

**ISPAN**  
**ANNUAL PROGRESS REPORT**

for  
**Period Ending 31 December 1989**



**IRRIGATION SUPPORT PROJECT FOR ASIA AND THE NEAR EAST**

Sponsored by the U.S. Agency for International Development



**IRRIGATION SUPPORT PROJECT FOR ASIA  
AND THE NEAR EAST**

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**INTEGRATED IRRIGATION MANAGEMENT RESOURCES**  
**Camp Dresser & McKee International Inc. (Prime Contractor)**  
**CARE**  
**Cornell University**  
**Development Alternatives, Inc.**  
**Harza Engineering Company**  
**International Science and Technology Institute, Inc.**  
**Training Resources Group**  
**The University of Arizona**

PD-ABD-673

ISA 75382

**ISPAN**  
**ANNUAL PROGRESS REPORT**  
**for**  
**Period Ending 31 December 1989**

Prepared for the Office of Technical Resources  
Agriculture and Rural Development Division  
Bureau for Asia and Near East  
U.S. Agency for International Development  
under ISPAN Activity No. 933C

Irrigation Support Project for Asia and the Near East  
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Washington, DC 20523

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## **PREFACE**

This annual progress report is submitted to the Bureau for Asia and the Near East (ANE) of the U.S. Agency for International Development by Camp Dresser & McKee International Inc. (CDM) in compliance with contract number ANE-0289-C-00-7044-00 for the Irrigation Support Project for Asia and the Near East (ISPAN).

The contract between A.I.D. and CDM requires the submission of quarterly and annual progress reports that summarize activities; identify highlights, problems and actions taken to overcome problems; identify opportunities anticipated in the forthcoming quarter, and managerial decisions pending or anticipated.

This annual report summarizes the status of activities, ISPAN technical reports, funding, and staffing for the period January-December 1989. In addition, it provides a more detailed summary of the major activities which took place in the fourth quarter, October-December 1989.

The following organizations supply the technical and managerial expertise for ISPAN.

**Camp Dresser & McKee International Inc. (CDM)**, Boston, Massachusetts, is responsible for overall management of the project, and brings extensive expertise to the technical, environmental, and engineering aspects of irrigation programs.

**CARE**, New York, New York, provides developmental field services in user participation, project sustainability, and agroforestry/natural resources management.

**Cornell University**, Ithaca, New York, plays a lead role in ISPAN's applied studies activities, agricultural engineering and agronomy, environmental issues, and social/institutional and policy/financial issues related to water management and agriculture.

**Development Alternatives, Inc. (DAI)**, Washington, D.C. provides technical assistance in agricultural science and agronomy; in social, economic, institutional, and user participation issues related to water management; and in related aspects of agricultural and irrigation policy.

**Harza Engineering Company**, Chicago, Illinois, supplies engineering services in technical assistance, training and technology transfer activities for water management, energy resources, and irrigation systems and facilities.

**International Science and Technology Institute, Inc., (ISTI)**, Washington, D.C., focuses on technical assistance and applied studies concerning the health impact of agricultural and water resource management decisions, on economic resource issues and on information management.

**Training Resources Group (TRG)**, Alexandria, Virginia, is ISPAN's primary source for human resources development, training, and social and institutional development.

**The University of Arizona**, Tucson, Arizona, contributes expertise in applied studies emphasizing irrigational energy systems, irrigation engineering, water policy and institutional development, and related natural resource issues.

## ABBREVIATIONS

AAP	-	Accelerated Agricultural Production Project
AID	-	Agency for International Development
ANE	-	Bureau for Asia and the Near East
ASA	-	Agriculture Sector Assessment
BODHI	-	Bureau of Designs for Hydropower and Irrigation Projects
CDM	-	Camp Dresser & McKee International Inc.
CDSS	-	Country Development Strategy Statement
CLSU	-	Central Luzon State University
DAI	-	Development Alternatives, Inc.
DBMS	-	Database Management Systems
DOI/ID	-	Department of Irrigation
EDI	-	Economic Development Institute
GOE	-	Government of Egypt
GOM	-	Government of Maharashtra
GOMP	-	Government of Madhya Pradesh
GON	-	Government of Nepal
GOP	-	Government of Pakistan
GSL	-	Government of Sri Lanka
HPSIS	-	High Performance Sederhana Irrigation Systems Program
HRD	-	Human Resource Development
IAV	-	Institute of Agronomy and Veterinary Science, Hassan II
IIMI	-	International Irrigation Management Institute
IMP	-	Irrigation Management Project
IMPSP	-	Irrigation Management Policy Support Program
IMS	-	Irrigation Management Systems
ISPAN	-	Irrigation Support for Asia and the Near East
ISTI	-	International Science & Technology Institute, Inc.
MPMIP	-	Madhya Pradesh Minor Irrigation Project
MPWWR	-	Ministry of Public Works and Water Resources
NESSI	-	Northeast Small Scale Irrigation Project
NGO	-	Non-government organization
NIA	-	National Irrigation Administration
O/IWR	-	Office of Irrigation and Water Resources
RID	-	Royal Irrigation Department
RIIP	-	Regional Irrigation Improvement Project
RTG	-	Royal Thai Government
SAGE	-	Senior Advisory Group of Experts
TRG	-	Training Resources Group
TSC	-	Technical Support Center
UNDP	-	United Nations Development Program
WALMI	-	Water and Land Management Institute



## Chapter 1

### TECHNICAL ACHIEVEMENTS

#### 1.1 ACHIEVEMENTS BY PROJECT COMPONENT

##### 1.1.1 Technical Assistance

##### Program Support

Eastern Waters Initiative: The London Meeting was held in December. The meeting, briefly attended by Prime Minister Margaret Thatcher, proved to be an important watershed in the articulation of EWI, precipitating a major revision of the approach and contents of the program, and leading to a request for additional funds. The meeting was called to discuss and endorse the Action Plan for Flood Control in Bangladesh, a twenty-six component short-term action and study program prepared by the World Bank after the G-7 meetings in Paris. The Action Plan contains eleven major components--regional or specific feasibility studies, and action programs, such as town and cyclone protection and flood forecasting and preparedness--and fifteen supporting activities--studies and pilot projects to provide data required for investment decisions.

Ambassador to Bangladesh, Willard DuPree, led the U.S. delegation, which had reviewed drafts of the Action Plan and prepared a strategy for U.S. support. Participants raised a number of issues regarding the plan and the feasibility of completing it on schedule. Nonetheless, the meeting concluded with donor pledges to fund each element of the program. The World Bank agreed to coordinate the implementation of the Action Plan, its components and studies, with U.N.D.P. funding, and the Government of Bangladesh established an elaborate organizational arrangement to facilitate the process.

The U.S. agreed in London to take the lead in five supporting activities:

- \* 14. Socio-Economics Study--Flood Response
- \* 15. Socio-Economics Study--Land Acquisition
- \* 16. Environment Study
- \* 19. Geographic Information System (GIS)
- \* 23. Flood Proofing Pilot Project

Subsequently, Sweden agreed to undertake the Land Acquisition Study, leaving the U.S. with four studies. The Flood Response and Environment Studies were identified as high priority studies to be launched

quickly to establish guidelines and patterns for regional studies to follow, and the U.S. committed itself to do so, using ISPAN as a mechanism for rapid mobilization.

The meeting adjourned with plans for donors and government officials to meet in Dhaka in January to draft scopes of work for the components and studies.

