOI policy states, "Necessary emphasis shall be given to the provision that there shall be at least twenty percent users in all the executive units of the WUA."

This DOI policy has sometimes been interpreted to mean that 20 percent of the WUA members should be female, as opposed to 20 percent of the executive positions within the WUA should be held by females. The Project stresses the 20 percent selection or election of women to positions within the WUA, rather than 20 percent of WUA members as females.

- **Strengthen IMD/DOI's institutional capacity to implement a GAD approach** - A generic issue faced by many government agencies in Nepal is that creating opportunities for female participation within Projects sometimes assumes institutional capacity that does exist. IMD/DOI's gender and development capacity needs to be strengthened. The Project should help to build and strengthen the gender capacity of IMD/DOI so that they can adequately address gender equity issues in Project planning and implementation. Building up the institutional capacity of IMD/DOI to carry out HMG and DOI policies also requires a Project design that addresses the difficulties in recruitment and retention of female staff.
- **Increased training for IMD/DOI staff and women in IMTP subprojects** - Training women in IMTP will not only benefit the individual woman, but the entire Project. A better trained woman will have greater access to educational opportunities, and better income-earning prospects. Investing in the training of IMTP women would not only result in positive returns to the women themselves, but the return to the Project as a whole would be even larger and would last longer.
- **Gather gender-disaggregated data in IMTP M&E systems** - Access to comprehensive and current gender-disaggregated data will help IMTP development planning and monitoring. Such data can convincingly and clearly demonstrate IMTP gender issues that need to be addressed.
- **Focus IMTP/GAD activities on increasing opportunities and options for women** - IMTP/GAD activities should not pressure women to develop outside interests and become involved in Project activities. Such an effort would ultimately harm the Project. Rather, IMTP should offer opportunities and choice to women, and then allow those women to decide for themselves if they choose to take advantage of those opportunities. Women who freely choose to "remain in the house" should not be pressured to take on new roles that would be uncomfortable for them. Creating choice and options for women, not coercing women, should be the emphasis of IMTP.

In addition to the general strategies noted above, there are also at least two "don'ts" that should be mentioned

- **Focus on GAD, but be careful of over-use of the terms "gender awareness" or "gender sensitivity" in IMTP** - Project implementors are well aware of gender issues in IMTP. They are genuinely committed to gender and development, but face many institutional hurdles to effectively implement a GAD program. Further workshops or seminars that focus on gender sensitivity or awareness, may not be totally effective.
- **Be careful of over-use of the term "women's empowerment" in IMTP** - The word "empowerment" has unfortunately taken on negative connotations within some sectors of HMG. Some Project staff in HMG offices may resent messages that IMTP wishes to empower women. It may be more prudent and practical to mention how IMTP wishes women to participate more fully in Project decision-making, and also wishes to provide economic opportunities for women. These are less politically and culturally-charged terms, and may be more acceptable within HMG.

8.4 Specific Strategies to Create Opportunities for Women Farmers to Fully Participate in Project Activities and Benefits

In addition to the more general strategies outlined above, there are some specific steps that the Project could take that would help create opportunities for women's full participation in Project activities

- **Prepare an IMTP Gender and Development Implementation Strategy and Action Plan** - Such a strategy and plan would give IMTP a road-map to improve women's participation in the Project. What is critical is that IMD/DOI fully participate in the preparation of this strategy. Otherwise, the strategy may be seen as an outsider's view of what needs to be done, rather than what Project implementors feel needs to be done.
- **Officially designate one or two IMD/DOI staff (preferably one male and one female) to implement HMG and DOI's gender policy**. These staff should also be given the resources to implement the policy effectively.
- **Focus on Project activities that generate impacts and benefits for women**. A GAD strategy for IMTP does not preclude Project activities targeted specifically to women. GAD simply means that gender issues should be cross-cutting throughout all Project activities. IMTP could implement a GAD approach and still include activities such as

small income-generating programs for women, IMTP information and orientation programs for women in Phase II subprojects, etc

Some IMTP implementors, however, have made the valid point that IMTP should not become involved in women's activities outside IMD/DOI's areas of expertise, i.e. institutional and physical aspects of irrigation management. These implementors, therefore, would not recommend small income-generating activities for women. This issue needs further discussion within the Project.

- **Maintain gender-disaggregated data on Project activities** The axiom, "What gets measured, gets done" could be applied here. The Project has begun to monitor gender-disaggregated data, and these activities need to be continued and expanded.
- **Continue the select/elect policy regarding women in WUA offices in Phase II subprojects** If the Project follows DOI's policy on women (20 percent of WUA officers should be women, rather than 20 percent of WUA members are women), it is likely that some combination of selection and election of women members will still be required, at least initially. For day-to-day implementation, the Project should encourage women to become involved in WUA design, formation, and planning, and ultimately become full-fledged WUA members. To that end, the WUA's constitution should stipulate that WUA membership is based on the name of the household, rather than the name of an individual, usually the male.
- **Explicitly include women in SMCs, and in AP/MOA decision-making** One of the most critical tasks in IMTP is the rehabilitation of irrigation systems. The SMCs work closely with IMTP subproject manager in designing and implementing the agreements in the AP/MOAs regarding rehabilitation. Women should play a role in that very important decision-making process.
- **At the field level, continue and expand the IMTP orientation programs targeted to women** These programs were started in the Phase I subprojects and should be continued in the Phase II subprojects. The programs proved to be very popular, as long as they were backed up with concrete action after the orientation programs. Reports of the impact of these training programs were very positive.

Impact and implication of training was very motivating and useful. The women trained started motivating other women to participate in WUA meetings. They created a kind of sensation in their villages about the management aspects of irrigation and its need. They diffused the ideas of women's involvement and participation (Nepalconsult and Hydro Engineering Services, 1996, pg. IV-12)

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- **Work closely with IMD/DOI to implement some of the key recommendations of the November 1999 IWMI/RTDB study on Gender, Poverty, and Water** In November 1999, IWMI/RTDB will present the findings of their one-year study on women and irrigation in rural Nepal. Much of the study took place in IMTP's West Gandak Subproject, and many of their findings and recommendations should be highly relevant to an IMTP GAD program.
- **Consider re-instituting the "leader women" or "key women" approach in Phase II subprojects** Previous IMTP consultancies (CADI, December 1997, Batsa, March 1998) have advocated that leader women or key women be identified, trained, and motivated to encourage other women to participate in Project activities and decision-making. Using leader women may have to be modified somewhat if a GAD approach is used, but the concept of using women to motivate and train women is still valid.
- **Develop and implement a plan of action that roughly follows the proposed IMD/DOI training manual on Women's Participation in Irrigation Management** In 1999 Project staff developed an outline for a training manual on women's involvement in IMTP. The outline contains a number of key points that could be useful in creating opportunities for women to participate in IMTP's benefits. The plan of action should consider roughly following in the steps outlined below in **Table 8.3**

TABLE 8 3
DRAFT OUTLINE OF TRAINING MANUAL ON IMPLEMENTING WOMEN'S
PARTICIPATION IN IMTP
(Submitted to IMD/DOI in February 1999)

I	Initial Strategies
A	Institutional, Structural, and Management Strategies for Women's Participation in WUAs <ul style="list-style-type: none">• WUA Constitution<ul style="list-style-type: none">- Membership by Individual or Household- Selection of Leader Women• Women's Participation in WUA Activities and Decision-Making
B	Leader Women in WUAs <ul style="list-style-type: none">• Key Contact Women• Cultivating Leader Women
II	Roles and Responsibilities of Leader Women in WUAs Field Activities <ul style="list-style-type: none">• Initiate Income Generation Activities<ul style="list-style-type: none">- Agriculture, Cash Crops- Costs of Agriculture- Others (Goats, Mushroom Production, etc)• WUA Design and Organization<ul style="list-style-type: none">- Help Amend Constitution- Membership by Household- Selection/Election of Women WUA Officers• Develop and Implement Training Packages for Women
III	Women in IMD/DOI
A	Recruiting Women for IMD Staff Positions
B	Developing Women's Participation Task Force Within IMD
C	Developing and Implementing GAD Training Programs in IMD/DOI

Finally, there are three more subjective strategies or tactics that could maximize the chances of successfully implementing women's participation strategies

- **How a GAD implementor approaches Project staff to operationalize these strategies is very important** Institutionalizing GAD programs within IMTP may not be successful if a confrontational or "lecture" mode is used. A better approach may be to first ask Project staff what they think should be done to create opportunities for women to fully participate in the benefits of IMTP. Project staff do have concrete ideas and a vision of what should and could be done, and their preferences and

experiences should be explicitly considered when designing and implementing a women's development program. If politics is defined as "the art of the possible", GAD in IMTP may be defined in the same way.

- **Do not expect rapid progress in a short period of time** All of the strategies mentioned above cannot be accomplished overnight. It will take time, and patience, to implement some of these programs in IMTP. It is important to take the longer perspective in this implementation process, and focus on what can be accomplished in three years, not in just three months.
- **GAD implementors should not imply that the current state of women's status in Nepal is a result of uncaring or insensitive males** Male Project staff realize that change is inevitable, and welcome change in women's status that will contribute to overall economic development. Male Project staff will also accept those components of women's development that they feel do not shatter Nepalese customs and traditions that have proved useful for the Nepalese family. If GAD implementors imply that Nepalese males are uncaring, insensitive, and/or ignorant of women's rights, however, those male HMG staff may withdraw their support of changes that even they accept and are willing to support.

9. LESSONS LEARNED FROM IMTP

Based on the first 3 5 years of USAID/Nepal's assistance to IMTP, a number of lessons have been learned regarding irrigation management transfer in Nepal

9 1 Rehabilitation

No 1 Linking institutional and physical milestones helps Project implementation

The phasing of IMTP rehabilitation works is tied to IMTP institutional progress. This has proved to be a useful procedure as it links physical and institutional activities, and allows these two components to support one another.

No 2 The innovations introduced in IMTP (Joint System Walk-Through, Subproject Management Committees, AP/MOAs, etc) have contributed positively to the Project

IMTP rehabilitation innovations have made the Project more responsive to local needs and concerns. Farmers and local subproject managers have worked together to identify the areas needing rehabilitation, and have then planned and implemented the rehabilitation works based on a priority of needs. While not without difficulties and frustrations, the innovations have proven their worth.

No 3 IMTP's rehabilitation processes take time Don't rush

To meet Project deadlines, rehabilitation activities have sometimes been hurried or rushed. At times, this has led to lower standards of quality, cutting corners, and in the long-run, rehabilitation that is not fully accepted by farmers. While recognizing that the Project needs to avoid rehabilitation delays as much as possible, thus prompting "hurry-up" efforts, it is still true that rushing rehabilitation processes and activities usually ends up costing more time and money in the long-run.

**No 4 Quality of rehabilitation is very important to break the cycle of rehabilitation
- decline - rehabilitation - decline**

Nothing is as important in IMTP rehabilitation efforts as ensuring that quality rehabilitation is implemented. In some Phase I subprojects, quality was not emphasized as much as it should have been, sometimes leading to misunderstandings with WUAs. Quality of the construction needs to be emphasized more than the speed of rehabilitation.

9.2 Operation and Maintenance

No 5 WUAs can perform quality O&M, but they need assistance, particularly after turnover

WUAs in the Phase I subprojects have proven that they can be good O&M managers, but at least for the first few years after they assume the O&M responsibility and authority, they still need assistance. The level, type, and frequency of assistance can vary greatly, but some degree of assistance is still required. The Project should recognize this reality, and plan and budget for it.

No 6 Good O&M is linked to strong WUAs

There is a direct relationship between the strength of the WUA and the quality of O&M services provided by the WUA. Although physical characteristics of the subproject (e.g. water availability, soils, water-logging, propensity for flooding, etc.) obviously play a part in determining the type of O&M service required, a consistent theme in IMTP has been the direct linkage between institutional strength and quality of O&M.

No 7 The WUAs' s Canal Management Workforces (CMWF) have proved to be a workable concept, though "volunteerism" may not sustain O&M over the long-run

WUAs' CMWFs have proved to be a useful innovation in IMTP. Local farmers are trained in the technical aspects of system O&M, and then administratively they become a part of the WUA's CMWF. This is irrigation management transfer at its best. Most CMWF members, however, still contribute their time and labor voluntarily, rather than being paid. This strategy may not be tenable over the long-run. It is likely that some CMWF members will have to be "professionalized" over the long-run.

No 8 O&M training for WUAs is essential

Although IMTP farmers certainly know the O&M requirements of their local area, they do not necessarily know how to operate and maintain an entire irrigation system. More training is likely required to keep the WUAs up-to-date in their O&M activities.

No 9 The WUAs need to develop realistic O&M budgets and ISF programs

Realistic O&M budgets are very important in IMTP. WUAs need to know how much it will cost to properly operate and maintain their irrigation systems. Developing accurate O&M budgets will take time to learn, as management transfer is a new experience for the WUAs. Nevertheless, IMTP needs to work closely with the WUAs to help them develop their own O&M budgets, and then base their ISF rate on meeting those O&M costs. ISF and other fee collections need to be based on actual O&M costs to ensure long-term system sustainability.

9 3 Institutional Activities

No 10 WUA development is an evolutionary process, not a one-time event

It will require time and diligence to fully develop the WUA capabilities. Quick institutional development success stories may be rare. It is a lengthy, step-by-step process that IMTP implementors must be prepared to undertake. As new lessons are learned, new procedures should be developed and implemented.

No 11 IMTP needs to focus on the development of local institutions as much as it focuses on statistical achievements

Though statistical achievements are important indicators of the Project's progress (e.g., WUA membership, ISF collection efficiency, etc.), development of local institutions (e.g., WUAs, women's groups, agricultural linkages, etc.) could prove more beneficial in the long run. For instance, a strong WUA may initially have a low ISF collection efficiency of 20 percent, but the potential to increase it to 80 percent later. A weak WUA may initially have 80 percent ISF collection efficiency due to preliminary enthusiasm for management transfer, but then see the percentage drop to 20 if the WUA cannot be sustained. Development of local institutions is a key to long-term sustainability of IMTP.

No 12 Long-term WUA financial viability and self-sufficiency needs to be stressed

If irrigation management transfer is truly to succeed in Nepal, the WUAs will need to be financially viable. They must have the human and monetary resources to successfully manage their own irrigation subproject. This will require adequate fee collections, disbursements, financial records, and accounting.

No 13 The WUA formation process seems to be working adequately

While not perfect, and always in need of some revision, the IMTP WUA formation process seems to have worked reasonably well. Considering IMTP's funding and personnel constraints, and the great distances and large areas that have to be covered, IMTP's WUA formation and registration process has proven its worth. If there is a criticism of this process, it may focus on the sometimes overly-rapid community development processes used.

No 14 The WUA organizational design and structure in large subprojects is sometimes too cumbersome and complicated

In an effort to promote grass-roots democracy and to allow the WUA to penetrate to the lowest reaches of large irrigation systems, IMTP implementors have sometimes worked with farmers to construct an overly-complicated and sometimes cumbersome WUA organizational design. There are too many "chiefs" in many IMTP WUAs, at every organizational level, and not enough professional WUA managers managing overall subproject activities. The desire and philosophy to organize all levels of the WUA is admirable, but perhaps not entirely practical considering time, funding, and personnel available.

No 15 Involving women in Project activities and benefits will not occur unless Project implementors make an explicit effort to include women

Though IMTP implementors are some of the most progressive and enlightened personnel in Nepal, local customs in rural Nepal often hinder more effective women involvement. Only by specifically and explicitly focusing on women in all Project activities will women fully participate in Project benefits. By making gender issues a cross-cutting activity in all Project efforts, women could benefit more from IMTP.

9 4 Post-Turnover Support

No 16 Post-turnover support to IMTP WUAs is far more critical than originally thought

If there is one overall lesson learned in IMTP Phase I, it is that after turnover, WUAs will still require some degree of support. During Project design in the early and mid-1990s, IMTP was designed with three general steps: (i) initial organization, (ii) management transfer preparation, and (iii) management transfer implementation. It was only in 1998 that key IMD/DOI staff correctly pointed out that a fourth step must be added - post turnover support. Without the right type of post-turnover support, some the IMTP WUAs may not be sustainable.

10. RECOMMENDATIONS FOR IMTP

Based on the first 3 5 years of IMTP implementation, there are a number of recommendations that could be made for future Project implementation

10 1 Rehabilitation

No 1 Rehabilitation should stress ease of operation for WUAs
--

Engineering designs can be simple or complicated, geared to DOI staff or to WUAs operating irrigation systems. In IMTP, engineering designs for rehabilitation should facilitate water delivery service and easy operation by the WUAs
--

No 2 Follow and implement what is written and mutually agreed to in the AP/MOAs

Both Project implementors and WUAs should use the AP/MOAs as "living documents", that both parties honor. AP/MOAs should be implemented fully, properly, and on-time. What is written in the AP/MOAs should be followed. SMCs should be involved in the AP/MOA preparation, decision-making, implementation, and monitoring activities
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No 3 Continually involve SMCs and the WUA in rehabilitation decision-making and implementation. Keep them actively informed of progress

As farmers are contributing towards the cost of the rehabilitation, they have a right, as well as a duty, to be involved and kept informed about rehabilitation progress. Involving and informing the WUAs requires specific efforts on the part of the local subproject managers. Though time-consuming, these efforts will usually lead to fewer problems after the rehabilitation is complete
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No 4 Transparency of program, budget, and expenditures should be emphasized

IMTP's rehabilitation program budget, and expenditures should be transparent, especially when they directly involve the WUAs. Without this transparency, WUA support for the program could rapidly disintegrate. The advantage of transparency in IMTP rehabilitation is that it protects all parties - HMG, the WUAs, the contractors, etc. All parties will be able to cross-check budgets and expenditures. Some Project implementors have even suggested the idea that rehabilitation funds should be placed in a joint WUA-DOI account, so both parties would have responsibility for financial activities.

No 5 Allow WUAs to be paid for work they do beyond their 26 percent "farmers' participation"

Some Phase II WUAs have requested that after they have contributed their 26 percent towards IMTP rehabilitation, they would like to be paid for IMTP rehabilitation work they contribute beyond the 26 percent. WUAs have estimated that they could contribute up to approximately 32 percent of total rehabilitation costs. Twenty-six percent would be their voluntary labor, and 6 percent they would like to be paid for. This idea should be seriously considered, particularly since it originated from the WUAs.

No 6 Actively involve women in SMCs and in rehabilitation decision-making

Budget-wise, rehabilitation is the largest component of IMTP. For this reason, and to ensure they have a voice in IMTP, it is critical that women be actively involved in rehabilitation processes. The most effective way to ensure their participation in rehabilitation decision-making is to have female representation in the SMCs. IMTP should provide a forum for women's concerns and needs in the rehabilitation process.

No 7 Rehabilitation and WUA institutional development efforts should be linked and support one another

IMTP rehabilitation is a stimulus to the WUAs and should improve system management. The rehabilitation program, however, should not stand on its own. It is important that the institutional development of WUAs and system rehabilitation proceed in an integrated manner, not separately. The physical rehabilitation program should not take on a life of its own, separate from IMTP goals and objectives. WUAs and subproject managers need to be fully informed about this unique role of rehabilitation in IMTP.

10.2 Operation and Maintenance

No 8 Continue assistance to CMWFs

The WUAs' CMWFs are the heart and backbone of O&M in turned over irrigation systems. They will largely determine if O&M improves or deteriorates in IMTP subprojects after turnover. Therefore, Project personnel must ensure that the CMWFs are well-trained and motivated, and their performance should be monitored to judge their competence and commitment.

No 9 Assist WUAs in O&M record-keeping and water measurement

Although many WUAs (and CMWFs) are adept at O&M, some of these same WUAs have yet to make it a habit to maintain accurate records of O&M activities, including water flows in the canals. It is crucial that such records be kept and WUAs should receive training and assistance in this record-keeping.

10.3 Institutional Activities

No 10 The "professionalization" of IMTP WUAs needs to begin

There is a tradition of voluntary labor throughout rural Nepal, primarily because of poverty and the lack of an extensive cash economy. Despite this constraint, the IMTP WUAs need to slowly but surely move towards hiring one or two full-time professional staff (e.g. WUA O&M Manager, WUA Office Manager, etc.), and paying salaries in cash. It is important that the WUAs move from an admirable sense of volunteerism to a professional organization with full-time, technical, salaried staff.

No 11 ISF collections need a better rationale and better training

At present, many WUAs are collecting ISF, but they don't know precisely how to manage or what to do with the fees collected. The entire ISF process needs to be "rationalized." WUAs need to link their ISF rate to their O&M needs and budgets, including salaried staff. Much of the ISF program in IMTP is "by rote", and simply copies what other subprojects are doing. While this strategy can initially establish an ISF program, it is not a sustainable option. Each WUA should be trained in how to budget for ISF, how to make collections, how to deposit and record the collections, and how to properly spend the money collected.

No 12 Ensure women are involved in all IMTP activities

Women should be included in all IMTP activities, not just stand-alone Project activities for women. Women's activities should be cross-cutting throughout the Project. WUA training programs, for instance, should always include women as a matter of course, not just for women's training programs.

No 13 Simplify WUA organizational structure

The organizational structure of some IMTP WUAs, particularly in the larger subprojects, may be overly complex, with too many layers of bureaucracy. IMTP should stress leaner WUAs and help identify key leaders and managers to lead the WUAs, rather than pushing the WUA organizational structure to every hectare in every IMTP subproject.

10 4 Post-Turnover Support

No 14 Focus more effort and resources in post-turnover support

No WUA after turnover should feel abandoned Post-turnover support should be provided to every WUA Government budgets need to be gradually reduced in IMTP subprojects over a period of years, but not reduced to zero overnight Despite genuine constraints in budget, personnel, and equipment, post-turnover support in IMTP needs to be pursued more vigorously

10 5 Program Planning and Implementation

No 15 Design and plan IMTP programs in the field

Many of the issues that IMTP presently confronts could be effectively managed if IMTP activities were planned and designed at the field level With two IMTP field offices in Janakpur and Dhangadi (and a sub-office still available for use in Chitwan), planning at the field level is relatively easy For instance, it may be better if IMTP training programs were designed and planned at the field level, closer to the WUAs and the subproject managers Programs then may be more relevant to the WUAs and each subproject

No 16 Focus IMTP planning on targets, goals, outputs, and ends, rather than on means or inputs

IMTP planning should focus on specific targets and goals, rather than on the means or inputs For instance, a specific target, goal, or output for IMTP might be that three AP/MOAs will be complete and signed by July 2000 How IMTP implementors achieve that target should be the decision of the implementors The implementors should be given the flexibility and tools to reach that target (e g three AP/MOAs signed) and then the implementors should be allowed to use whatever means or inputs they see fit - training, orientation, talk programs, walk-throughs, - to achieve that target Focusing on the ends or outputs, rather than the means or inputs, may greatly assist program implementation

11. CONCLUSION

IMTP has introduced a number of important innovations in HMG and rural Nepal, e.g. management transfer (privatization) of large public enterprises, grassroots democracy at the village level, decentralization of decision-making, etc. Perhaps most importantly, the WUAs in the Phase I and II subprojects have made significant strides in taking over the management of the IMTP subprojects. The Project has not only introduced these innovations, but has also achieved some degree of success in implementing and managing these innovations.

The Project, however, needs continued support from HMG, AsDB, and USAID. There are still 2.5 years before Project closure (June 2002). Post-turnover support is required in the three Phase I subprojects, and the WUAs in the eight Phase II subprojects will need assistance as turnover activities progress in the next 2.5 years. Only three of the eleven IMTP irrigation systems have been transferred, eight more remain. Key issues in management transfer still need to be addressed, including

- Adequate resource generation at the local level
- Site-specific post-turnover support activities
- Developing proper roles for the WUAs in business enterprises beyond irrigation

It is important that the Project be allowed to succeed by continuing support to IMD/DOI and the WUAs in all eleven Phase I and II subprojects.

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ANNEX A

OVERALL RESULTS AND ACHIEVEMENTS OF IMTP (May 30, 1996 - November 20, 1999)

**ANNEX A.1
RESULTS AND INDICATORS THAT HELP TO DEFINE IMTP SUCCESS:
PHASE I SUBPROJECTS**

(November 1999)

Result Number 1 Formal WUAs Exist

Result	Indicators	Present Status (November 1999)		
		West Gandak	Khageri	Panchakanya
Formal WUA Exists	1 1 Registration Certificate & Renewal Registration	WUA Registration in Nawalparasi District Office on 2050/3/15 (June 29, 1993) & renewed two times	WUA Registration in Chitwan District Office on 2050/10/10 (January 20, 1994) & renewed three times	WUA Registration in Chitwan District Office on 2050/2/16 (March 28, 1995) & renewed two times
	1 1 1 Audit	Conducted two times (May/June 1996 and 1998) by private and HMG auditors Audit presently on-going for 1999/2000 Audit focus on WUA s - Income - Expenditures	Conducted three times (May/June 1996, 1997 and 1998) by private auditors audit presently on-going for 1999/2000 Audit focus on WUA s - Income - Expenditures	Conducted two times (May/June 1996 and 1998) by Private Auditors Audit presently on-going for 1999/2000 Audit focus on WUA's - Income - Expenditures
	1 1 2 Elections	WUA General Elections conducted three times 2050 (1993) 2052 (1995) 2055 (May 1998)	WUA General Elections conducted three times 2050 (1993) 2052 (1995) 2055 (March 1999)	WUA General Elections conducted three times 2050 (1993) 2052 (1995) 2055 (October 1999)
	1 1 3 Constitution	WUA has a formal, ratified constitution	WUA has a formal, ratified constitution	WUA has a formal, ratified constitution

Annex A Overall IMTP Results

Result	Indicators	Present Status (November 1999)		
		West Gandak	Khageri	Panchakanya
1 2	Physical Office			
	1 2 1 Staffing and Positions	<ul style="list-style-type: none"> Eleven paid staff 1 Office Secretary (Rs 2500/month) - 1 Executive manager (Rs 1000/month) - 4 Branch Chiefs (Rs 3000/month) - 5 CMWF* (total of Rs 3500/month) 	<ul style="list-style-type: none"> Six staff (one paid, five volunteers) - 1 Office Secretary (Rs 2000/month) 5 CMWF (volunteer) 	<ul style="list-style-type: none"> Two paid staffs - 1 Office Secretary (Rs 1800/month) - CMWF (Rs 1500/month)
	1 2 2 Record Keeping	<ul style="list-style-type: none"> - Income/Expenditures - ISF Collections Share/Membership - Discharge & Water Distribution Inventory of User/Labor Mobilization 	<ul style="list-style-type: none"> Income/Expenditures - ISF Collections - Share/Membership - Discharge & Water Distribution - Inventory of User/Labor Mobilization 	<ul style="list-style-type: none"> - Income/Expenditures - ISF Collections Share/Membership Discharge & Water Distribution - Inventory of User/Labor Mobilization
	1 3 Rules & Procedures Established	<ul style="list-style-type: none"> Formal Rules Published - Canal Operation - Canal Maintenance - Resource Collection - Water Distribution - Election Rules - Financial Rules ISF Collection/Share Distribution - Roles of CMWF 	<ul style="list-style-type: none"> - Canal Operation (Preliminary) - Resource Collection - Water Distribution (Preliminary) - Election Rules - ISF Collection/Share Distribution - Roles of CMWF General Membership Distribution 	<ul style="list-style-type: none"> - Canal Operations - Canal Maintenance Resource Collection/Labor Mobilization - Water Distribution - Election Rules - General Membership Distribution ISF Collection/Share Distribution - Roles of CMWF

Result Number 2 WUA is Operating the Canals

Result	Indicators	Present Status (November 1999)		
		West Gandak	Khageri	Panchakanya
WUA is Operating Canals	2 1 CMWF* Exists and Functions	Formal CMWF exists	Formal CMWF exists	Formal CMWF exists
	2 1 1 CMWF is Operating Canals	<ul style="list-style-type: none"> - CMWF operating West Gandak main canal <ul style="list-style-type: none"> Head regulator of BC/Minor & MCs Cross regulator - Escape gates - CMWF operating West Gandak branch canals <ul style="list-style-type: none"> Head regulator of Minor & MFDs - Cross regulator - CMWF operating West Gandak tertiary canals <ul style="list-style-type: none"> - Outlet gates of MFDs 	<ul style="list-style-type: none"> - CMWF operating Khageri main canal <ul style="list-style-type: none"> - Head regulator of BC/Minor & Outlets - Cross regulator - Escape gates 	<ul style="list-style-type: none"> - CMWF operating Panchakanya main canal and branch canals <ul style="list-style-type: none"> - Head regulator of BC/Outlets - Cross regulator - Escape gates
	2 1 2 Farmers are Aware of CMWF	Approximately 70-90% farmers know CMWF (according to WUA members)	Approximately 70-90% farmers know CMWF (according to WUA members)	Approximately 70-90% farmers know CMWF (according to WUA members)