- Sri Lanka: The Government of Sri Lanka (GSL) approved the proposed Irrigation Management and Policy Support Activity. USAID issued a PIO/T and the GSL appointed a coordinator.
- Thailand: ISPAN's applied study was the focus of an October national workshop on the future of medium scale irrigation systems development in Northeast Thailand. The study team were active presenters. The report's recommendations were discussed in detail by the participants from many Royal Thai Government (RTG) agencies.

### **Project Support**

- Egypt: ISPAN facilitated workshops in Egypt tied to component start-up of the Irrigation Management Systems Project.
- India: ISPAN provided continuing technical expertise to USAID/Delhi's Maharashtra Minor Irrigation Project in the design and implementation of prototype operations and scheduling models.

### **Project Evaluation**

- Philippines: ISPAN completed the evaluation of the Accelerated Agricultural Production Project.

### **1.1.2 Applied Studies**

ISPAN presently has a number of applied studies underway or recently initiated during the period. Studies underway are as follows:

- Indonesia: The six-month buy-in study, Privatization and Sustainability of Small-Scale Irrigation: A Reassessment of Sederhana and HPSIS, was initiated during the period with a one-week team planning meeting in Jakarta of the study's principal researchers.
- Pakistan: The longterm in-country researcher returned to the States after more than a year's residence in Pakistan. Based at Cornell University, he is now analyzing field data and preparing a series of reports. An initial paper has been released by IIMI, the ISPAN's

collaborator on the study, as Pakistan Country Paper No.1: Private Tube Well Development in Pakistan's Punjab: Review of Past Programs/Policies and Relevant Research.

- U.S.: ISPAN, in support of a World Bank effort to determine research needs, is conducting a core-funded overview of irrigation and drainage research in or by the United States.
- Sri Lanka: ISPAN initiated a core-funded applied study on improving irrigation water management scheduling using field updated simulation models, focusing largely on the Gal Oya Project.

ISPAN held a Program Development Meeting on 24-25 October at which issues papers were presented on a range of topics dealing with irrigation and water resources development. The papers are included in Annex F. Following the meeting three areas were selected for elaboration into full proposals:

- systems turnover and local participation: applied studies on improving systems performance through systems turnover and local participation in water management, including development of a conceptual framework, assessment of government policies on turnover, and case studies of systems turnover in Asia.
- farmers and agencies: a literature review examining changing roles for water users and irrigation agencies
- improving irrigation systems performance through improved design, operations and maintenance: a review of design processes for constructing new and rehabilitated irrigation systems for improved systems performance

A core group, including the AID Project Officer, the ISPAN Program Manager, and researchers, met at Cornell University in November to define the studies and designate responsible parties for preparing the proposals.

### **1.1.3 Regional Institutions**

Central Luzon State University in the Philippines (CLSU) and the Institute of Agronomy and Veterinary Science Hassan II (IAV) in Morocco have continued their involvement in designing applied studies. IAV sent a representative to the October ISPAN Program Development Meeting. At the meeting, IAV agreed to prepare a proposal on systems design and user participation. CLSU could not attend, but was expected to work closely with Cornell University on a proposal concerning systems turnover.

#### **1.1.4 Human Resource Development and Technology Transfer**

ISPAN designed and facilitated a seventh project start-up workshop for the Irrigation Management Systems (IMS) project in Egypt. This workshop was conducted in November for the Main Systems Management component.

Planning meetings were held with the IIMI Training Specialist and the Director of the International Irrigation Center at the Institute of Agronomy and Veterinary Science Hassan II (IAV) in Morocco. Discussions with IIMI centered on possible collaboration in implementing the Public Sector Irrigation Training Guidelines for Preparing Strategies and Programs model developed by the Economic Development Institute of the World Bank and A.I.D. Several countries has expressed an interest in developing an overall training strategy for their water sector, including Malaysia, Pakistan, Egypt and India. Plans were made for the IIMI Training Specialist and the ISPAN HRD Program Manager to collaborate on a series of workshops in Malaysia.

The discussions with IAV focused on the possibility of integrating a management component into a series of technical training modules being developed as part of a World Bank Project in Morocco. A trip is scheduled for early next year to explore possibilities for developing this management component.

ISPAN conducted a one day Eastern Waters Initiative Research Planning Conference. The conference objectives were to identify a wide range of research issues, including action research and research that will provide short-term results for EWI.

#### **1.2 STATUS OF ACTIVITIES**

Data on all ISPAN activities as of 31 December 1989, including the identification number, name, relevant project component, issues addressed, funding source, budget, and present status for each activity, are presented in Table 1.

#### **1.3 TECHNICAL REPORTS**

Project technical reports, and the status of each through the end of December, are listed in Table 2.

#### **1.4 ACTIVITY STATUS**

The status of activity (AIP) implementation is provided in Table 3.

## **1.5 ACTIVITY STAFFING**

Table 4 provides the names of technical experts used on activities and their institutional relationship to ISPAN.

TABLE 1 - DATA ON ISPAN ACTIVITIES  
(as of 31 December 1989)

ACT. NO.	ACTIVITY NAME	LOCATION	COMPONENT	ISSUE	FUNDING		LOE (P/D)	STATUS
					CORE	BUY-IN		
601A	TRNG. NEEDS & STRAT. FOR IRR. AGRI. DEV.	REGIONAL	TT	3	\$84,055		99	F
602A	PROJECT MANAGEMENT SYSTEM FOR MIS	EGYPT	TT	3	\$35,050		67	F
603A	MANAGEMENT TRAINING PROGRAM	EGYPT	TT	3	\$14,760		14	F
604A	EVALUATION OF ISM-I PROJECT	PAKISTAN	TA	2		\$141,532	272	F
605A	SSIMP START-UP WORKSHOP	INDONESIA	TT	2		\$18,586	30	F
606A	MANAGEMENT TRAINING ASSESSMENT	INDONESIA	TT	3	\$8,026		6	F
607A	PID PREPARATION	TUNISIA	TA	2	\$2,132		6.5	F
608A	IDENTIFICATION OF AN ACTION PROGRAM TO ADDRESS STRATEGIC ISSUES IN THE IRRIGATION SECTOR, ENERGY RELATED	EGYPT	TA	1	\$44,988		56	F
609A	SECOND REGIONAL IRRIGATION MANAGEMENT WORKSHOP	REGIONAL	IN	3,5	\$65,722		52	F
610A	HALWD - REDESIGN	INDIA	TA	2		\$34,998	40	F
611A	TOT WORKSHOP ON TPMS	BUREAU	TT	3	\$4,516		6	F
612A	ISPAN ACTIVITY INVESTIGATION COORDINATION & DEVELOPMENT IN INDIA	INDIA	TA	1	\$7,631		22	F
613A	SUPPLEMENTAL IRRIGATION PP	MOROCCO	TA	2		\$76,446	158	F
614A	SUPPLEMENTAL IRRIGATION PP DESIGN TPM	MOROCCO	TA	2	\$4,102		7	F
615A	ISPAN ANNUAL PLANNING WORKSHOP	BUREAU	IN	1	\$28,529		36	F
616A	SPECIAL STUDIES SOWs FOR IWRM PROJECT	TUNISIA	TA	2	\$3,293		7	F
617A	REGIONAL INSTITUTIONS SITE VISITS	MOROCCO & PHILIPPINES	RI	2,3,4	\$6,460		2	F
618A	MANUSCRIPT - COST RECOVERY & FINANCING	BUREAU	TT	5	\$1,358		0	F
619A	MPMIP (MADHYA PRADESH) TASK - 1	INDIA	TA	2		\$79,169	141	A
620A	MPMIP (MADHYA PRADESH) TASK - 2	INDIA	TA	4		\$54,424	142	A
621A	MPMIP (MADHYA PRADESH) TASK - 3	INDIA	TA	3		\$83,271	114	A
622A	MPMIP (MADHYA PRADESH) TASK - 4	INDIA	TA	3		\$115,452	142	A