* Canal Management Workforce

Annex A Overall IMTP Results

Result	Indicators	Present Status (November 1999)		
		West Gandak	Khageri	Panchakanya
	2.2 Area Irrigated			
	2.2.1 Wet Season	7,082 ha (IMD/DOI Semi-Annual Progress Report July 1999)	3,100 ha (IMD/DOI Semi-Annual Progress Report, July 1999)	334 ha (WUA's record up to August 23, 1999 Only includes ISF area Actual irrigated area is estimated at 450-500 ha)
	2.2.2 Dry Season	4,500 ha (IMD/DOI Semi Annual Progress Report, July 1999)	2,846 ha (IMD/DOI Semi-Annual Progress Report, July 1999)	120 ha (WUA's record up to August 23, 1999 Only includes ISF area Actual irrigated area is estimated at 250-300 ha)
	2.3 WUA Canal Operation Plan Exists and Functions	WUA Formal Canal Operation Plan exists and is operational - 1 main canal-level plan - Rotational schedule 3 branch canal level plans Continuous/rotational schedule - 19 distributary/level plans Continuous/rotational schedule 174 MC & MFD level plans - Continuous schedule	WUA preliminary Canal Operation Plan exists and is operational - Main Canal-level Weekly schedule - Section schedule - Continuous schedule	WUA Formal Canal Operation Plan exists and is operational for main canal - Main canal level - Two block rotation schedule in wet season - Three block rotation schedule in dry season

Annex A Overall IMTP Results

Result	Indicators	Present Status (November 1999)		
		West Gandak	Khageri	Panchakanya
	2 3 1 WUA Water Delivery Records	WUA water delivery records held by West Gandak CMWF - Head regulator - Level of water at source - Discharge record - Gauge reading in main canal intake - Main canal - Discharge record at intake - Water delivery record at BC - Branch canal	WUA water delivery record held by Khageri CMWF - Head regulator - Discharge record - Gauge reading - Main canal - Discharge record at intake - Water delivery record at BC	WUA water delivery record held by Panchakanya CMWF - Head regulator - Discharge record - Gauge reading - Main canal - Discharge record at intake - Water delivery record at BC

Result	Indicators	Present Status (November 1999)		
		West Gandak	Khageri	Panchakanya
	2 3 2 CMWF Follows Distribution Schedule	<p>West Gandak CMWF implements continuous/seasonal/rotational distribution (two blocks)</p> <p>Wet season Rotation/continuous in main branch and distributary canals</p> <p>- Dry season</p> <ul style="list-style-type: none"> - Seasonal rotational in two blocks - One block from head to MC 11 - One block from MC 11 to MC 26 	<p>Khageri CMWF implements weekly/section distribution (two blocks)</p> <p>- Wet season</p> <ul style="list-style-type: none"> - If the water level at 1 35m in main canal then weekly rotation used in three sections <ul style="list-style-type: none"> One week Geetanagar section One week Shivanagar section One week Mangalpur section - If the water level is not at 1 35m in the main canal then alternative rotational rules used in sections <ul style="list-style-type: none"> - One section from head to BC3 for four days One section from BC4 to BC7 for six days One section from BC8 to minor 4 for five days <p>Dry season</p> <ul style="list-style-type: none"> - Continuous for BC No 0+1 and 2 	<p>Panchakanya CMWF implements rotational distribution (two blocks)</p> <p>a Wet season</p> <ul style="list-style-type: none"> - Rotation in two blocks <ul style="list-style-type: none"> - One block from head to BC No 3 One block from BC No 4 to tail <p>b Dry season</p> <p>Rotation in three blocks</p> <ul style="list-style-type: none"> - One block from head to BC No 2 - One block from BC No 3 to 8 - One block from BC No 8 to tail

Result Number 3 WUA is Maintaining the Canals

Result	Indicators	Present Status (November 1999)		
		West Gandak	Khageri	Panchakanya
WUA is Operating Canals	3 1 WUA Conducts Maintenance needs Assessment	Conducted by West Gandak CMWF & WUA committee	Conducted by Khageri CMWF & WUA committee	Conducted by Panchakanya CMWF & WUA committee
	3 1 1 Joint System Walkthrough	Seven West Gandak WUA staff conduct annual walkthroughs - 1 WUA Executive Manager 1 WUA Technical Branch Chief - 5 CMWF Members - Rainy season (July - August) to identify flood damage - Dry season (January - February) for the maintenance of canal, outlet gates desilting & canal structures	Five CMWF members conduct annual walkthroughs - Rainy season (July - August) to identify flood damage - Dry season (January - February) for the maintenance of canal, outlet gates, desilting & canal structures	Four WUA and CMWF staff conduct annual walkthroughs - 1 WUA Chairman - 1 WUA Secretary - 1 CMWF Member - 1 Branch Chairman - Rainy season (July - August) for canal maintenance - Dry season (January - February) for the maintenance of canal, outlet gates, desilting & canal structures
	3 1 2 Prioritization of Work	Prioritization based on - Desilting work - Canal structures - Regulator/outlet gate maintenance - Flood damage	Prioritization based on - Desilting work - Canal structures - Regulator/outlet gate maintenance - Flood damage	Prioritization based on - Desilting work - Canal structures - Regulator/outlet gate maintenance Underground hume pipe maintenance - Branch maintenance

Annex A Overall IMTP Results

Result	Indicators	Present Status (November 1999)		
		West Gandak	Khageri	Panchakanya
	<p>3 2 WUA Maintenance Plan Exists</p> <p>3 2 1 Mechanical Gates are Operational</p> <p>3 2 2 Canal Capacity Maintained</p>	<p>WUA reports 22 of 36 gates are operational</p> <p>Yes full discharge</p>	<p>WUA reports 8 branch and 4 minor gates are operational</p> <p>Yes full discharge</p>	<p>WUA reports all 21 gates are operational</p> <p>Yes, full discharge</p>
	<p>3 3 Maintenance Record Exists</p> <p>3 3 1 Expenditure of cash, kind labor</p>	<p>WUA canal maintenance records</p> <ul style="list-style-type: none"> - Flood damage - Desilting - Canal structure maintenance - Outlet gates maintenance <p>WUA spent Rs 64,000 for main canal desilting in 1999 (Cash from ISF trees concession,etc)</p> <p>Labor mobilization in branch, distributaries MC and MFD for desilting in 1999 For instance, in MC 2 50 farmers worked for two days for desilting</p>	<p>WUA canal maintenance records</p> <ul style="list-style-type: none"> - Flood damage - Desilting - Canal structure maintenance - Outlet gates maintenance <p>WUA spent Rs 41 831 from ISF collection for maintenance on three branch and four minor canals in 1999</p> <p>3 465 users mobilized in three branch and four minor canals for desilting work in 1999 (Source WUA s records as of August 22,1999)</p>	<p>WUA canal maintenance records</p> <ul style="list-style-type: none"> - Desilting - Underground hume pipe - Regulator/outlet gate maintenance - Canal structure maintenance <p>WUA spent Rs 124,000 from ISF for seven new gates, lining of BC6 and 1, repair and maintenance of BC5 and intake construction</p> <p>Total 1 200 person-days mobilized in branch canal desilting in 1999</p>

Annex A Overall IMTP Results

Result	Indicators	Present Status (November 1999)		
		West Gandak	Khageri	Panchakanya
	3 3 2 WUA Canal Inventory	WUA holds canal inventory - Canal networks - Length of the main canal - 32 km - Length of branch canals - 72.5 km - Length of minor/secondary canals - 10.5 km - Length of the tertiary canals - 657 km - Length of MCs - 15 km - Physical Structures - Head regulators - Cross regulators - Bridges - Escapes - Gates - Offtakes - Tertiary structures	WUA holds canal inventory - Canal networks - Length of the main canal - 23 km - Length of branch canals - 37 km - Length of secondary canals - 13.7 km - Length of the tertiary canals - 139.2 km - Length of MCs - 15 km - Physical Structures - Head regulators - Cross regulators - Bridges - Escapes - Gates - Offtakes - Outlet structures	WUA holds canal inventory - Canal networks - Length of the main canal - 4.8 km - Length of branch canals - 37 km - Length of outlets - Physical Structures - Head regulators - Cross regulators - Bridges - Escapes - Gates - Offtakes - Underground hume pipes

Result Number 4 WUA is Mobilizing, Collecting, and Managing Human, Natural and Financial Resources

Result	Indicators	Present Status (November 1999)		
		West Gandak	Khageri	Panchakanya
WUA is Mobilizing, Collecting, and Managing Human, Natural & Financial Resources	4 1 Membership/Shares	- Rs 100 488 collected from shares through August 1999 Rs 80 000 collected from tree concession in August 1999	- Rs 37,360 from general membership through June 1999 Rs 23 037 from shares through June 1999	- Rs 7,100 from general membership from 1997 to August 1999 - Rs 30 636 from shares from 1997 to August 1999 - Rs 7 345 from labor in 1999
	4 1 1 Financial Revenues from Membership/Shares	- Rs 57 000 collected from road tax in 1999 Rs 38 000 collected from market tax in July 1999		
	4 1 2 Human Resources	7 041 paid members (May 1998)	3,556 paid members (May 1998)	870 members (May 1998)
	4 2 ISF			
	4 2 1 ISF Collection Efficiency	65.6% (May 1998)	78.52% (1998)	96.35% (1998/99)
	4 2 2 Gross ISF collections	Rs 245 006 collected from ISF form 1997 to May 1998	Rs 521 405 collected from ISF from 1994 to 1998	Rs 115,998 collected from 1996 to August 1999
	4 3 WUA Budget Plan	WUA develops annual budget plan	WUA develops annual budget plan	WUA develops annual budget plan
	4 3 1 Budget Planning	Budget planning for Canal operation & maintenance Salary Office management - TA/DA	Budget planning for Maintenance - Salary Office management - TA/DA	Budget planning for Canal operation & maintenance Salary Office management - TA/DA

Annex A Overall IMTP Results

Result	Indicators	Present Status (November 1999)		
		West Gandak	Khageri	Panchakanya
	4 3 2 Expenditures	<ul style="list-style-type: none"> - Main canal desilting - Rs 64,000 in 1999 - Salary (total) for five CMWF** - Rs 3,500 per month - Salary for WUA Executive Manager - Rs 1,000 per month - Salary for Branch Chiefs - Rs 3,000 per month - Salary for Office Secretary - Rs 2,500 per month 	<ul style="list-style-type: none"> - Rs 41,831 for maintenance for 3 Branch and 4 Minor Canals in 1999 - Salary for WUA Office Secretary - Rs 2,000 per month 	<ul style="list-style-type: none"> - Rs 124,000 in 1998/99 for main canal maintenance, construction of 7 new gates, lining of Branch no 6, repair BC no 1, and intake construction - Salary for CMWF* - Rs 1,800 per month - Salary for Office Secretary - Rs 1 500 per month
	4 4 Labor Contribution for Maintenance	Extensive labor contribution in 19 distributaries & 174 MC & MFD for desilting work in 1999 MC - 2, for instance had 50 farmers working for two days	3,465 person-days (WUA records, August 1999) labor contribution in three branch canals and four minor canals in desilting work	1,200 person days labor contribution in branch canals' desilting work

Canal Management Workforce

Result Number 5 Management Transfer Process Institutionalized Within DOI

Result	Indicator	Present Status (November 1999)
Management Transfer Process Institutionalized Within DOI	5 1 Preparation of Management Transfer Documents	Official Management Transfer documents have been prepared
	5 1 1 AP/MOA	- Prepared by IMD/DOI (1995)
	5 1 2 HMG's 1992 Irrigation Policy (First Amendment 1997)	- Prepared by DOI (1997)
	5 1 3 Handover Document	Prepared by IMD/DOI (1997)
	5 1 4 DOI Irrigation Management Transfer Guidelines	Prepared by IMD/DOI (1998)
	5 1 5 HMG's Irrigation Regulations (Draft)	- Prepared by DOI (1998)
	5 1 6 Institutional and Water Management Processes	Prepared by DOI (1997)
	5 2 Institutionalization of Management Transfer Documents	Official Management Transfer documents have been prepared
	5 2 1 AP/MOAs	- Approved by IMD/DOI and AsDB (1995) WUAs (1996)
	5 2 2 HMG's 1992 Irrigation Policy (First Amendment 1997)	- Approved by DOI (1997)
	5 2 3 Handover Document	Approved by DOI and WUAs (1997)
	5 2 4 DOI Irrigation Management Transfer Guidelines	- Approved by DOI and AsDB (1998)
	5 2 5 HMG's Irrigation Regulations	- Draft Officially Submitted (1998)
	5 2 6 Institutional and Water Management Processes	- Approved by IMD/DOI (1996)
	5 3 Implementation of Management Transfer Documents	
	5 2 1 AP/MOAs	Implemented in IMTP Phase I & II subprojects (1996 to present)
	5 2 2 HMG's 1992 Irrigation Policy (First Amendment 1997)	Management transfer (turnover, joint management) on-going throughout Nepal
	5 2 3 Handover Document	Exchange and accepted in Khageri and Panchakanya subprojects
	5 2 4 DOI Irrigation Management Transfer Guidelines	- Used by DOI throughout Nepal in HMG, AsDB, USAID and World Bank supported projects

Annex A Overall IMTP Results

Result	Indicator	Present Status (November 1999)
	5 2 5 HMG's Irrigation Regulations 5 2 6 Institutional and Water Management Processes	- In draft form but activity discussed - Full Canal Operation Plans and Canal Maintenance Plans being used in West Gandak and Panchakanya Preliminary Canal Operation Plan and Canal Maintenance Plan being used in Khageri

**ANNEX A 2
WUA ACTIVITIES IN PHASE I SUBPROJECTS**

(November 20, 1999)

	Activities	West Gandak	Khageri	Panchkanya
1	WUA formation and registration	✓	✓	✓
2	WUA office establishment	✓	✓	✓
3	Action plan preparation and MOA signing	✓	✓	✓
4	Rehabilitation work	✓	✓	✓
5	Water measurement	✓	X	✓
6	Development of canal operation plan	✓	X	✓
7	Development of canal maintenance plan	✓	X	✓
8	Implementation of canal O&M plans	✓	X	✓
9	Establishment of financial record keeping for the main committee	✓	✓	✓
10	Establishment of Canal Management Work Force	✓	✓	✓
11	Implementation of share system	OG	OG	OG
12	Irrigation management transfer to WUA	✓	✓	✓

- ✓ Completed
- X Needed, Still to be Done
- OG On-Going

ANNEX A 3
WUA TRAINING / ORIENTATION
CURRENT STATUS OF PHASE I IMTP SUBPROJECTS
(November 20, 1999)

	Activities	West Gandak	Khageri	Panchkanya
1	Awareness Campaign	✓	✓	✓
2	Share system development and administration	✓	✓	✓
3	Financial record keeping	✓	✓	✓
4	Interaction program on IMTP implementation process	✓	✓	✓
5	Basic administration and office management	✓	✓	✓
6	Leadership development	✓	✓	✓
7	Construction management and quality control	✓	✓	✓
8	Canal operation plan	✓	X	✓
9	Hydraulic operation (system calibration)	✓	X	✓
10	Canal maintenance plan	✓	X	✓
11	Income generation training for women	✓	✓	✓
12	Interaction program on ISF, inventory collection and office management for lower level WUAs	✓	✓	✓
13	Benefit monitoring and evaluation	✓	✓	✓
14	Observation study tour	✓	✓	✓
15	Orientation training for women on role and responsibilities in irrigation	✓	✓	✓
16	Forest management	✓	X	#

- ✓ Completed
- X Needed, Still to be Done
- # Not Needed

ANNEX A 4
STATUS OF FORMATION AND INSTITUTIONAL DEVELOPMENT OF WATER USERS' ASSOCIATIONS
(WUAs)
(November 20, 1999)

Subproject	District	Research/Study		Institutional Development		Action Plan Preparation	MOA Signing	Training/Strengthening/Capability Building							
		Baseline Study	Diagnostic Study	WUA Formation	Registration			Initial Organization Stage		Project Preparation Stage		Project Implementation Stage			Post Turnover Stage
								FWUA	IDWUA	MCB	WMSD	RMM	BMM	RPASD	
Phase 1															
1	West Gandak	Nawalparasi	C	C	C	C	C	C	C	C	C	C	C	C	Prg
2	Khageri	Chitwan	C	C	C	C	C	C	C	C	C	C	C	C	Prg
3	Panchakanya	Chitwan	C	C	C	C	C	C	C	C	C	C	C	C	Prg
Phase 2															
4	Pathraya	Kailali	C	C	C	C	C	C	C	C	C	Prc	Prg	Prc	P
5	Mohana	Kailali	C	C	C	C	C	C	C	C	Prc	P	P	Prc	P
6	Banganga	Kapilvastu	C	C	C	C	C	Prc	C	C	Prc	P	P	Prc	P
7	Chaurjahari	Rukum	C	C	C	C	C	Prc	C	Prc	Prc	P	P	Prc	P
8	Manusmara Hrapur Barrage Manpur Barrage	Sarlahi	C	C	C	C	C	C	C	C	Prc	Prc	Prc	Prc	P
			C	C	C	C	Prg	Prc	C	Prg	Prc	Prc	Prc	Prc	P
9	Hardinath East West	Dhanusha	C	C	C	C	C	C	C	C	Prc	Prc	Prg	Prc	P
			C	C	C	C	C	C	C	Prc	Prc	Prc	Prg	Prc	P
10	Kamala East West	Siraha Dhanusha	C	C	C	C	Prg	P	C	C	Prc	Prc	Prc	Prc	P
			C	C	C	C	Prg	P	C	C	Prc	Prc	Prc	Prc	P
11	Chandranahar	Saptari	C	C	C	C	C	P	C	C	Prc	Prc	P	Prc	P

C	Completed	FWUA	Formation of WUA	RMM	Resource Mobilization & Management
Prg	In progress about to be completed	IDWUA	Initial Development of WUA	BMM	Benefit Monitoring and Management
Prc	In process started	MCB	Management Capacity Building	RPASD	Rolling Package on Advanced Skills Development
P	Planned for FY 1999/2000 and for later years	WMSD	Water Management Skills Development		

ANNEX A.5
OVERALL INSTITUTIONAL AND PRE-REHABILITATION DEVELOPMENT ACTIVITIES
CURRENT STATUS OF PHASE II IMTP SUBPROJECTS
 (November 20, 1999)

	Activities	Kamala		Manusmara		Hardinath		Chandra Canal	Banganga	Pathrayya	Mohana	Chaurjahan
		West	East	I	II	East	West					
a	WUA formation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
b	SMC formation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
c	Joint walkthrough of the system	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
d	Design and cost estimate	OG	OG	✓	✓	✓	✓	✓	✓	✓	✓	✓
e	Finalization of cost estimate	OG	OG	✓	×	✓	✓	✓	✓	✓	✓	✓
f	Preparation of AP	×	×	✓	×	✓	✓	✓	✓	✓	✓	✓
g	MOA signing	×	×	✓	×	✓	✓	×	×	✓	✓	×

✓ Completed
 × To be Started
 OG On-Going

ANNEX A 6
INSTITUTIONAL DEVELOPMENT ACTIVITIES:
STATUS OF PHASE II IMTP SUBPROJECTS
 (November 20, 1999)

	Activities	Kamala		Manusmara		Hardinath		Chandra Canal	Banganga	Pathraiya	Mohana	Chaurjahanri
		West	East	I	II	East	West					
1	<u>WUA Formation</u>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	a Introductory workshop	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	b Fielding Sociologist / AO	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	c Selection of FOs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	d Training of FOs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	e Inventory Collection	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	f Organization Design	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	g Formation of Constitution Draft Committee	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	h Development of WUA constitution	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	i Formation of WUA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	j Ratification of WUA constitution	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	k Registration of WUA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	<u>Office Establishment of WUA</u>											
	a WUA operating in office	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	b Management of official records	OG	OG	OG	OG	OG	OG	OG	OG	OG	OG	OG
3	<u>Internal Institutional Process of WUA</u>											
	a Fixing date of regular meeting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	b Conducting regular meetings	OG	OG	OG	OG	OG	OG	OG	OG	OG	OG	OG
	c Keeping attendance and decisions in register	OG	OG	OG	x	OG	OG	OG	OG	OG	OG	OG
	d Keeping agenda and decisions in register	OG	OG	OG	x	OG	OG	OG	OG	OG	OG	OG

Annex A Overall IMTP Results

	Activities	Kamala		Manusmara		Hardinath		Chandra Canal	Banganga	Pathraya	Mohana	Chaurjahanni
		West	East	I	II	East	West					
e	Calling meeting according to WUA constitution	OG	x	OG	✓	OG	OG	OG	OG	OG	OG	OG
f	Opening bank account	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
g	Checks and balances between Main General Assembly and within different levels of WUA	OG	x	OG	OG	OG	OG	OG	OG	OG	OG	OG
h	Development of WUA rules and regulations	✓	✓	OG	OG	✓	✓	✓	OG	✓	✓	✓
i	Implementation of rules and regulations	x	x	OG	OG	OG	OG	OG	x	OG	OG	OG
4 Share System Development and Administration												
a	List of the farmers and their land	OG	OG	OG	OG	OG	OG	OG	OG	OG	OG	OG
b	Preparation of receipt book for ISF, share and general membership	OG	OG	OG	x	OG	OG	OG	OG	OG	OG	OG
c	General membership distribution	OG	OG	OG	OG	OG	OG	OG	OG	OG	OG	OG
d	Share membership distribution	x	x	x	x	OG	OG	OG	x	OG	OG	OG
e	Resource (ISF and other) collection	x	x	OG	OG	x	x	x	x	OG	x	OG
f	Resource mobilization	OG	OG	OG	OG	OG	OG	OG	x	OG	OG	OG
5 Water Management												
a	Hydraulic operation	OG	OG	OG	OG	x	x	OG	x	OG	x	x
b	Canal operation plan preparation	x	x	x	x	x	x	x	x	✓	x	x
c	Canal maintenance plan preparation	x	x	x	x	x	x	x	x	✓	x	x
d	Gauging station plan & calibration of head regulator	OG	OG	✓	✓	✓	✓	✓	x	x	x	x
e	Selection of water management pilot block	x	x	✓	✓	✓	✓	✓	x	x	x	x

	Activities	Kamala		Manusmara		Hardinath		Chandra Canal	Banganga	Pathraya	Mohana	Chaurjahanri
		West	East	I	II	East	West					
6	<u>Fixation of New ISF Rate Based on O&M Costs</u>	x	x	x	x	x	x	x	x	OG	x	x
7	<u>Action Plan Preparation</u>											
	a SMC formation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	b Joint walkthrough of the system	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	c Identification of rehabilitation work	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	d Design and cost estimate	OG	OG	✓	OG	✓	✓	✓	✓	✓	✓	✓
	e Prioritization of rehabilitation work	x	x	✓	x	✓	✓	✓	✓	✓	✓	✓
	f Finalization of cost estimate	x	x	✓	x	✓	✓	✓	✓	✓	✓	✓
	g Preparation of AP	x	x	✓	x	✓	✓	✓	✓	✓	✓	✓
	h MOA signing	x	x	✓	x	✓	✓	OG	OG	✓	✓	OG
8	<u>Supervision and Quality Control by SMC</u>	To be initiated in 1999/00								OG		
9	<u>Performance Monitoring by WUA</u>	To be initiated in 1999/00										

- ✓ Completed
- x To be Started
- OG On Going

ANNEX A.7
WUA TRAINING / ORIENTATION
CURRENT STATUS OF PHASE II IMTP SUBPROJECTS
(November 20, 1999)

	Activities	Kamala		Manusmara		Hardinath		Chandra Canal	Banganga	Pathraya	Mohana	Chaurjahari
		West	East	I	II	East	West					
1	Basic share system development and administration	✓	✓	✓	✓	✓ ₁	✓	✓	✓	✓	✓	✓
2	Basic administration and office management	✓	✓	✓	✓	✓	✓	✓	✓ ₁	✓	✓	✓
3	Observation study tour	✓	✓	×	×	✓	✓	×	✓ ₁	✓	✓	×
4	Construction management and quality control	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	×
5	Orientation program on IMTP implementation procedures	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	×
	5.1 Preparation of AP/MOAs, and WUA roles, responsibilities and authority delineation and institutionalization within WUA	×	×	×	×	✓	✓	×	×	✓	×	×
6	Water management/on-farm water management	✓ ₂	×	×	✓	×	×					
7	Water delivery workforce (establish training)	×	×	✓ ₃	×	✓ ₃	✓ ₃	×	×	×	×	×

✓ Completed

- 1 Completed for old WUA
- 2 Initiated for project staff & WUA Main Committee
- 3 WDF/CMWF established

× To be Started

Note Not all IMTP WUAs will receive identical training and orientation. IMTP stresses a needs-based approach, rather than a pre-determined package of training and advice uniformly delivered at all sites. Other potential IMTP WUA training/orientation sessions include basic institutional development processes, leadership development/capability development, financial management, account and record keeping, hydraulic operation (system calibration), operation & maintenance processes, resource generation and mobilization, etc.

ANNEX A 8
STATUS OF SUCCESS INDICATORS IN IMTP PHASE I AND II SUBPROJECTS
 (November 20, 1999)

Result	Indicators	Phase I Subprojects			Phase II Subprojects							
		West Gandak	Khageri	Panchakanya	Kamala	Manusmara	Hardinath	Chandra Canal	Banganga	Pathraya	Mohana	Chaurjahari
1 Formal WUA Exists	1.1 Registration Certificate & Renewal Registration	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	1.2 Audit	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	1.3 Elections	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	1.4 Constitution	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	1.5 Physical Office	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	1.6 Staffing and Position	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	1.7 Record Keeping	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	1.8 Rules & Procedures Established	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2 WUA is Operating Canals	2.1 CMWF Exists & Functions	✓	✓	✓								
	2.2 CMWF is Operating Canal	✓	✓	✓								
	2.3 Farmers are Aware of CMWF	✓	✓	✓								
	2.4 WUA Canal Operation Plan Exists/Functions	✓	✓	✓						✓		
	2.5 WUA Water Delivery Records	✓	✓	✓								
	2.6 CMWF Follows Distribution Schedule	✓	✓	✓								
3 WUA is Maintaining Canals	3.1 WUA Conducts Maintenance Needs Assessment	✓	✓	✓				✓	✓	✓	✓	✓
	3.2 Joint System Walkthrough	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	3.3 Prioritization of Work	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
	3.4 WUA Maintenance Plan Exists	✓	✓	✓						✓		
	3.5 Mechanical Gates are Operational	✓	✓	✓								
	3.6 Canal Capacity Maintained	✓	✓	✓								
	3.7 Maintenance Record Exists	✓	✓	✓								
	3.8 Expenditure of Cash Kind Labor	✓	✓	✓								
	3.9 WUA Canal Inventory	✓	✓	✓								

Annex A Overall IMTP Results

Result	Indicators	Phase I Subprojects			Phase II Subprojects								
		West Gandak	Khageri	Panchakanya	Kamala	Manusmara	Hardinath	Chandra Canal	Banganga	Pathraya	Mohana	Chaurjahari	
4 WUA is Mobilizing, Collecting, and Managing Human, Natural, and Financial Resources	4.1 Membership/Shares Managed	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	4.2 Financial Revenues From Membership/Shares	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	4.3 Human Resources Mobilized	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	4.4 ISF Collected	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	4.5 WUA Budget Plan	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	4.6 Expenditures	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	4.7 Labor Contribution for Maintenance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
TOTAL		29	29	30	10	11	11	11	8	14	11	12	

✓ Completed or On going Completed are indicators that exist e.g. WUA Constitution Office etc On Going are indicators that take place over time e.g. WUA Record Keeping

ANNEX B

RESULTS AND ACHIEVEMENTS OF IMTP SUBPROJECTS (May 30, 1996 - September 30, 1998)

ANNEX B 1
INSTITUTIONAL DEVELOPMENT ACTIVITIES:
STATUS OF PHASE I IMTP SUBPROJECTS
 (September 30, 1998)

	Activities	West Gandak	Khageri	Panchakanya
1	<u>WUA Formation</u>	✓	✓	✓
	a Introductory workshop	✓	✓	✓
	b Fielding Sociologist / AO	✓	✓	✓
	c Selection of FOs	✓	✓	✓
	d Training of FOs	✓	✓	✓
	e Inventory Collection	✓	✓	✓
	f Organization Design	✓	✓	✓
	g Formation of Constitution Draft Committee	✓	✓	✓
	h Development of WUA constitution	✓	✓	✓
	i Formation of WUA	✓	✓	✓
	j Ratification of WUA constitution	✓	✓	✓
	k Registration of WUA	✓	✓	✓
2	<u>Office Establishment of WUA</u>			
	a Physical office established	✓	✓	✓
	b Office sign board established	✓	✓	✓
	c Basic essential furniture in office	×	×	✓
	d Basic essential registers / files in office	✓	✓	✓
	e Establishment or deputation of office secretary	✓	✓	✓
	f Keeping regular office hours	×	×	×
	g Deputation of regular staff	✓	✓	✓
	h Management of official records	✓	✓	✓

	Activities	West Gandak	Khageri	Panchakanya
3	Internal Institutional Process of WUA			
a	Fixing date of regular meeting	✓	✓	✓
b	Conducting regular meetings	×	×	✓
c	Keeping attendance and decisions in register	✓	✓	✓
d	Keeping agenda and decisions in register	✓	✓	✓
e	Calling General Assembly meeting according to WUA constitution	✓	✓	✓
f	Opening bank account	✓	✓	✓
g	Checks and balances between Main, General Assembly and within different levels of WUA	✓	✓	✓
h	Development of WUA rules and regulations	✓	✓	✓
i	Implementation of rules and regulations	×	×	✓
j	Conflict resolution by WUA	✓	✓	✓
4	Share System Development and Administration			
a	List of the farmers and their land	✓	✓	✓
b	Preparation of receipt book for ISF share and general membership	✓	✓	✓
c	General membership distribution	✓	✓	✓
d	Share membership distribution	✓	✓	✓
e	Resource (ISF and other) collection	✓	✓	✓
f	Resource mobilization	✓	✓	✓
g	Recording data in the register	✓	✓	✓
5	Water Management			
a	Parcellary map development	×	×	×
b	Calibration of headwork and main canal	✓	×	✓
c	Discharge measurement in branch and tertiary canals	✓	×	✓
d	Establishment of CMWF	✓	✓	✓
e	Development of canal operations plan	✓	×	✓