**TABLE 1 - DATA ON ISPAN ACTIVITIES**  
(as of 31 December 1989)

ACT. NO.	ACTIVITY NAME	LOCATION	COMPONENT	ISSUE	FUNDING		LOE (P/D)	STATUS
					CORE	BUY-IN		
623A	MPMIP (MADHYA PRADESH) TASK - 5	INDIA	TA	3		\$83,360	109	A
624A	EVALUATION OF THE COMMAND WATER MANAGEMENT PROJECT	PAKISTAN	TA	2,3,4		\$115,641	182	A
625A	EVALUATION OF IM&T PROJECT	INDIA	TA	3		\$47,402	67	A
626A	WATER MANAGEMENT TECH. & RES. SPECIALIST	INDIA	TA	1	\$154,225		260	A
627A	IRRIGATION STRATEGY FOR THE 1990's	BUREAU	TA	1	\$28,349		52	F
628B	AAP APPLIED STUDIES DESIGN	PHILIPPINES	AS	3,4	\$4,931		19	F
629B	REVIEW OF MISSION ACTIVITIES IN THE WATER SECTOR	BANGLADESH	TA	1	\$14,175		17	A
630B	PRIVATE TUBEWELL DEVELOP. APPLIED STUDY	PAKISTAN	AS	3	\$83,339		275	A
631B	MMIP (MAHARASHTRA) MICRO-COMPUTERS	INDIA	TA	3		\$82,613	117	A
632B	MAHARASHTRA IRRIGATION TECHNOLOGY MANAGEMENT PROJECT (PHASE 1)	INDIA	TA	3		\$6,638	11	A
633B	INSTITUTIONAL SUPPORT FOR IRRIGATION SECTOR POLICY IMPLEMENTATION	SRI LANKA	TA	4,5	\$27,496		35	A
634B	EASTERN WATERS STUDY	REGIONAL	TA	1,2		\$264,781	628	A
635B	TRAINING STRATEGY FOLLOW-UP	REGIONAL	TT	3	\$40,050		79	F
636B	PROFESSIONAL DEVELOP. START-UP WORKSHOP	EGYPT	TT	3		\$18,124	44	A
637B	RIIP START-UP WORKSHOP	EGYPT	TT	3		\$3,500	54	A
638B	WATER RESEARCH CENTER PROJECT START-UP WORKSHOP	EGYPT	TT	3		\$26,108	37.5	A
639B	ISPAN ANNUAL REPORT #1	BUREAU	IN	1	\$23,805		57	F
640B	IRRIGATION MANAGEMENT SYSTEMS EVALUATION	EGYPT	TA	2,3		\$80,271	113	A
641B	NESSI APPLIED STUDY	THAILAND	AS	2,3,4		\$62,962	342	A
642B	NESSI APPLIED STUDIES SUPERVISION	THAILAND	AS	2,3,4	\$19,002		30	A
643B	ISMP MONITORING PROCEDURES & WORKSHOP	SRI LANKA	TT	3		\$58,144	43	A
644B	TRAINING STRATEGIES WORKSHOP REPORT	REGIONAL	TT	3	\$30,000		51	F

TABLE 1 - DATA ON ISPAN ACTIVITIES  
(as of 31 December 1989)

ACT. NO.	ACTIVITY NAME	LOCATION	COMPONENT	ISSUE	FUNDING		LOE (P/D)	STATUS
					CORE	BUY-IN		
645B	DAM SAFETY CONFERENCE	INDIA	TT	2		\$11,454	0	F
646B	IRRIGATION MGMT. PROJECT MID-TERM EVAL.	NEPAL	TA	3,4,5		\$84,363	163	A
647B	WATER SECTOR ASSESSMENT	BANGLADESH	TA	1		\$39,836	70	A
648B	MAHARASHTRA MIP - MODELING	INDIA	TA	2,3		\$159,752	260	A
649B	MAHARASHTRA MIP - SCHEDULING	INDIA	TA	3,4		\$78,670	13	A
650B	ISMP MONITORING PROCEDURES AND WORKSHOP SUPERVISION	SRI LANKA	TT	3	\$5,595		9	A
651B	INSTITUTIONAL STRENGTHENING REGIONAL NETWORK	REGIONAL	IN	3	\$3,237		5	A
652B	SSIMP MID-TERM EVALUATION	INDONESIA	AS	4		\$90,084	141.5	A
653B	TECH TRANSFER/INFORMATION SHARING	REGIONAL	TT	1	\$12,524		24	A
654B	SEDERHANA & HPSIS SYSTEMS REASSESSMENT APPLIED STUDY	INDONESIA	AS	2,4		\$57,648	87.5	A
655B	PLANNING STUDIES AND MODELS START-UP WORKSHOP	EGYPT	TT	3		\$34,846	50.5	A
656B	PREVENTATIVE MAINTENANCE START-UP WORKSHOP	EGYPT	TT	2		\$37,914	51	A
657B	SURVEY & MAPPING START-UP WORKSHOP	EGYPT	TT	2		\$38,727	55.5	A
658B	MAIN SYSTEM MANAGEMENT START-UP WORKSHOP	EGYPT	TT	2		\$32,285	51.5	A
659B	IMS STEERING COMMITTEE START-UP WORKSHOP	EGYPT	TT	3		\$38,362	55.5	A
660B	ANE IRRIGATION STRATEGY	BUREAU	TA	1	\$44,804		93	A
661B	EASTERN WATERS STUDY FOLLOW-UP	INDIA	TA	1		\$13,857	18	A
662B	COST RECOVERY WORKSHOP	INDIA	TT	5		\$39,783	30	A
663B	AAP PROJECT MID-TERM EVALUATION	PHILIPPINES	TA	3		\$55,757	86.5	A
664B	IMP REDESIGN	NEPAL	TA	1		\$53,542	150.5	A
666B	TRAINING GUIDELINES REPORT TRANSLATION	REGIONAL	TT	1	\$5,257		15	A



**TABLE 1 - DATA ON ISPAN ACTIVITIES**  
(as of 31 December 1989)

ACT. NO.	ACTIVITY NAME	LOCATION	COMPONENT	ISSUE	FUNDING		LOE (P/D)	STATUS
					CORE	BUY-IN		
667B	NESSI CLOSING POLICY WORKSHOP	THAILAND	TT	1		\$33,183	93	A
668B	BASIN MANAGEMENT STUDY DESIGN	THAILAND	AS	1		\$16,124	37	A
669B	SEDERHANA APPLIED STUDY LOCAL STAFFING	INDONESIA	AS	4		\$176,838	1911	A
670B	EASTERN WATERS INITIATIVE (EWI)	REGIONAL	TA	1		\$660,025	40	A
671B	IRRIGATION AND DRAINAGE RESEARCH PAPERS	BUREAU	AS	2	\$27,827		30	A
672B	EWI/BANGLADESH - WATER MANAGEMENT ADVISOR	BANGLADESH	TA	1	\$720,055		66	A
673B	EWI/BUREAU - REGIONAL RESEARCH COORD.	BUREAU	TA	1	\$224,521		15	A
674B	EWI/BUREAU - STUDIES, SYNTHESIS, AND CONCEPT PAPERS, RESEARCH SUPPORT	BUREAU	TA	1	\$315,070		2	A
675B	EWI/BUREAU - ATTENDANCE/PARTICIPATION AT INTERNATIONAL MEETINGS	BUREAU	TA	1	\$119,896		5	A
676C	SOW FOR IMS EVALUATION	EGYPT	TA	2		\$21,536	41	A
677C	IMPROVING IRR. SCHEDULING APPLIED STUDY	BUREAU	AS	2	\$17,452		17	A
678C	MOBILIZING RESOURCES	EGYPT	AS	5	\$6,277		13.5	A
679C	OCCASIONAL PAPER ON START-UP WORKSHOPS	BUREAU	TT	1	\$4,572		10.5	A
683C	INTERNATIONAL DRAINAGE WORKSHOP	BUREAU	TT	2	\$13,320		3	A
	TOTAL				\$2,256,401	\$3,228,008		

**NOTE:**

**COMPONENT**

TA - TECHNICAL ASSISTANCE  
 TT - TECHNOLOGY TRANSFER  
 IN - INFORMATION NETWORK  
 RI - REGIONAL INSTITUTIONS  
 AS - APPLIED STUDIES

**ISSUES**

1 - STRATEGIC THINKING IN SECTOR  
 2 - IRRIGATION SYSTEM PERFORMANCE  
 3 - PUBLIC SECTOR AGENCY PARTICIPATION  
 4 - PRIVATE SECTOR PARTICIPATION  
 5 - ECONOMIC AND FISCAL POLICY

LOE (P/D) = LEVEL OF EFFORT/  
 PERSON DAYS

STATUS: A - ACTIVE  
 F - FINISHED

TABLE 2  
ISPAN REPORT LIST As of 31 December 1989

AIP	COUNTRY	DESCRIPTION	ACTIVITY MANAGER	REPORT TYPE	SITUATION/NEXT STEPS
601A	REGIONAL	Guidelines for Improved Training Strategies	J. PETTIT	WP IR-8	Joint report of USAID/World Bank (KA) draft being reviewed. Completed. To be distributed. Review to be completed end of May
602A	EGYPT	Project Mgmt System for IMS	J. PETTIT	FR	Completed
603A	EGYPT	Mgmt Training Program	J. PETTIT	FR	Completed
604A	PAKISTAN	Evaluation of ISM-1 Project	W. GARVEY	IR-2	Completed/Distributed
605A	INDONESIA	SSIMP Start-up Workshop	J. PETTIT	IR-1	Completed/Distributed
606A	INDONESIA	Mgmt Training Assessment	F. BESLEY	TR	Completed
607A	TUNISIA	PID Preparation	P. REISS	PD	Completed
608A	EGYPT	Energy Issues in the Irrig. Sector	W. GARVEY	FR	Completed
609A	REGIONAL	Second Regional Irrigation Mgmt Workshop	P. REISS	IR-7	Completed/Distributed
610A	INDIA	HALWD - Redesign	M. WALTERS	IR-3	Completed/Distributed
611A	BUREAU	TOT Workshop on TPMs		TR	Completed
612A	BUREAU	ISPAN Activity Investigation Coordination & Development in India	F. BESLEY	TR	Completed
613A	MOROCCO	Supplement Irrigation pp	P. REISS	PP	Completed
614A	MOROCCO	Supplemental Irrigation PP Design TPM	P. REISS	TR	Completed
615A	BUREAU	ISPAN Annual Planning Workshop	P. REISS	IR-4	Completed/Distributed to Steering Committee (Ann. Plan FY 89)
616A	TUNISIA	Special Studies SOWs for IWRM Project	P. REISS	WP	Completed
617A	MOROCCO & PHILIPPINES	Regional Institutions Site Visits	P. REISS	TR	Completed
618A	ANE BUREAU	Manuscript - Cost Recovery and Financing	F. BESLEY	WP	Ongoing
619A	INDIA	MPMIP (Madhya Pradesh)-Task 1	P. REISS	FR	Ongoing; First report submitted to Mission
620A	INDIA	MPMIP (Madhya Pradesh)-Task 2	P. REISS	IR	Ongoing; First report submitted to Mission
621A	INDIA	MPMIP (Madhya Pradesh)-Task 3	W. GARVEY	FR	Ongoing
622A	INDIA	MPMIP (Madhya Pradesh)-Task 4	W. GARVEY	FR	Ongoing

TABLE 2  
ISPAN REPORT LIST As of 31 December 1989

AIP	COUNTRY	DESCRIPTION	ACTIVITY MANAGER	REPORT TYPE	SITUATION/NEXT STEPS
623A	INDIA	MPMIP (Madhya Pradesh)-Task 5	K. ALISON	FR	Not yet initiated; money transferred to 665B (evaluation)
624A	PAKISTAN	Evaluation of the Command	W. GARVEY	IR-5	Completed/Distributed
625A	INDIA	Evaluation of IM&T Project	W. GARVEY	IR-6	Completed/Distributed
626A	INDIA	Water Mgmt Tech. and Research Specialist	F. BESLEY	FR	Ongoing
627A	BUREAU ANE	Irrigation Strategy for the 1990's	W. GARVEY	WP	WP completed; to be edited into IR to be assigned later
628B	PHILIPPINES	AAP Applied Studies Design	P. REISS	FR	Completed
629B	BANGLADESH	Review of Mission Activities in the Water Sector	W. GARVEY	FR	Completed
630B	PAKISTAN	Private Tubewell Development Applied Study	P. REISS	IR	Ongoing, monthly progress reports submitted
631B	INDIA	MMIP (Maharashtra) Micro-computers	W. GARVEY	FR	Ongoing; Rec'd report of first Mission from Sheng; scheduling second Mission
632B	INDIA	Maharashtra Irrigation Technology Management Project (Phase I)	W. GARVEY	IR-14	Determine Mission interest in final report
633B	SRI LANKA	Institutional Support for Irrigation-Sector Policy Implementation	W. GARVEY	FR	Completed
634B	REGIONAL	Eastern Waters Working Group	W. GARVEY	IR	Report completed and delivered to A.I.D.
635B	REGIONAL	Phase II Guidance Document	K. ALISON	SEE 601A	
636B	EGYPT	Professional Dev. Start-up Workshop	K. ALISON	IR-12	Completed/Distributed
637B	EGYPT	RIIP Start-up Workshop	K. ALISON	IR-17	Completed/Distributed
638B	EGYPT	Water Research Ctr. Proj. Start-up Wrksp	K. ALISON	IR-13	Completed/Distributed
639B	BUREAU	ISPAN Annual Report #1	R. THOMAS	IR-10,11	Completed/Distributed
640B	EGYPT	Irrigation Systems Mgmt Proj. Eval.	P. REISS	IR-18	Completed/Distributed
641B	THAILAND	NESSI Applied Study	P. REISS	IR-21	Completed/Distributed
642B	THAILAND	NESSI Applied Study Supervision	P. REISS	SEE 641B	
643B	SRI LANKA	ISMP Monitoring Procedures & Wrkshp.	K. ALISON	IR-15	Completed/Distributed