Annex B IMTP Results 1996 - 1998

	Activities	West Gandak	Khageri	Panchakanya
	f CMWF Training on canal operation plan	✓	×	✓
	g Record keeping on water delivery	✓	×	✓
6	<u>Canal Maintenance Plan</u>			
	a Development of canal maintenance plan	✓	×	✓
7	<u>Fixation of ISF Rate</u>			
	a Identification of canal O&M costs	×	×	×
	b Identification of official management costs	×	×	×
8	<u>Action Plan Preparation</u>			
	a SMC formation	✓	✓	✓
	b Orientation training on action plan preparation	✓	✓	✓
	c Joint walkthrough of the system	✓	✓	✓
	d Identification of rehabilitation	✓	✓	✓
	e Joint (DIO&WUA) preparation of cost estimate	✓	✓	✓
	f Joint (DIO&WUA) discussion of cost estimate	✓	✓	✓
	g Prioritization of rehabilitation work	✓	✓	✓
	h Finalization of cost estimate	✓	✓	✓
	i Preparation of AP	✓	✓	✓
	j MOA signing	✓	✓	✓
9	<u>Supervision and Quality Control by SMC</u>	✓	✓	✓
10	<u>Performance Monitoring by WUA</u>			
	a ISF Collection	✓	✓	✓
	b Share / general membership distribution	✓		✓
	c Irrigated area	×	×	✓
	d Cropping pattern	×	×	✓

Annex B IMTP Results 1996 - 1998

	Activities	West Gandak	Khageri	Panchakanya
e	Production and productivity	×	×	✓
f	Cropping intensity	×	×	×
g	Regular O&M activities	✓	×	✓

✓ Completed X To Be Done OG On Going

ANNEX B 2
INSTITUTIONAL DEVELOPMENT ACTIVITIES
STATUS OF PHASE II IMTP SUBPROJECTS
(September 30, 1998)

	Activities	Kamala		Manusmara		Hardmath		Chandra Canal	Banganga	Pathraya	Mohana	Chaurjahari
		West	East	I	II	East	West					
1	<u>WUA Formation</u>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	a Introductory workshop	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	b Fielding Sociologist / AO	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	c Selection of FOs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	d Training of FOs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	e Inventory Collection	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	f Organization Design	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	g Formation of Constitution Draft Committee	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	h Development of WUA constitution	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	i Formation of WUA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	j Ratification of WUA constitution	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	k Registration of WUA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	<u>Office Establishment of WUA</u>											
	a Physical office established	✓	✓	✓	✓	✓	✓	×	×	✓	×	✓
	b Office sign board established	×	×	×	×	×	✓	✓	✓	✓	×	✓
	c Basic essential furniture in office	×	×	×	×	×	×	×	×	×	×	×
	d Basic essential registers / files in office	×	×	×	×	×	✓	✓	×	✓	×	✓
	e Establishment or deputation of office secretary	×	✓	×	×	×	×	×	×	✓	×	×
	f Keeping regular office hours	×	×	×	×	×	×	×	×	×	×	✓
	g Deputation of regular staff	×	×	×	×	×	×	×	×	×	×	×
	h Management of official records	OG	OG	×	×	OG	OG	OG	×	✓	×	✓

	Activities	Kamala		Manusmara		Hardinath		Chandra Canal	Banganga	Pathraya	Mohana	Chaurjahari
		West	East	I	II	East	West					
3	Internal Institutional Process of WUA											
a	Fixing date of regular meeting	✓	✓	✓	✓	✓	✓	✓	✓	✓	×	✓
b	Conducting regular meetings	OG	OG	OG	OG	OG	OG	OG	OG	OG	×	OG
c	Keeping attendance and decisions in register	OG	OG	×	×	OG	OG	OG	OG	OG	×	OG
d	Keeping agenda and decisions in register	OG	OG	×	×	OG	OG	OG	OG	OG	×	OG
e	Calling General Assembly meeting according to WUA constitution	OG	×	×	×	×	×	OG	OG	OG	×	OG
f	Opening bank account	✓	✓	✓	×	×	✓	✓	✓	✓	×	✓
g	Checks and balances between Main General Assembly and within different levels of WUA	OG	×	×	×	×	×	OG	OG	OG	×	OG
h	Development of WUA rules and regulations	✓	✓	×	×	×	×	✓	×	✓	×	✓
i	Implementation of rules and regulations	×	×	×	×	×	×	×	×	×	×	×
j	Conflict resolution by WUA	×	×	×	×	×	×	×	×	×	×	×
4	Share System Development and Administration											
a	List of the farmers and their land	OG	OG	OG	OG	OG	OG	OG	OG	OG	OG	OG
b	Preparation of receipt book for ISF share and general membership	OG	OG	×	×	×	×	OG	OG	OG	×	OG
c	General membership distribution	OG	OG	×	×	OG	OG	×	OG	OG	×	OG
d	Share membership distribution	×	×	×	OG	OG	OG	×	×	OG	×	OG
e	Resource (ISF and other) collection	×	×	×	×	OG	OG	×	×	OG	×	OG
f	Resource mobilization	OG	OG	×	×	OG	OG	OG	OG	OG	×	OG
g	Recording data in the register	×	×	×	×	×	×	×	×	OG	×	OG
5	Water Management											
a	Parcellary map development	×	×	×	×	×	×	×	×	×	×	×
b	Calibration of headwork and main canal	×	×	×	×	×	×	×	×	×	×	×

	Activities	Kamala		Manusmara		Hardinath		Chandra Canal	Banganga	Pathraya	Mohana	Chaurjahari
		West	East	I	II	East	West					
	c Discharge measurement in branch and tertiary canals	x	x	x	x	x	x	x	x	x	x	x
	d Establishment of CMWF	x	x	x	x	x	x	x	x	x	x	x
	e Development of canal operations plan	x	x	x	x	x	x	x	x	x	x	x
	f CMWF Training on canal operation plan	x	x	x	x	x	x	x	x	x	x	x
	g Record keeping on water delivery	x	x	x	x	x	x	x	x	x	x	x
6	<u>Canal Maintenance Plan</u>											
	a Development of canal maintenance plan	x	x	x	x	x	x	x	x	x	x	x
7	<u>Fixation of ISF Rate</u>											
	a Identification of canal O&M costs	x	x	x	x	x	x	x	x	x	x	x
	b Identification of official management costs	x	x	x	x	x	x	x	x	x	x	x
8	<u>Action Plan Preparation</u>											
	a SMC formation	x	✓	✓	x	✓	✓	✓	✓	✓	x	✓
	b Orientation training on action plan preparation	x	x	x	x	x	x	x	x	✓	x	x
	c Joint walkthrough of the system	✓	✓	✓	✓	✓	✓	✓	OG	✓	x	✓
	d Identification of rehabilitation	✓	✓	✓	✓	✓	✓	✓	OG	✓	x	✓
	e Joint (DIO&WUA) preparation of cost estimate	x	x	✓	✓	OG	OG	✓	OG	✓	x	✓
	f Joint (DIO&WUA) discussion of cost estimate	x	x	x	x	OG	OG	✓	x	✓	x	OG
	g Prioritization of rehabilitation work	x	x	x	x	OG	OG	x	x	✓	x	x
	h Finalization of cost estimate	x	x	x	x	x	x	✓	x	✓	x	x
	i Preparation of AP	x	x	x	x	x	x	x	x	✓	x	x
	j MOA signing	x	x	x	x	x	x	x	x	✓	x	x

	Activities	Kamala		Manusmara		Hardnath		Chandra Canal	Banganga	Pathraya	Mohana	Chaurjahari
		West	East	I	II	East	West					
9	Supervision and Quality Control by SMC	x	x	x	x	x	x	x	x	✓	x	x
10	Performance Monitoring by WUA											
a	ISF Collection	x	x	x	x	x	x	x	x	OG	x	OG
b	Share / general membership distribution	x	x	x	x	x	x	x	OG	OG	x	OG
c	Irrigated area	x	x	x	x	x	x	x	x	OG	x	OG
d	Cropping pattern	x	x	x	x	x	x	x	x	x	x	x
e	Production and productivity	x	x	x	x	x	x	x	x	x	x	x
f	Cropping intensity	x	x	x	x	x	x	x	x	x	x	x
g	Regular O&M activities									OG		OG

- ✓ Completed
- X To Be Done
- OG On-Going

ANNEX B.3
WUA TRAINING/ORIENTATION:
STATUS OF PHASE II IMTP SUBPROJECTS
(September 30, 1998)

	Activities	Kamala		Manusmara Phase I & II	Hardinath		Chandra Canal	Banganga	Pathraya	Mohana	Chaurjahari
		West	East		East	West					
A	<u>Priority Training/Orientation for all IMTP Phase II WUAs</u>										
	1 Orientation program on (i) IMTP implementation procedures, (ii) preparation of AP/MOAs, and (iii) roles, responsibilities, and authority delineation and institutionalization within WUA	×	×	×	×	×	×	×	✓	×	×
	2 Construction management and quality control	×	×	×	×	×	×	×	✓	×	×
	3 Observation study tour	✓	✓	×	✓	✓	×	✓ ¹	×	×	×
	4 Basic institutional development processes	×	×	×	×	×	×	×	×	×	×
B	<u>Other WUA Training Package</u>										
	1 Basic administration and office management	✓	✓	×	✓	✓	×	✓ ¹	✓	×	✓
	2 Basic share system development and administration	✓	✓	✓ ¹	✓	✓	×	✓ ¹	✓	×	✓
	3 Leadership development	×	×	×	×	×	×	✓ ¹	×	×	×
	4 Financial management, account, and record keeping	×	×	×	×	×	×	✓ ¹	×	×	×
	5 Hydraulic operations	×	×	×	×	×	×	×	×	×	×

Annex B IMTP Results 1996 - 1998

	Activities	Kamala		Manusmara Phase I & II	Hardinath		Chandra Canal	Banganga	Pathraya	Mohana	Chaurjahari
		West	East		East	West					
6	On-farm water management	x	x	x	x	x	x	x	x	x	x
7	Water delivery workforce	x	x	x	x	x	x	x	x	x	x
8	Operation and maintenance processes	x	x	x	x	x	x	x	x	x	x
9	Resource generation and mobilization	x	x	x	x	x	x	x	x	x	x
10	Conflict resolution/management	x	x	x	x	x	x	x	x	x	x
11	Benefit monitoring and Evaluation	x	x	x	x	x	x	x	x	x	x
12	Women s participation in irrigation and income generation	x	x	x	x	x	x	x	x	x	x
13	Agriculture production and management	x	x	x	x	x	x	x	x	x	x

- ✓ Completed
- X To Be Done
- OG On-Going

ANNEX B.4
WUA Constitution (First Amendment - 1997)
West Gandak Irrigation Subproject

नेपाल गण्डक पश्चिमी नहर प्रणाली
जल उपभोक्ता सस्थाको



प्रथम सशोधित विधान २०५४



२०५४

ANNEX B.5
WUA Election Regulation - 1997
West Gandak Irrigation Subproject

नेपाल गण्डक पश्चिमी नहर प्रणाली
जल उपभोक्ता सस्थाको



प्रथम सशोधित विधान २०५४



२०५४

**ANNEX B.6
WUA TRAINING IN PHASE I SUBPROJECTS
(September 30, 1998)**

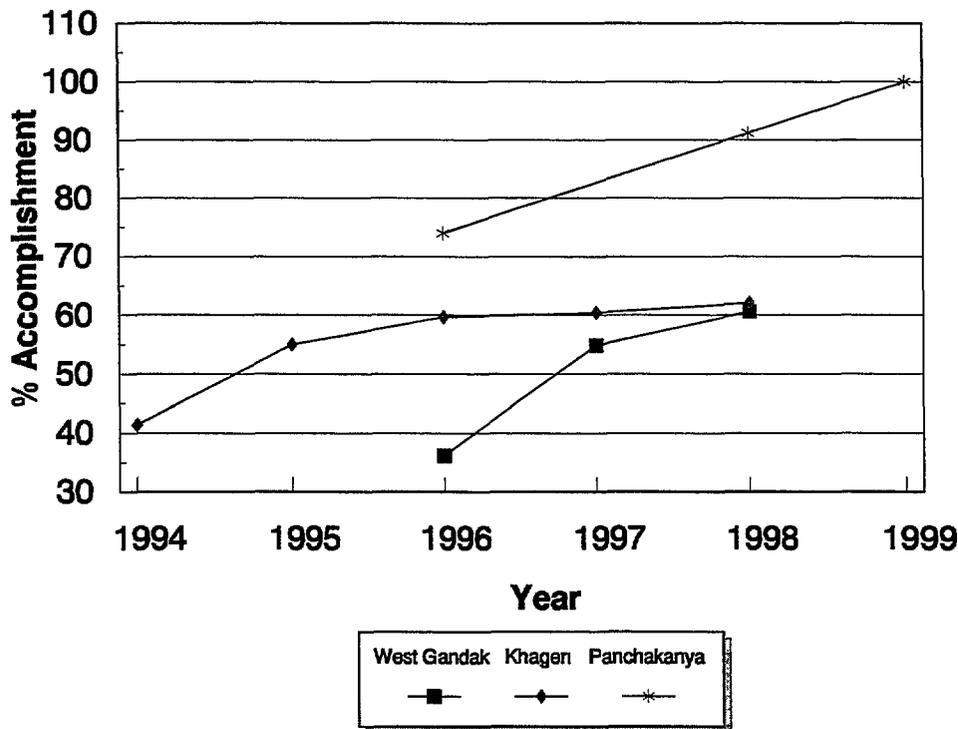
Training Activity		West Gandak	Khageri	Panchakanya
1	Management Transfer Program Introduction			
a)	Main Committee	✓	✓	✓
b)	Branch Canals, <i>Tolis</i>	✓	✓	✓
2	Basic Administration and Office Management	✓	✓	✓
3	Share System Development	✓	✓	✓
4	Share System Administration	✓	✓	✓
5	Financial Management and Record Keeping		✓	
a)	Main Committee Executives	✓	✓	✓
b)	Main Committee Secretary and Treasurer, Branch and <i>Toli</i> Committee	✓	x	x
6	Canal Operation and Maintenance			
a)	Main	✓	✓	✓
b)	Branch and <i>Tolis</i>	OG	x	✓
7	Construction Management and Quality Control	✓	✓	✓
8	Benefit Monitoring and Evaluation	✓	✓	✓
9	Hydraulic Operations	✓	✓	✓
10	Agricultural Water Management	x	x	x
11	Gender Awareness Training for Women	✓	✓	✓
12	Observation Study Tour	✓	✓	✓