TABLE 2  
ISPAM REPORT LIST As of 31 December 1989

AIP	COUNTRY	DESCRIPTION	ACTIVITY MANAGER	REPORT TYPE	SITUATION/NEXT STEPS
644B	REGIONAL	Training Strategies Support Workshop	K. ALISON	SEE 601A	
645B	INDIA	Dam Safety Conference	B. THOMAS		
646B	NEPAL	IMP Mid-Term Evaluation	P. REISS	IR-19	Completed/Distributed
647B	BANGLADESH	Water Sector Assessment	W. GARVEY	IR-?	Report in progress
648B	INDIA	Maharashtra Minor Irrigation Project - Modeling	W. GARVEY	IR	
649B	INDIA	Maharashtra Minor Irrigation Project - Scheduling	P. REISS	IR-?	Send to NSP, Meredith, Walter, Sheng, Levine, Merriam
650B	SRI LANKA	ISMP Monitoring Procedures & Workshop Supervision	K. ALISON	SEE 643B	
651B	REGIONAL	Inst. Strengthening Reg. Network	P. REISS		
652B	INDONESIA	SSIMP Mid-term Evaluation	P. REISS	IR-23	Completed/Distributed
653B	REGIONAL	Tech Transfer/Information Sharing	K. ALISON		
654B	INDONESIA	Sederhana & HPSIS Systems Reassessment Applied Study	P. REISS		
655B	EGYPT	Planning Studies & Models Start-up Workshop	K. ALISON	IR-19	Completed/Distributed
656B	EGYPT	Preventative Maintenance Start-up Workshop	K. ALISON	IR-20	Completed/Distributed
657B	EGYPT	Survey & Mapping Start-up Workshop	K. ALISON		Postponed
658B	EGYPT	Main System Management Start-up Wrksp.	K. ALISON	IR-24	Scheduled for distribution in January
659B	EGYPT	IMS Steering Committee Start-up Wrksp.	K. ALISON	IR-22	Report in progress
660B	BUREAU	ANE Irrigation Strategy	K. ALISON		
661B	INDIA	Eastern Waters Study Follow-up	W. GARVEY		
662B	INDIA	Cost Recovery Workshop	W. GARVEY		
663B	PHILIPPINES	AAP Project Mid-Term Evaluation	P. REISS		
664B	NEPAL	IMP Redesign	P. REISS		
665B	INDIA	Madhya Pradesh Mid-term Evaluation	P. REISS		

TABLE 2  
ISPAN REPORT LIST As of 31 December 1989

AIP	COUNTRY	DESCRIPTION	ACTIVITY MANAGER	REPORT TYPE	SITUATION/NEXT STEPS
666B	REGIONAL	Training Guidelines Report Translation	K. ALISON		Translations being done
667B	THAILAND	NESSI Closing Policy Workshop	P. REISS		
668B	THAILAND	Basin Management Study Design	P. REISS		
669B	INDONESIA	Sederhana Applied Study Local Staffing	P. REISS		
670B	REGIONAL	Eastern Waters Initiative (EWI)	T. GARVEY		
671B	BUREAU	Irrigation and Drainage Research Papers	P. REISS		
672B	BANGLADESH	EWI/Bangladesh - Water Mngmt. Advisor	T. GARVEY		
673B	BUREAU	EWI/Bureau - Regional Res. Coord.	T. GARVEY		
674B	BUREAU	EWI/Bureau - Studies, Synthesis, and Concept Papers, Research Support	T. GARVEY		
675B	BUREAU	EWI/Bureau - Attendance/Participation at International Meetings	T. GARVEY		
676C	EGYPT	SOW for IMS Evaluation	K. ALISON		
677C	BUREAU	Improving Irrigation Scheduling Applied Study	P. REISS		
678C	EGYPT	Mobilizing Resources	K. ALISON		
679C	BUREAU	Occasional Paper on Start-up Wrkshps	K. ALISON		
683C	BUREAU	International Drainage Workshop	K. ALISON		

KEY

TR = Trip Report (Focus: TSC, Bureau)  
 FR = Field Report (Focus: Mission)  
 WP = Working Paper or other informal report  
 PP = Project Paper  
 PD = PID (Project Identification Document)  
 IR = ISPAN Report (Numbered)  
 OR = Reports produced by other organizations

TABLE 3  
AIP Status as of 31 December 1989

AIP	COUNTRY	DESCRIPTION	ACT. MNGR	AIS	STATUS	NEXT STEPS
601A	REGIONAL	Workshop on Training Needs & Strategy for Irrigation Agricultural Development	J. PETTIT	101A	F	Prepare to close
602A	EGYPT	Project Mgmt System for IMS	J. PETTIT	105A	F	Prepare to close
603A	EGYPT	Mgmt Training Program	J. PETTIT	105A	F	Prepare to close
604A	PAKISTAN	Evaluation of ISM-1 Project	W. GARVEY	107A	F	Prepare to close
605A	INDONESIA	SIMP Start-up Workshop	J. PETTIT	109A	F	Prepare to close
606A	INDONESIA	Mgmt Training Assessment	F. BESLEY	109A	F	Prepare to close
607A	TUNISIA	PID Preparation	P. REISS	118A	F	Prepare to close
608A	EGYPT	Identification of an Action Program to Address Strategic Issues in the Irrigation Sector Related to Energy	W. GARVEY	114A	F	Prepare to close
609A	REGIONAL	Second Regional Irrigation Mgmt Workshop	P. REISS	117A	F	Prepare to close
610A	INDIA	HALMD - Redesign	M. WALTER	116A	F	Prepare to close
611A	BUREAU	TOT Workshop on TPMS	J. PETTIT	129A	F	Prepare to close
612A	INDIA	ISPAN Activity Investigation Coordination & Development in India	F. BESLEY	135A	F	Prepare to close
613A	MOROCCO	Supplement Irrigation PP	P. REISS	127A	F	Prepare to close
614A	MOROCCO	Supplemental Irrigation PP Design TPM	P. REISS	127A	F	Prepare to close
615A	BUREAU	ISPAN Annual Planning Workshop	P. REISS	132A	F	Prepare to close
616A	TUNISIA	Special Studies SOWs for IWRM Project	P. REISS	130A	F	Prepare to close
617A	MOROCCO & PHILIPPINES	Regional Institutions Site Visits	P. REISS		F	Prepare to close
618A	ANE BUREAU	Manuscript - Cost Recovery & Financing	F. BESLEY		F	Prepare to close
619A	INDIA	MPMIP (Madhya Pradesh) - Task 1	P. REISS	113A	A	Next trip uncertain
620A	INDIA	MPMIP (Madhya Pradesh) - Task 2	P. REISS	113A	A	Next trip uncertain

TABLE 3  
AIP Status as of 31 December 1989

AIP	COUNTRY	DESCRIPTION	ACT. MNGR	AIS	STATUS	NEXT STEPS
621A	INDIA	MPMIP (Madhya Pradesh) - Task 3	W. GARVEY	113A	A	Field trip to be scheduled after local consultant does initial training.
622A	INDIA	MPMIP (Madhya Pradesh) - Task 4	W. GARVEY	113A	A	Visit by Borg & Lee proposed for late January (no reply by Mission)
623A	INDIA	MPMIP (Madhya Pradesh) - Task 5	K. ALISON	113A	A	Mission has requested shifting this funding to MPIMP evaluation. PR will rework budget. Amending PIO/T has arrived. Close 623A & open new activity (AIS 160B)
624A	PAKISTAN	Evaluation of the Command Water Mgmt Project	W. GARVEY	134A	F	Prepare to close
625A	INDIA	Evaluation of IM&T Project	W. GARVEY	121A	F	Will transfer overrun to 626A
626A	INDIA	Water Mgmt Tech. & Research Specialist	W. GARVEY	135A	A	Will Mission authorized follow-up activities for M. Walter?
627A	BUREAU ANE	Irrigation Strategy for the 1990s	W. GARVEY	137A	F	Prepare to close
628B	PHILIPPINES	AAP Applied Studies Design	P. REISS	126A	F	Prepare to close
629B	BANGLADESH	Review of Mission Activities in the Water Sector	W. GARVEY	133A	F	
630B	PAKISTAN	Private Tubewell Development Applied Study	P. REISS	140A	A	Report writing in progress
631B	INDIA	MMIP (Maharashtra) Micro-computers	W. GARVEY	141A	A	Review trip reports from Sheng; schedule next visit
632B	INDIA	Maharashtra Irrigation Technology Mgmt Project (Phase I)	W. GARVEY	138B	A	Telex sent to Mission 8/22 for status & interest in Walter Buydens
633B	SRI LANKA	Institutional Support for Irrigation-Sector Policy Implementation	W. GARVEY	142A	F	
634B	BUREAU	Eastern Water Studies	W. GARVEY	149B	A	
635B	REGIONAL	Training Strategy Follow-up	K. ALISON	136A	A	Scope and budget reworked. Waiting for approval from TG
636B	EGYPT	Professional Dev. Start-up Workshop	K. ALISON	153B	F	Prepare to close
637B	EGYPT	RIIP Start-up Workshop	K. ALISON	154B	F	Prepare to close
638B	EGYPT	Water Research Center Project Start-up Workshop	K. ALISON	155B	F	Prepare to close

TABLE 3  
AIP Status as of 31 December 1989

AIP	COUNTRY	DESCRIPTION	ACT. MNGR	AIS	STATUS	NEXT STEPS
639B	BUREAU	ISPAN Annual Report #1	R. THOMAS		F	Prepare to close
640B	EGYPT	Irrigation Mgmt Systems Project Evaluation	P. REISS	152B	F	Prepare to close
641B	THAILAND	NESSI Applied Study	P. REISS	103A	A	Prepare to close
642B	THAILAND	NESSI Applied Study Supervision	P. REISS	103A	A	Prepare to close
643B	SRI LANKA	ISMP Monitoring Procedures & Workshop	K. ALISON	1488	A	Report sent 10/9. Monitoring instruments being developed
644B	REGIONAL	Training Strategies Support Workshop	K. ALISON	101A	F	Prepare to close
645B	INDIA	Dam Safety Conference	R. THOMAS		F	Prepare to close
646B	NEPAL	IMP Mid-Term Evaluation	P. REISS	151B	F	Prepare to close
647B	BANGLADESH	Water Sector Assessment	W. GARVEY	(629B)	A	Report in progress
648B	INDIA	Maharashtra Minor Irrigation Project - Modeling	W. GARVEY	156B	A	Sheng trip scheduled about 1 March. Molden in field.
649B	INDIA	Maharashtra Minor Irrigation Project - Scheduling	W. GARVEY	157B	A	Schedule 2nd visit for Oest
650B	SRI LANKA	ISMP Monitoring Procedures & Workshop Supervision	K. ALISON	(643B)	F	Prepare to close. All costs transferred to 643B
651B	REGIONAL	Institutional Strengthening Regional Network	P. REISS		F	Prepare to close
652B	INDONESIA	SSIMP Mid-Term Evaluation	P. REISS	158B	F	Prepare to close
653B	REGIONAL	Tech Transfer/Information Sharing	K. ALISON		A	
654B	INDONESIA	Sederhana & HPSIS Systems Reassessment Applied Study	P. REISS	159B	A	Next trip for Reiss in April
655B	EGYPT	Planning Studies and Models Start-up Workshop	K. ALISON	161B	A	Prepare to close
656B	EGYPT	Preventative Maintenance Start-up Workshop	K. ALISON	161B	A	Prepare to close
657B	EGYPT	Survey and Mapping Start-up Workshop	K. ALISON	161B	A	TPM Feb. 19 - Mar 1, start-up in May. K. Alison travelling to Egypt 2/18.
658B	EGYPT	Main System Management Start-up Workshop	K. ALISON	161B	A	Draft report in publications
659B	EGYPT	IMS Steering Committee Start-up Workshop	K. ALISON	161B	A	Final report sent. Prepare to close.



TABLE 3  
AIP Status as of 31 December 1989

AIP	COUNTRY	DESCRIPTION	ACT. MNGR	AIS	STATUS	NEXT STEPS
660B	BUREAU	ANE Irrigation Strategy	K. ALISON		A	Need to develop outline & identify authors. Need info from MSP on focus of strategy paper
661B	INDIA	Eastern Waters Study Follow-up	W. GARVEY	164B	A	
662B	INDIA	Cost Recovery Workshop	W. GARVEY	163B	A	
663B	PHILIPPINES	AAP Project Mid-Term Evaluation	P. REISS	168B	A	Papers based on evaluation as follow-up by Barnett and Wolf
664B	NEPAL	IMP Redesign	P. REISS	162B	A	Second draft of Steinberg paper to be reviewed by Reiss and MSP
665B	INDIA	Madhya Pradesh Mid-Term Evaluation	P. REISS	160B	A	Proposal in contracts
666B	REGIONAL	Training Guidelines Report Translation	K. ALISON	171B0	A	Translations sent to MSP and P. Sun for review
667B	THAILAND	NESSI Dosing Policy Workshop	P. REISS		A	Proceedings to be reviewed by Reiss prior to publication.
668B	THAILAND	Basin Management Study Design	P. REISS	166B	A	Cont. sch. for mid-February with Sanguan, Uraivan & Johnson.
669B	INDONESIA	Sederhana Applied Study Local Staffing	P. REISS	170B	A	AIP & subcontract in contracts.
670B	REGIONAL	Eastern Waters Initiative (EWI)	T. GARVEY	175B	A	K. Pitman in Dhaka 1/15-2/9. In Delhi 2/9-2/18
671B	BUREAU	Irrigation and Drainage Research Papers	P. REISS	171B	A	Draft report is in.
672B	BANGLADESH	EWI/Bangladesh - Water Management Advisor	T. GARVEY	175B	A	R. Aten in Dhaka 1/15 - 2/9. Long term field assignment from 2/26.
673B	BUREAU	EWI/Bureau - Regional Research Coordination	T. GARVEY	175B	A	
674B	BUREAU	EWI/Bureau - Studies, Synthesis, and Concept Papers, Research Support	T. GARVEY	175B	A	
675B	BUREAU	EWI/Bureau - Attendance/Participation at International Meetings	T. GARVEY	175B	A	
676C	EGYPT	SOW for IMS Evaluation	K. ALISON	181B	A	SOW being reviewed by Min.. Eval. sch. for 5/1 '90. 6 person team; LO's will be requested for personnel

TABLE 3  
AIP Status as of 31 December 1989

AIP	COUNTRY	DESCRIPTION	ACT. MNGR	AIS	STATUS	NEXT STEPS
677C	BUREAU	Improving Irrigation Scheduling Applied Study	P. REISS		A	Research has begun. Sri Lanka trip planned for summer
678C	EGYPT	Mobilizing Resources	K. ALISON		A	Prepare to close
679C	BUREAU	Occasional Paper on Start-up Workshops	K. ALISON		A	Paper dealing with imp. lessons learned from series of start-up workshops in Egypt, plus monitoring/follow-up workshops in Sri Lanka & Indonesia
683C	BUREAU	International Drainage Workshop	K. ALISON		A	Provision of travel/per diem for 3 presenters at workshop in Egypt Feb. 23-24, 1990