✓ = Completed
 x = To be done
 OG = On Going

**ANNEX B.7
WUA MEMBERSHIP (PERCENT ACCOMPLISHMENT) IN PHASE I
SUBPROJECTS**

Subprojects	1994 (%)	1995 (%)	1996 (%)	1997 (%)	1998 (%)	1999 (%)
West Gandak	NA	NA	36.2	54.9	60.6	NA
Khageri	41.4	55	59.7	60.4	62.1	NA*
Panchakanya	NA	NA	74	NA	91.2	100

WUA Membership in Phase I Subprojects



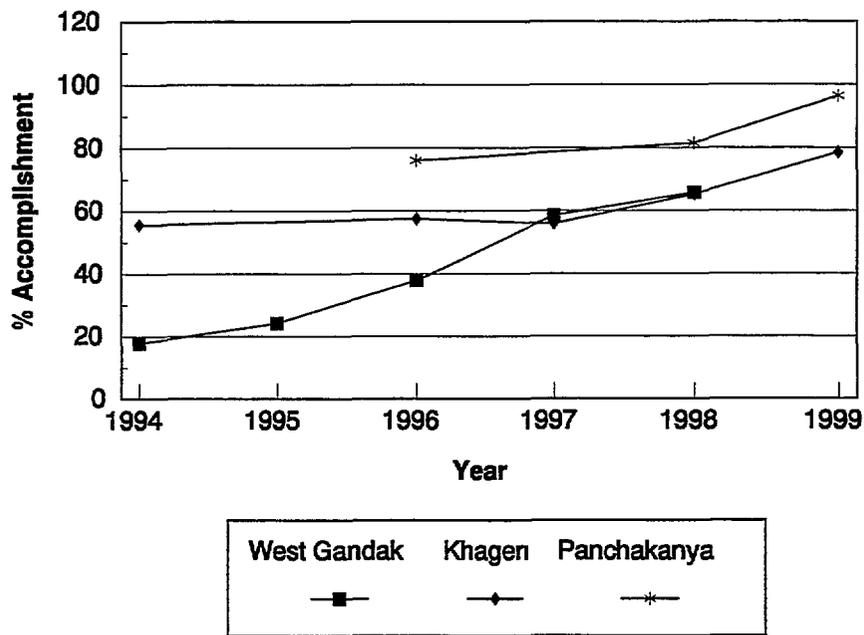
NA = Data not available, 1999 data available later in year

* Preliminary 1999 data from Khageri shows increased membership e.g. BC-5 membership has increased from 49.9 percent in 1998 to 82.2 percent in 1999, Minor-3 from 64.5 percent to 75.6 percent etc

ANNEX B 8
ISF COLLECTION EFFICIENCY (%) IN PHASE I SUBPROJECTS

Subprojects	1994 (%)	1995 (%)	1996 (%)	1997 (%)	1998 (%)	1999 (%)
West Gandak	17.8	24.2	37.8	58.5*	65.7*	NA
Khageri	55.6	NA	57.5	55.9	65.2	78.5
Panchakanya	NA	NA	76	NA	81.5	96.4

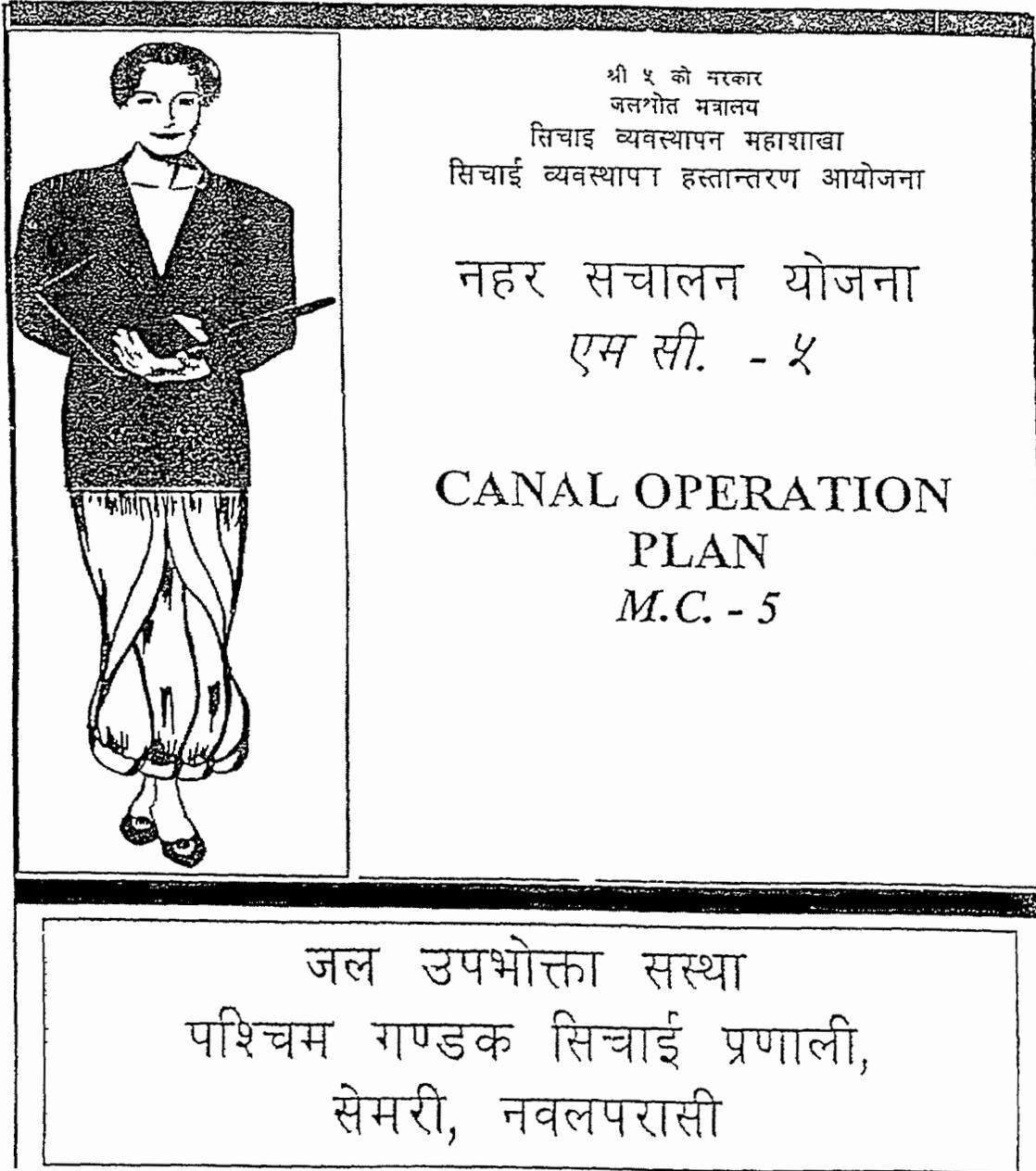
ISF Collection, Phase I Subproject



NA = Data not available, 1999 data available later in year

* Target for ISF Collection Efficiency in West Gandak for 97 and 98 based on percentage of WUA Membership
 i.e. 54.9 percent in 97, 60.6 percent in 98

ANNEX B 9
West Gandak Canal Operation Plan (Cover Page)



ANNEX B 10
West Gandak Canal Maintenance Plan (Cover Page)



श्री ५ को सरकार
जनश्रोत मन्त्रालय
सिंचाई विभाग
सिंचाई व्यवस्थापन महाशाखा
प्रणाली व्यवस्थापन शाखा
सिंचाई व्यवस्थापन हस्तान्तरण आयोजना

नहर मर्मत योजना
मन्जरिया माइनर

**CANAL MAINTENANCE
PLAN
MANJARIA MINOR**

जल उपभोक्ता संस्था
पश्चिम गण्डक सिंचाई प्रणाली
सेमरी, नवलपरासी

प्रमोद कल
श्री अश्विमान शर्मा न्यौपाने, रत्नाहकार
क्याडी/आप्टिक

ANNEX B 11
West Gandak Irrigation Schedule for MC-5

एम सि ५

पानीको सेयर _____ ६० लिटर प्रति सेकेण्ड
ढोका खुल्ने अवधि _____ ७ दिन २ घण्टा अर्थात १७० घण्टा
एफ डि सेयर (एकमुष्ट) _____ ४८ लिटर प्रति सेकेण्ड

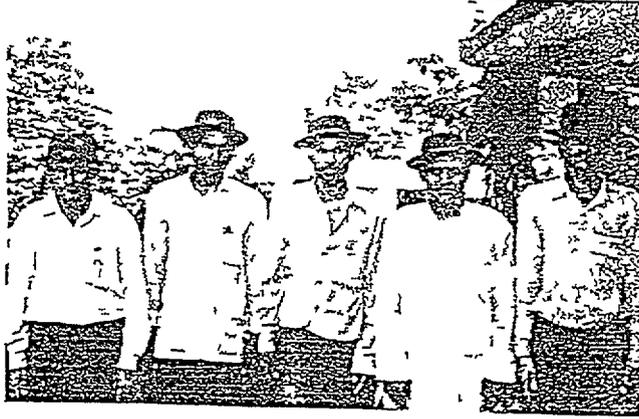
एफ.डि हरूमा पानीको वितरण तालिका

एफ डि न	क्षेत्रफल ह.	हिउदेवालीको क्षेत्रफल ह	जमिनका अनुपात %	पानीको समय लि प्र से	पानी पाउने अवधि घ.—मि	एफ डि चल्क	पाला
१	११ १४	५ ४२	११ ३२	५ ४३	६४-५०	① (१,२,३,४) (१९ ४१हे)	① ↓
२	८ ०६	३ ९३	८ १९	३ ०३			
३	१० ६६	५ १८	१० ८२	५ १९			
४	१० ०५	४ ८९	१० २१	४ ९०			
५	१० ३८	५ ०५	१० ५५	५ ०६	५३-३०	② (५,६,७) (१४ ५३हे)	② ↓
६	९ ०८	४ ४२	९ २३	४ ४३			
७	१० ४२	५ ०६	१० ५७	५ ०८			
८	१० १०	४ ९६	१० ३६	४ ०८	५१-४०	③ (८,९,१०) (१३ ९ ६हे)	③
९	९ १०	६ ४३	९ २५	६ ४४			
१०	९ ३६	४ ५५	९ ५०	४ ५६			
जम्मा	९८ ४४	४७ ८८	१००	४८	१७०		

ANNEX B.12
West Gandak Canal Management Workforce Training Manual

श्री ५ को सरकार
जलशक्ति मन्त्रालय
निचाइ विभाग
प्रणाली व्यवस्थापन शाखा
सिचाइ व्यवस्थापन हस्तान्तरण आयोजना

नहर ब्यवस्थापन कार्यदलको
संगठन, प्रशासन तथा ब्यवस्थापन



Training Manual On
Organization, Administration and Management
of
Canal Management Workforce

प्रस्तुतकर्ता
चुनन लाल श्रेष्ठ
सिचियर डिभिजनल इन्जिनियर
प्रणाली व्यवस्थापन शाखा

परामशदातृ
इन्जिनियर
जल व्यवस्थापन विन आई एम टा पी

२०५४

ANNEX C

RESULTS AND ACHIEVEMENTS OF IMTP SUBPROJECTS (October 1, 1998 - September 30, 1999)

ANNEX C.1
WUA ACTIVITIES IN PHASE I SUBPROJECTS
(September 30, 1999)

	Activities	West Gandak	Khageri	Panchkanya
1	WUA formation and registration	✓	✓	✓
2	WUA office establishment	✓	✓	✓
3	Action plan preparation and MOA signing	✓	✓	✓
4	Rehabilitation work	✓	✓	✓
5	Water measurement	✓	X	✓
6	Development of canal operation plan	✓	X	✓
7	Development of canal maintenance plan	✓	X	✓
8	Implementation of canal O&M plans	✓	X	✓
9	Establishment of financial record keeping for the main committee	✓	✓	✓
10	Establishment of Canal Management Work Force	✓	✓	✓
11	Implementation of share system	OG	OG	OG
12	Irrigation management transfer to WUA	✓	✓	✓

- ✓ Completed
- X Needed, Still to be Done
- OG On-Going

ANNEX C 2
WUA TRAINING / ORIENTATION
CURRENT STATUS OF PHASE I IMTP SUBPROJECTS
 (September 30, 1999)

	Activities	West Gandak	Khageri	Panchkanya
1	Awareness Campaign	✓	✓	✓
2	Share system development and administration	✓	✓	✓
3	Financial record keeping	✓	✓	✓
4	Interaction program on IMTP implementation process	✓	✓	✓
5	Basic administration and office management	✓	✓	✓
6	Leadership development	✓	✓	✓
7	Construction management and quality control	✓	✓	✓
8	Canal operation plan	✓	X	✓
9	Hydraulic operation (system calibration)	✓	X	✓
10	Canal maintenance plan	✓	X	✓
11	Income generation training for women	✓	✓	✓
12	Interaction program on ISF, inventory collection and office management for lower level WUAs	✓	✓	✓
13	Benefit monitoring and evaluation	✓	✓	✓
14	Observation study tour	✓	✓	✓
15	Orientation training for women on role and responsibilities in irrigation	✓	✓	✓
16	Forest management	✓	X	#

- ✓ Completed
- X Needed, Still to be Done
- # Not Needed

ANNEX C 3
STATUS OF FORMATION AND INSTITUTIONAL DEVELOPMENT OF WATER USERS' ASSOCIATIONS
(WUAs)
(September 30, 1999)

Subproject	District	Research/Study		Institutional Development		Action Plan Preparation	MOA Signing	Training/Strengthening/Capability Building							
		Baseline Study	Diagnostic Study	WUA Formation	Registration			Initial Organization Stage		Project Preparation Stage		Project Implementation Stage			Post Turnover Stage
								FWUA	IDWUA	MCB	WMSD	RMM	BMM	RPASD	
	Phase 1														
1	West Gandak	Nawalparasi	C	C	C	C	C	C	C	C	C	C	C	C	Prg
2	Khageri	Chitwan	C	C	C	C	C	C	C	C	C	C	C	C	Prg
3	Panchakanya	Chitwan	C	C	C	C	C	C	C	C	C	C	C	C	Prg
	Phase 2														
4	Pathraya	Kailali	C	C	C	C	C	C	C	C	Prc	Prg	Prc	P	
5	Mohana	Kailali	C	C	C	C	C	C	C	Prc	P	P	Prc	P	
6	Banganga	Kapibastu	C	C	C	C	C	Prc	C	C	Prc	P	P	Prc	P
7	Chaurjahari	Rukum	C	C	C	C	C	Prc	C	Prc	Prc	P	P	Prc	P
8	Manusmara Hirapur Barrage Manpur Barrage	Sarlahi	C C	C C	C C	C C	C Prg	C Prc	C C	C Prg	Prc Prc	Prc Prc	Prc Prc	Prc Prc	P P
9	Hardnath East West	Dhanusha	C C	C C	C C	C C	C C	C C	C C	C Prc	Prc Prc	Prc Prc	Prg Prg	Prc Prc	P P
10	Kamala East West	Siraha Dhanusha	C C	C C	C C	C C	Prg Prg	P P	C C	C C	Prc Prc	Prc Prc	Prc Prc	Prc Prc	P P
11	Chandranahar	Saptari	C	C	C	C	C	P	C	C	Prc	Prc	P	Prc	P