TABLE 4  
Staffing Pattern as of 31 December 1989

AIP	COUNTRY	DESCRIPTION	ACT. MNGR	STATUS	STAFFING	AFFIL.
601A	REGIONAL	Workshop on Training Needs & Strategy for Irrigation Agricultural Development	J. PETTIT	F	J. Pettit S. Joyce E. Salt D. Yohalem G. Levine W. A. Garvey J. Pettit	TRG TRG TRG CDM (cons) Cornell Harza TRG
602A	EGYPT	Project Mgmt System for IMS	J. PETTIT	F	D. Edwards C. Brown	TRG CDM
603A	EGYPT	Mgmt Training Program	J. PETTIT	F	D. Edwards	TRG
604A	PAKISTAN	Evaluation of ISM-1 Project	W. GARVEY	F	W.A. Garvey K. Nobe C. Wescott L. Swarner J. Cave T. Schuurmans	Harza DAI DAI Harza (cons) Harza (cons) PAS
605A	INDONESIA	SIMP Start-up Workshop	J. PETTIT	F	D. Hamilton J. Pettit	CDM (cons) TRG
606A	INDONESIA	Mgmt Training Assessment	F. BESLEY	F	J. Pettit	TRG
607A	TUNISIA	PID Preparation	P. REISS	F	P. Reiss	DAI
608A	EGYPT	Identification of an Action Program to Address Strategic Issues in the Irrigation Sector Related to Energy	W. GARVEY	F	D. Larson L. Wang	UAZ Harza
609A	REGIONAL	Second Regional Irrigation Mgmt Workshop	P. REISS	F	L. Small B. Bagadion W. Coward I. Smout T. Franks G. Frelick	CDM (cons) CDM (cons) Cornell CDM (cons) CDM (cons) TRG
610A	INDIA	HALWD - Redesign	M. WALTERS	F	R.J. Edwards M. Walter	DAI Cornell
611A	BUREAU	TOT Workshop on TPMS	J. PETTIT	F	F. Rosensweig J. Pettit	TRG TRG
612A	INDIA	ISPAN Activity Investigation Coordination & Development in India	F. BESLEY	F	M. Walter	Cornell

TABLE 4  
Staffing Pattern as of 31 December 1989

AIP	COUNTRY	DESCRIPTION	ACT. MNGR	STATUS	STAFFING	AFFIL.
613A	MOROCCO	Supplement Irrigation PP	P. REISS	F	S. Ince M. Billings K. Dwyer P. Warshall M. Ait Kadi A. Debbarih F. Alioua A. Merzouk B. Essafi	UAZ DAI ISTI UAZ CDM (cons)
614A	MOROCCO	Supplemental Irrigation PP Design TPM	P. REISS	F	J. Pettit	TRG
615A	BUREAU	ISPAN Annual Planning Workshop	P. REISS	F	J. Keller J. Montgomery B. Pruitt G. Levine TSC Staff Liaison Off.	IDEC CDM (cons) DAI Cornell
616A	TUNISIA	Special Studies SOWs for IWRM Project	P. REISS	F	P. Reiss T. Weaver	DAI IDEC
617A	MOROCCO & PHILIPPINES	Regional Institutions Site Visits	P. REISS	F	R. Barker D. Slack	Cornell UAZ
618A	ANE BUREAU	Manuscript - Cost Recovery & Financing	F. BESLEY	F	L. Small I. Carruthers	CDM (cons) CDM (cons)
619A	INDIA	MPMIP (Madhya Pradesh) - Task 1	P. REISS	A	J. Merriam	Harza (cons)
620A	INDIA	MPMIP (Madhya Pradesh) - Task 2	P. REISS	A	T. Ehera	CDM (cons)
621A	INDIA	MPMIP (Madhya Pradesh) - Task 3	W. GARVEY	A	T. Sheng	CADI
622A	INDIA	MPMIP (Madhya Pradesh) - Task 4	W. GARVEY	A	W. Anderson	Harza
623A	INDIA	MPMIP (Madhya Pradesh) - Task 5	J. PETTIT	A	Not staffed	
624A	PAKISTAN	Evaluation of the Command Water Mgmt Project	W. GARVEY	A	R. Betts P. Reiss G. White T. Hussain D. Hamilton	DAI DAI DAI CDM (cons) CDM (cons)
625A	INDIA	Evaluation of IM&T Project	W. GARVEY	F	J. Keller L. Compton M. Walter W. Garvey	IDEC CDM (cons) CDM (cons) Harza
626A	INDIA	Water Mgmt Tech. & Research Specialist	F. BESLEY	F	M. Walter	CDM (cons)

TABLE 4  
Staffing Pattern as of 31 December 1989

AIP	COUNTRY	DESCRIPTION	ACT. MNGR	STATUS	STAFFING	AFFIL.
627A	BUREAU ANE	Irrigation Strategy for the 1990s	W. GARVEY	F	R. Barker G. Levine M. Rosegrant Svendson	Cornell CDM (cons) IFPRI IFPRI
628B	PHILIPPINES	AAP Applied Studies Design	P. REISS	F	H. Angeles	CDM (cons)
629B	BANGLADESH	Review of Mission Activities in the Water Sector	W. GARVEY	A	W.A. Garvey	
630B	PAKISTAN	Private Tubewell Development Applied Study	P. REISS	A	R. Johnson	Cornell
631B	INDIA	MMIP (Maharashtra) Micro-computers	W. GARVEY	A	T. Sheng	CADI
632B	INDIA	Maharashtra Irrigation Technology Mgmt Project (Phase I)	W. GARVEY	F	G. Levine	CDM (cons)
633B	SRI LANKA	Institutional Support for Irrigation-Sector Policy Implementation	W. GARVEY	F	W. A. Garvey	Harza
634B	BUREAU	Eastern Water Studies	W. GARVEY	A	D. Seckler D. Molden P. Rogers P. Lydon D. Simons J. Ives P. Jones W. A. Garvey	Winrock CADI CDM (cons) CDM (cons) CDM (cons) CDM (cons) CDM (cons) Harza
635B	REGIONAL	Phase II Guidance Document	K. ALISON	A	W. A. Garvey K. Alison J. Pettit	Harza TRG TRG
636B	EGYPT	Professional Dev. Start-up Workshop	K. ALISON	F	C. Liebler K. Alison	CDM (cons) TRG
637B	EGYPT	R!IP Start-up Workshop	K. ALISON	F	K. Alison D. Hahn-Rollins	TRG TRG
638B	EGYPT	Water Research Center Project Start-up Workshop	K. ALISON	F	D. Edwards K. Alison	TRG TRG
639B	BUREAU	ISPAN Annual Report #1	R. THOMAS	F	TSC Staff	
640B	EGYPT	Irrigation Systems Mgmt Project Evaluation	P. REISS	F	T. Wickham S. Jubbori D. Auslam P.N. Clement	CDM (cons) CDM CDM (cons) DAI