C	Completed	FWUA	Formation of WUA	RMM	Resource Mobilization & Management
Prg	In progress about to be completed	IDWUA	Initial Development of WUA	BMM	Benefit Monitoring and Management
Prc	In process started	MCB	Management Capacity Building	RPASD	Rolling Package on Advanced Skills Development
P	Planned for FY 1999/2000 and for later years	WMSD	Water Management Skills Development		

**ANNEX C.4
OVERALL INSTITUTIONAL AND PRE-REHABILITATION DEVELOPMENT ACTIVITIES·
CURRENT STATUS OF PHASE II IMTP SUBPROJECTS
(September 30, 1999)**

	Activities	Kamala		Manusmara		Hardinath		Chandra Canal	Banganga	Pathrayya	Mohana	Chaurjahari
		West	East	I	II	East	West					
a	WUA formation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
b	SMC formation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
c	Joint walkthrough of the system	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
d	Design and cost estimate	OG	OG	✓	✓	✓	✓	✓	✓	✓	✓	✓
e	Finalization of cost estimate	OG	OG	✓	×	✓	✓	✓	✓	✓	✓	✓
f	Preparation of AP	×	×	✓	×	✓	✓	✓	✓	✓	✓	✓
g	MOA signing	×	×	✓	×	✓	✓	×	×	✓	✓	×

✓ Completed
 × To be Started
 OG On-Going

ANNEX C 5
INSTITUTIONAL DEVELOPMENT ACTIVITIES:
STATUS OF PHASE II IMTP SUBPROJECTS
 (September 30, 1999)

	Activities	Kamala		Manusmara		Hardmath		Chandra Canal	Banganga	Pathraya	Mohana	Chaurjahanri
		West	East	I	II	East	West					
1	<u>WUA Formation</u>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	a Introductory workshop	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	b Fielding Sociologist / AO	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	c Selection of FOs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	d Training of FOs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	e Inventory Collection	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	f Organization Design	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	g Formation of Constitution Draft Committee	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	h Development of WUA constitution	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	i Formation of WUA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	j Ratification of WUA constitution	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	k Registration of WUA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	<u>Office Establishment of WUA</u>											
	a WUA operating in office	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	b Management of official records	OG	OG	OG	OG	OG	OG	OG	OG	OG	OG	OG
3	<u>Internal Institutional Process of WUA</u>											
	a Fixing date of regular meeting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	b Conducting regular meetings	OG	OG	OG	OG	OG	OG	OG	OG	OG	OG	OG
	c Keeping attendance and decisions in register	OG	OG	OG	x	OG	OG	OG	OG	OG	OG	OG
	d Keeping agenda and decisions in register	OG	OG	OG	x	OG	OG	OG	OG	OG	OG	OG

	Activities	Kamala		Manusmara		Hardinath		Chandra Canal	Banganga	Pathrayya	Mohana	Chaurjahanri
		West	East	I	II	East	West					
e	Calling meeting according to WUA constitution	OG	x	OG	✓	OG	OG	OG	OG	OG	OG	OG
f	Opening bank account	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
g	Checks and balances between Main, General Assembly and within different levels of WUA	OG	x	OG	OG	OG	OG	OG	OG	OG	OG	OG
h	Development of WUA rules and regulations	✓	✓	OG	OG	✓	✓	✓	OG	✓	✓	✓
i	Implementation of rules and regulations	x	x	OG	OG	OG	OG	OG	x	OG	OG	OG
4	<u>Share System Development and Administration</u>											
a	List of the farmers and their land	OG	OG	OG	OG	OG	OG	OG	OG	OG	OG	OG
b	Preparation of receipt book for ISF share and general membership	OG	OG	OG	x	OG	OG	OG	OG	OG	OG	OG
c	General membership distribution	OG	OG	OG	OG	OG	OG	OG	OG	OG	OG	OG
d	Share membership distribution	x	x	x	x	OG	OG	OG	x	OG	OG	OG
e	Resource (ISF and other) collection	x	x	OG	OG	x	x	x	x	OG	x	OG
f	Resource mobilization	OG	OG	OG	OG	OG	OG	OG	x	OG	OG	OG
5	<u>Water Management</u>											
a	Hydraulic operation	OG	OG	OG	OG	x	x	OG	x	OG	x	x
b	Canal operation plan preparation	x	x	x	x	x	x	x	x	OG	x	x
c	Canal maintenance plan preparation	x	x	x	x	x	x	x	x	OG	x	x
d	Gauging station plan & calibration of head regulator	OG	OG	✓	✓	✓	✓	✓	x	x	x	x
e	Selection of water management pilot block	x	x	✓	✓	✓	✓	✓	x	x	x	x

Annex C IMTP Results 1998 - 1999

	Activities	Kamala		Manusmara		Hardmath		Chandra Canal	Banganga	Pathraya	Mohana	Chaurjahanri
		West	East	I	II	East	West					
6	Fixation of New ISF Rate Based on O&M Costs	x	x	x	x	x	x	x	x	OG	x	x
7	Action Plan Preparation											
	a SMC formation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	b Joint walkthrough of the system	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	c Identification of rehabilitation work	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	d Design and cost estimate	OG	OG	✓	OG	✓	✓	✓	✓	✓	✓	✓
	e Prioritization of rehabilitation work	x	x	✓	x	✓	✓	✓	✓	✓	✓	✓
	f Finalization of cost estimate	x	x	✓	x	✓	✓	✓	✓	✓	✓	✓
	g Preparation of AP	x	x	✓	x	✓	✓	✓	✓	✓	✓	✓
	h MOA signing	x	x	✓	x	✓	✓	OG	OG	✓	✓	OG
8	Supervision and Quality Control by SMC	To be initiated in 1999/00								OG		
9	Performance Monitoring by WUA	To be initiated in 1999/00										

- ✓ Completed
- x To be Started
- OG On-Going

**ANNEX C.6
WUA TRAINING / ORIENTATION
CURRENT STATUS OF PHASE II IMTP SUBPROJECTS
(September 30, 1999)**

	Activities	Kamala		Manusmara		Hardmath		Chandra Canal	Banganga	Pathraya	Mohana	Chaurjahari
		West	East	I	II	East	West					
1	Basic share system development and administration	✓	✓	✓	✓	✓ ₁	✓	✓	✓	✓	✓	✓
2	Basic administration and office management	✓	✓	✓	✓	✓	✓	✓	✓ ₁	✓	✓	✓
3	Observation study tour	✓	✓	×	×	✓	✓	×	✓ ₁	✓	✓	×
4	Construction management and quality control	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	×
5	Orientation program on IMTP implementation procedures	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	×
	5.1 Preparation of AP/MOAs and WUA roles responsibilities and authority delineation and institutionalization within WUA	×	×	×	×	✓	✓	×	×	✓	×	×
6	Water management/on farm water management	✓ ₂	×	×	✓	×	×					
7	Water delivery workforce (establish training)	×	×	✓ ₃	×	✓ ₃	✓ ₃	×	×	×	×	×

✓ Completed

- 1 Completed for old WUA
- 2 Initiated for project staff & WUA Main Committee
- 3 WDF/CMWF established

× To be Started

Note Not all IMTP WUAs will receive identical training and orientation IMTP stresses a needs based approach, rather than a pre determined package of training and advice uniformly delivered at all sites Other potential IMTP WUA training/orientation sessions include basic institutional development processes, leadership development/capability development, financial management, account and record keeping, hydraulic operation (system calibration), operation & maintenance processes, resource generation and mobilization, etc

ANNEX D

CANAL OPERATION AND MAINTENANCE PLAN FOR PATHRAIYA SUBPROJECT

**ANNEX D.1
COVER PAGE OF PATHRAIYA SUBPROJECT CANAL O&M PLAN**

श्री ५ को सरकार
जलश्रोत मन्त्रालय
सिंचाई विभाग

**सिंचाई व्यवस्थापन महाशाखा
सिंचाई व्यवस्थापन हस्तान्तरण आयोजना**

**नहर संचालन तथा मर्मत संभार योजना
CANAL OPERATION AND
MAINTENANCE PLAN**

जल उपभोक्ता संस्था
पथरैया सिंचाई प्रणाली
ठाकुरद्वारा, कैलाली

ANNEX E

REPORTS AND PRESENTATIONS

ANNEX E REPORTS AND PRESENTATIONS

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ANNEX F

PROJECT ADMINISTRATION AND MANAGEMENT

ANNEX F. PROJECT ADMINISTRATION AND MANAGEMENT

F 1 General

CADI is a natural resources consulting firm that provides specialized services in land, water and professional development. CADI focuses on applied, practical, and attainable solutions to complex natural resource and institutional development problems. CADI achieves results through sound institutional management, appropriate technology, and the proper use of computers as effective problem-solving tools. The corporate mandate is to offer specialized and interdisciplinary short-term technical assistance, long-term advisory services, and training in

- ▶ Irrigation, drainage, and water resources
- ▶ Watershed, forest ecosystem planning and management
- ▶ Professional and institutional development
- ▶ Computer technologies and applications

CADI was incorporated in 1987, and the home office is located in Fort Collins, Colorado. CADI employs a core professional staff of 20 and an additional 115 associates.

F 2 Administration

USAID contracted with CADI on May 30, 1996 through the 8(a) program of the U.S. Small Business Administration (SBA). The major activities for the final reporting period (April 1, 1999 to November 20, 1999) by month are summarized below.

April 1999

- ▶ Continued meeting/talks with CIMMYT and USAID/Nepal regarding CIMMYT's potential role in IMTP
- ▶ Prepared IMTP Semi-Annual Progress Report No. 6
- ▶ Assisted the preparation of WUA Pathraiya Subproject for management transfer. Mobilized the farmers to carry out the rehabilitation works as agreed in Action Plan and Memorandum of Agreement.
- ▶ Guided Kailali DOI in preparation of the estimate for additional works for Pathraiya Subproject.
- ▶ Performed numerous activities in Mohana Subproject, including conducting several interactions with the WUA, mobilizing WUA's voluntary labor contribution, helping WUA to interact with its branch and sub-branch committees regarding their issues, problems, contribution to be proposed in Action Plan, and assisted in preparation of design and estimate of the rehabilitation works.
- ▶ Dr. W. R. Laitos, IMTP Chief of Party left Kathmandu on April 15, 1999 after accomplishing his assignment.
- Helped on preparatory needs of MOA signing, WUA strengthening, and water management.

Annex F Project Administration and Management

activities for the eastern Phase II subprojects

- ▶ Assisted HRDTB Chief in ranking the training requirements and priorities for the eastern Phase II subprojects
- ▶ Reviewed and facilitated the on-going activities of Hardinath, Chandra Canal, and Kamala Subprojects and continued support by providing orientation training, talks, and discussion programs between WUA members and subprojects in strengthening institutional activities
- ▶ Helped finalize design criteria for rehabilitation works and preparation of AP and MOA for Kamala, Hardinath, and Chandra subprojects
- ▶ Prepared and distributed the Canal Management Workforce Development Manual to all subproject managers and WUAs
- ▶ Worked with the WUAs and DIO staff to activate institutional development activities, including preparation of WUA training programs, schedules, and materials in Mohana and Pathraya Subprojects
- ▶ Participated in various WUA meetings, interactions, and farmers mobilization in rehabilitation works, i.e. canal de-silting works, inventory collection works, SMC formation, etc
- ▶ Mr R C Mahato continued his post-turnover support in Phase I subprojects, particularly in West Gandak. He resumed his assistance to accelerate the WUA strengthening activities by involving WUA executives in their tasks through individual contact and group meeting/interactions

May 1999

- ▶ Assisted Kailali DIO and the Pathraya WUA to continue rehabilitation works and help in preparing design estimate
- ▶ Interacted with Pathraya WUA and collected demands for appropriate training programs such as water measurement techniques, water distribution management, and financial/office procedure/management training
- ▶ Continued assistance to DIO Kailali in preparing the design and estimates, facilitating in preparation of AP and MOA of Mohana Subproject
- ▶ Supported a number of on-going activities at Khageri, Kamala, Chandra, Hardinath, and Manusmara Subprojects
- ▶ Assisted in preparation of training program and materials for Khageri. Support in water management and institutional development requirements in AP/MOAs for the eastern Phase II subprojects, provided assistance to DIO Chiefs of Dhanusha, Sarlahi, and Saptari Districts in finalizing the APs and cost estimates of respective subprojects
- ▶ Worked closely with Pathraya and Mohana WUAs and Kailali DIO staff, concentrating on institutional development activities
- ▶ Provided help to Kailali DIO in conducting training programs on construction planning and quality control, holding WUA meetings, assisting to prepare annual budget, and general agenda for assembly at Mohana

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- ▶ Assisted Kailali DIO and Pathraya WUA in conducting a water management training, WUA meetings, etc
- ▶ Prepared a draft of WUA's Rules under the institutional activities for Hardinath Subproject, and conducted a Training of Trainers (TOT) program in Khageri Subproject
- ▶ Mr R C Mahato continued his post turn-over support in Phase I subprojects. He continued his assistance to help the subproject and WUA strengthening activities by involving WUA executives in performing their tasks through individual contact and group meeting/interactions
- ▶ Assisted initiation of repair and maintenance works and ISF collection and recording of inventory in West Gandak
- ▶ Participated in canal cleaning works and Training of Trainers (TOT) programs in Khageri and Panchakanya Subprojects
- ▶ Mr R C Mahato, PTOS Consultant left IMTP TA team on May 26, 1999

June 1999

- ▶ Involved in Pathraya Subproject assisting SMB Engineers on water measurement activities, and helped on canal seepage measurement and on selecting the location for infiltration measurement
- ▶ Assisted SMB Engineer to improve the design and estimate and Action Plan for Mohana, Chaurjahari and Banganga Subprojects
- ▶ Helped to (i) hold AP/MOA dissemination training and MOA signing ceremony and conduct woman development training and water measurement in Hardinath, (ii) organize a motivational orientation meeting for Manusmara, (iii) provide assistance in finalizing the APs and cost estimates of Chandra Canal, Manusmara, and Hardinath
- ▶ Assisted in a series of on-going organizational strengthening and institutional development activities at Pathraya, Mohana, Banganga, West Gandak, Panchakanya and Khageri Subprojects working with WUAs and IMD/DIO staff

July 1999

- ▶ Submitted to USAID/Nepal copies of the post-training action plan/forms along with academic certificates of four ME students of Department of Irrigation, who recently completed their studies at University of Roorkee in India and Asian Institute of Technology in Thailand
- ▶ Drafted IMTP Semi-Annual Benefit and Impact Evaluation Report No 6
- ▶ Organized a meeting between IMD/IMTP Chiefs and TA team members in presence of Mr R P Satyal, DDG/DOI/Project Director, IMTP at TA office to discuss the strategy for implementing IMTP program
- ▶ Drafted a note on IMTP status and issues for the AsDB's forthcoming review mission

Annex F Project Administration and Management

- ▶ Assisted IMD/IMTP Engineers on the review of the design and estimate of Chaurjahari and Banganga Subprojects and on the field work for canal operation plan preparation
- ▶ Assisted SMB Engineer to prepare an O&M expenditure plan for Pathraya and helped him to identify the activities required to support subprojects on water management
- ▶ Drafted concept and program framework on Human Resources Development for HRDTB/DOI and presented two draft reports a guidance of "Responsibility and Function Delineation of Employee in IMTP" and "Roles and Responsibilities of WUAs and DOI in Jointly Managed Irrigation Subprojects" to the IMTP Coordinator
- ▶ Assisted WUAs and IMD/DIO staff on some of the on-going organizational strengthening, institutional development, and training activities for West Gandak, and Hardinath Subprojects
- ▶ Assisted IMD/IMTP Sociologist in preparation of current status of IMTP Phase I and II subprojects and drafted an annual program for IMTP Phase II sites under the institutional development activities

August 1999

- ▶ Dr W R Laitos, Chief of Party arrived Kathmandu on August 12, 1999, and visited IMTP Phase-I subprojects (Panchakanya and Khageri) accompanied by IMTP TA members in order to see and gather information and experience from WUA members/farmers, DOI staff regarding (a) WUAs' progress after turnover and potential post-turnover support packages for the Phase-I subprojects, (b) Canal operation and maintenance, and (c) WUAs' resources management Based on this field trip, IMTP TA team presented some suggestion and observations to IMTP/DOI Chiefs
- ▶ Dr W R Laitos met DOI and USAID/Nepal officials to discuss IMTP on-going activities and USAID/Nepal grant support for extension of IMTP TA team
- ▶ IMTP TA Teams held one-day retreat at Godavri to discuss USAID R-4 Report and to finalize IMTP success indicators
- ▶ Identified the issues of lack of O&M plan, office furnishings, and better training approach in Khageri Subproject which was the pre-requisite to handover of branches
- ▶ Visited Khageri and Panchakanya Subproject and held discussions about their O&M plan, resource collection and mobilization

September 1999

- ▶ Organized an invitational travel for Mr R P Satyal, DDG/DOI/IMTP Director, Mr J R Sharma, IMTP Coordinator, Mr S P Rajbhandari, Chief SMB/IMD and Dr K R Sharma, Chief HRDTB/IMD to participate in International Seminar/Conference of the 50th IEC Meeting and 17th International Congress of ICID held at Granada, Spain under IMTP short term training program The delegates also visited sites of irrigation management

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transfer program in Spain after attending the ICID conference. The delegates presented a paper regarding Nepal's experiences in irrigation management transfer.

- ▶ Assisted Manusmara I and II subprojects to help WUAs prepare WUA rules and regulations and AP/MOA signing
- ▶ Assisted WUA in establishing record keeping and office furnishings at Manusmara, Hardinath, and Khageri Subprojects
- ▶ Assisted in MOA signing of Mohana and WUA election at Pathraya
- ▶ USAID provided a 50 day extension until November 20, 1999 for IMTP TA grant assistance at no additional cost. All CADI/APTEC employees were renewed up to November 20, 1999
- ▶ IMTP Chief of Party briefed U.S. Ambassador to Nepal, Mr. Ralph Frank, on the status of IMTP
- ▶ IMTP Chief of Party participated in multi-national water quality conference sponsored by U.S. Embassy
- ▶ IMTP TA team participated in AsDB IMTP Review Mission
- ▶ IMTP TA team met with IMD/DOI to discuss Project targets through May 2002

October 1999

- ▶ Dr. W. R. Laitos, IMTP Chief of Party left Kathmandu
- ▶ Assisted on assessment of water availability study of Khageri and visited Padampur resettlement office in order to know activities regarding Saguntole Resettlement Plan
- ▶ Assisted DIO Chief Kailali in implementation of rehabilitation works at Mohana Subproject and conducting election of Pathraya WUA main committee
- ▶ Participated in WUA Banganga meeting for the finalizing of AP/MOA at DIO Office, and general assembly meeting at Kamala Eastern Canal for the ratification of WUA's rules

November 1999

- ▶ Provided assistance in furnishing of WUA Offices of Piparpati Parsauni, Khageri Branch #2, Pathraya, and Mohana Subprojects. Also, assisted in WUAs' activities on ISF collection, membership distribution, and WUA office management at Manusmara and Hardinath
- ▶ Suggested to IMTP to start estimate finalization of Manusmara II and Kamala, estimate approval of Chandra, work order letter to contractor in Hardinath, and annual institutional program development in all Phase II subprojects
- ▶ Submitted a draft copy of Contract Completion report of IMTP to Ms. Donna Stauffer, Chief ARD/USAID/Nepal
- ▶ Received a new draft of the RFP/SOW from USAID/Nepal for further six months IMTP TA assistance
- ▶ Prepared and distributed Canal Operation Plan (Nepali) of Pathraya Subproject

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- ▶ Prepared and submitted to IMTP Coordinator a draft report on Water Availability Study of Khageri Subproject

F 3 Staff and Consultants

As of November 20, 1999, CADI has provided the following level of effort (LOE)

Title	Long-Term Staff	LOE Approved under the Contract (months)	LOE Through 11/20/99 (months)	LOE Balance (months)
1 Home Office				
Project Manager	Tom S Sheng	8 61	7 80	81
Financial/Adm Officer	Vikki Sosovec Lorraine Haywood	8 56	5 90 <u>1 94</u> 7 94	72
Support Staff	Emily Matlin Lisa Rode Gretel Balmer Kezia Hunt	2 00	1 37 0 07 0 16 <u>0 48</u> 2 08	- 08
U S Short-term Specialist	Robert E Barrett Wayne Clyma John Eckhardt Kathleen Kilkelly W Robert Laitos John Wilkins- Wells	9 91	0 35 2 69 1 94 1 12 1 51 <u>2 30</u> 9 91	00

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Title	Long-Term Staff	LOE Approved under the Contract (months)	LOE Through 11/20/99 (months)	LOE Balance (months)
2 CADI/Kathmandu Office				
Chief of Party	W Robert Laitos	17 16	19 63	-2 47
Team Leader/ System Management Engineer	Indra Lal Kalu	39 48	41 23	-1 75
Quality Control Engineer	K K Shrestha	6 00	6 00	00
Irrigation Design Engineer	K K Shrestha	5 75	5 75	00
OM&FM Specialist	D Thapa	2 01	2 01	00
Unallocated Post Turn- Over Support Specialist	R C Mahato	9 00	3 04	5 96
Administrative and Financial Manager	N S Wagley Rudra P Subedi	42 00	20 00 <u>23 75</u> 43 75	-1 75

Annex F Project Administration and Management

Title	Long-Term Staff	LOE Approved under the Contract (months)	LOE Through 11/20/99 (months)	LOE Balance (months)
2 CADI/Kathmandu Office (continued)				
Administrative Assistant & Computer Operator	Surath Pradhan	99 74	20 00	-5 25
	S M Maskey		39 49	
	D Rajbhandari		22 75	
	R Gurung		<u>22 75</u>	
			104 99	
Driver	Kedar Raut	59 00	40 75	-3 50
	R K Shakya		<u>21 75</u>	
			60 50	
Support Staff	Sita Thakuri	67 25	42 75	-3 50
	Tirtja Khatri		6 50	
	Karna B Thapa		<u>21 50</u>	
			70 75	
3 CADI/Bharatpur, Dhanadhi, and Janakpur Offices				
Office Manager	M Adhikari	42 00	18 00	-1 75
	Rudra P Subedi		3 00	
	Surath Pradhan		<u>22 75</u>	
			43 75	
Secretary	P R Shrestha	37 82	3 82	-1 75
	R C Neupane		<u>35 75</u>	
			39 57	
Driver	K N Baral	104 32	25 75	-5 25
	Dhurba Poudel		41 07	
	Surya Budhathoki		<u>42 75</u>	
			109 57	

Annex F Project Administration and Management

Title	Long-Term Staff	LOE Approved under the Contract (months)	LOE Through 11/20/99 (months)	LOE Balance (months)
3 CADI/Bharatpur, Dhanadhi, and Janakpur Offices				
Support Staff	Lalit Thapa M P Sharma Nava R Thapa	69 32	39 07 33 75 <u>8 75</u> 81 57	-12 25
4 APTEC Subcontract				
Deputy Team Leader	R R S Neupane	40 00	41 75	-1 75
Rural Sociologist	D Upreti	40 00	41 75	-1 75
Short-term Specialist				
ID Specialist	A R Lohani T R Bhandari	18 46	2 06 3 95	00
OFWM Specialist	F Pradhan P K Sharma		2 04 0 96	
O&M Specialist	S N Jha		2 04	
Training Specialist	J R Baral		3 91	
Women in Development Specialist	Asha Batsa		<u>3 50</u> 18 46	

Annex F Project Administration and Management

Title	Long-Term Staff	LOE Approved under the Contract (months)	LOE Through 11/20/99 (months)	LOE Balance (months)
5 Other Subcontracts				
M&E Specialist	B R Bajracharya	3 00	1 50	00
	J M Pradhan		<u>1 50</u> 3 00	
Training Spec ialist/ Irrigation Engineer	Diwakar Thapa	6 63	2 00	3 00
	A M Singh		<u>1 63</u> 3 63	
Legal Specialist	M P Sharma	5 01	3 01	2 00
6 Project Support and Coordination Fund				
Secretaries to IMD	Ranjana Shrestha	41 00	42 75	-1 75
	Lata Malla	40 00	41 75	-1 75

ANNEX G

COMMODITY PROCUREMENT

**Irrigation Management Transfer Project
Commodity Inventory (above \$500 00 US)**

Purchase Date	Item	Model No	Serial No	User & Location	Price US\$	Date Inventoried
07/09/96	Cannon Fax Machine	T-30	AMJ 13088	CADI/KTM	546 69	10/29/99
07/30/96	AST Bravo Pentium Computer AST Keyboard AST VISION Color Monitor	MS 5133 SK2000REW 41A	196GUK000510 M960308503 HMEG513856	CADI/JKP	2465 00	10/29/99
07/30/96	AST Bravo Pentium Computer AST Keyboard AST VISION Color Monitor	MS 5133 SK2000REW 41A	226GUK001793 M960425513 HMEG514267	CADI/KTM	2465 00	10/29/99
07/30/96	AST Adv 824 Pent Computer AST Keyboard AST VISION Color Monitor	ADV 824 RT4958TW 41A	236GVZ000596 30361032 HMEG513852	CADI/KTM	2750 00	10/29/99
07/30/96	HP Laser Printer	Laser Jet 5	SG1SO29772	CADI/KTM	1679 00	10/29/99
07/30/96	HP Laser Printer	Laser Jet 5	SG1SO29775	CADI/JKP	1679 00	10/04/99
07/30/96	HP Laser Printer	Laser Jet 5	SG1SO29059	CADI/DHI	1679 00	10/29/99
07/30/96	UPS	PK586	962302737	CADI/KTM	500 00	10/29/99
07/30/96	UPS	PK586	962302722	CADI/JKP	500 00	11/04/99
07/30/96	UPS	PK586	961201345	CADI/DHI	500 00	10/29/99
12/02/96	Rajdoot Escort Motorcycle	RX-100	1L1598660	Saptari (DIO)	1463 84	10/29/99
12/02/96	Hero Honda Motorcycle	CDSS-100	96L12F02401	W Gandak (DIO)	1419 75	11/04/99
12/05/97	Toyota Hi Lux Pickup Truck	LN106R-PRMRS	3L4238126	CADI/JKP	17700 00	11/04/99
02/21/97	Hero Honda Motorcycle	CDSS-100	96L12F02701	W Gandak (DIO)	1419 75	11/04/99
03/26/97	Toyota Landcruiser, Prado	LJN5R-GKMRS	3L4236940	CADI/JKP	20800 00	11/04/99

Annex G Commodity Procurement

Purchase Date	Item	Model No	Serial No	User & Location	Price US\$	Date Inventoried
05/25/97	Digital Laptop Computer	TS30G	2U712E0095	CADI/KTM	3086 42	10/29/99
07/14/97	Ranx Xerox	5328	8DG2126556929	CADI/JKP	1419 75	11/04/99
08/12/97	Rajdoot Escort Motorcycle	RX-100	97G9L1-604625	Patharaiya (DIO)	1463 84	11/04/99
	Toyota Landcruiser	Model 1987	Engine No 3B-0841374 Chasis No BJ60-019322 Reg No 61-0-64	CADI/KTM		10/29/99
	Nissan Jeep	Model 1987	Engine No 5D-33169873 Chasis No JR-160781532 Reg No 61-0-66	CADI/KTM		10/29/99
	Toyota Landcruiser	Model 1991	Engine No 3B-10181206 Chasis No BJ60-023152 Reg No 61-0-68	CADI/DHI		10/29/99
	Air conditioner	Aeromaster		CADI/JKP		11/04/99
	Fax Machine	Canon Faxphone-50	VLJ0571101122 2	CADI/JKP		11/04/99
	Photocopy machine	Xerox-5017	3101007480 XJL55	CADI/KTM		10/29/99
	Photocopy machine	Xerox-5017	3101003476 XJL55	CADI/KTM		10/29/99
	Current Meter Set	622	AR 6242	CADI/JKP		11/04/99
	Air conditioner			CADI/KTM		10/29/99

ANNEX H

**OVERSEAS TRAINING AND STUDY
TOURS**

Annex H Training and Study Tours

Date	Training/Workshop/Seminar Title	Target Group	No of Participants
11/96	Study tour to the National Water Commission/Mexico and Tennessee Valley Authority/USA	DOI Officials	3
06/97	Study tour to the National Water Commission/Mexico and Tennessee Valley Authority/USA	MOWR and DOI Officials	4
08/97	Master Degree Program at the University of Roorkee, India	IMD Staff	3
09/97	Master Degree Program at the Asian Institute of Technology, Bangkok, Thailand	IMD Staff	1
08/97	Study tour on Irrigation Management Transfer/DGWRD/Indonesia	MOWR, MOF, DOI, and Subproject Office Staff	12
09/97	Participatory Irrigation Management Training, Bari, Italy	DOI Officials	2
07/98	4th International Seminar on PIM & 49th IEC Meeting & 10th Afro-Asian Regional Conference of ICID, Denpasar, Indonesia	DOI Officials	2
09/98	Capability Development Training in Participatory Irrigation Management, Bari, Italy	DOI Official	1
11/98	66th Annual Meeting of ICID International Commission at Large, Delhi, India	DOI Official	1
09/99	50th IEC Meeting and 17th International Congress of ICID, Granada, Spain	DOI Officials	4
		Total	33