TABLE 4  
Staffing Pattern as of 31 December 1989

AIP	COUNTRY	DESCRIPTION	ACT. MNGR	STATUS	STAFFING	AFFIL.
641B	THAILAND	NESSI Applied Study	P. REISS	F	S. Johnson D. Hamilton S. Patamatankul K. Paranakian A. Apinantara A. Issariyanukula T. Charoenwatana	CDM (cons) CDM (cons) CDM (cons) CDM (cons) CDM (cons) CDM (cons) CDM (cons)
642B	THAILAND	NESSI Applied Study Supervision	P. REISS	F	P. Reiss D. Slack	DAI UAZ
643B	SRI LANKA	ISMP Monitoring Procedures & Workshop	K. ALISON	F	K. Alison J. Pettit	TRG TRG
644B	REGIONAL	Training Strategies Support Workshop	K. ALISON	F	J. Pettit D. Edwards	TRG TRG
645B	INDIA	Dam Safety Conference	R. THOMAS	F	R. Corso G. Karadi	CDM (cons) CDM (cons)
646B	NEPAL	IMP Mid-Term Evaluation	P. REISS	F	M. Ait Kadi W. Easter P. Stanbury J. Lohani G. Frelick	CDM (cons) IDEC CDM (cons) CDM (cons) TRG
647B	BANGLADESH	Water Sector Assessment	W. GARVEY	A	K. Pitman W. Garvey A. Lunquist D. Gisselquist	Harza Harza CDM (cons) CDM (cons)
648B	INDIA	Maharashtra Minor Irrigation Project - Modeling	W. GARVEY	A	D. Molden C. Wensley	CADI CDM (cons)
649B	INDIA	Maharashtra Minor Irrigation Proj. - Scheduling	P. REISS	A	E. Oest	Harza
650B	SRI LANKA	ISMP Monitoring Procedures & Workshop Super.	K. ALISON	F	J. Pettit D. Edwards K. Alison	TRG TRG TRG
651B	REGIONAL	Institutional Strengthening Regional Network	P. REISS	F	P. Reiss K. Alison	DAI TRG
652B	INDONESIA	SSIMP Mid-Term Evaluation	P. REISS	F	W. Thomas W. Coward J. Keller P. Reiss S. Asnawi	ISTI Cornell IDEC DAI CDM

TABLE 4  
Staffing Pattern as of 31 December 1989

AIP	COUNTRY	DESCRIPTION	ACT. MNGR	STATUS	STAFFING	AFFIL.
653B	REGIONAL	Tech Transfer/Information Sharing	K. ALISON	A	TSC staff	
654B	INDONESIA	Sederhana & HPSIS Systems Reassessment Applied Study	P. REISS	A	W. Coward	Cornell
655B	EGYPT	Planning Studies and Models Start-up Workshop	K. ALISON	A	K. Alison	TRG
656B	EGYPT	Preventative Maintenance Start-up Workshop	K. ALISON	A	T. Leonhardt S. Gant	TRG Indiv.
657B	EGYPT	Survey and Mapping Start-up Workshop	K. ALISON	A	K. Alison	TRG
658B	EGYPT	Main System Management Start-up Workshop	K. ALISON	A	L. Jennings A. Rollins	TRG CDM (cons)
659B	EGYPT	IMS Steering Committee Start-up Workshop	K. ALISON	A	D. Hahn-Rollins K. Alison	TRG TRG
660B	BUREAU	ANE Irrigation Strategy	K. ALISON	A	Not Staffed	
661B	INDIA	Eastern Waters Study Follow-up	W. GARVEY	A	P. Rogers W. Garvey	CDM (cons) CDM
662B	INDIA	Cost Recovery Workshop	W. GARVEY	A	M. Walter L. Small Indian experts 4	Cornell CDM (cons) CDM (cons)
663B	PHILIPPINES	AAP Project Mid-Term Evaluation	P. REISS	A	M. Barnett J. Wolf P. Reiss	IDEC DAI DAI
664B	NEPAL	IMP Redesign	P. REISS	A	H. Malano P. Pradhan D. Steinberg M. Ait Kadi Nepali exp. (TBI) P. Reiss	CDM (cons) IIMI ISTI CDM (cons) CDM (cons) DAI
665B	INDIA	Madhya Pradesh Mid-Term Evaluation	P. REISS	A	D. Slack J. Eriksen M. Barnett P. Stanbury P. Clement P. Reiss	UAZ CDM (cons) CDM (cons) CDM (cons) DAI DAI
666B	REGIONAL	Training Guidelines Report Translation	K. ALISON	A	K. Alison H. Marin B. Gerard New translators	TRG CDM (cons) CDM (cons)

TABLE 4  
Staffing Pattern as of 31 December 1989

AIP	COUNTRY	DESCRIPTION	ACT. MNGR	STATUS	STAFFING	AFFIL.
667B	THAILAND	NESSI Closing Policy Workshop	P. REISS	A	S. Patamatankul K. Paranakian A. Apinantara T. Charoenwatana A. Issariyanukula P. Reiss	CDM (cons) CDM (cons) CDM (cons) CDM (cons) CDM (cons) DAI
668B	THAILAND	Basin Management Study Design	P. REISS	A	S. Johnson S. Patamatankul T.K.Y. Uraivan P. Reiss	CDM (cons) CDM (cons) CDM (cons) DAI
669B	INDONESIA	Sederhana Applied Study Local Staffing	P. REISS	A	PR to negotiate with local Indonesian firm	
670B	REGIONAL	Eastern Waters Initiative	T. GARVEY	A	K. Pitman	Harza
671B	BUREAU	Irrigation & Drainage Research Papers	P. REISS	A	W. Coward M. Svendsen T. Steenhuis Grad. student	Cornell IFPRI Cornell Cornell
672B	BANGLADESH	EWI/Bangladesh - Water Management Advisor	T. GARVEY	A	R. Aten	Harza
673B	BUREAU	EWI/Bureau - Regional Research Coordination	T. GARVEY	A	Not staffed yet	
674B	BUREAU	EWI/Bureau - Studies, Synthesis, and Concept Papers, Research Support	T. GARVEY	A	Not staffed yet	
675B	BUREAU	EWI/Bureau - Attendance/Participation at International Meetings	T. GARVEY	A	Not staffed yet	
676C	EGYPT	SOW for IMS Evaluation	K. ALISON	A	F. Riggs	CDM (cons)
677C	BUREAU	Improving Irrigation Scheduling Applied Study	P. REISS	A	Y. Parlange Godeliyada P. Reiss	Cornell Cornell DAI
678C	EGYPT	Mobilizing Resources			L. Small	CDM (cons)
679C	BUREAU	Occasional Paper on Start-up Workshops	K. ALISON	A	K. Alison	TRG
683C	BUREAU	International Drainage Workshop	K. ALISON	A	G. Hoffman	CDM (cons)



## Chapter 2

### UTILIZATION OF FUNDS

#### 2.1 SOURCES OF FUNDS

Table 5 presents the amounts and sources of funds, by PIO/T, applied to the project from inception through 31 December 1989.

#### 2.2 APPLICATION OF FUNDS

Table 6 presents the estimated costs at completion of ISPAN activities through 31 December 1989.

TABLE 5 - SUMMARY OF ISPAN FUNDING

	DATE SIGNED	PIO/T NUMBER	CORE FUNDS	ORDER FUNDS	TASK FUNDS	SOURCE OF FUNDS
CONTRACT	8/14/87	3-7631510 7361172	\$639,725 \$100,000			ANE S&T/ENERGY
AMEND 1	1/21/88	391-0467-3-70326			\$143,404	PAKISTAN
AMEND 2	2/19/88	497-347-3-50131		\$18,586		INDONESIA
AMEND 3	3/18/88	398-0249-3-80008			\$35,000	INDIA
AMEND 4	5/26/88	CORRECTIONS ONLY				
AMEND 5	5/26/88	398-0289-3-8631501	\$875,000			ANE
AMEND 6	6/28/88	398-0289-3-8631501	\$200,000			ANE
AMEND 7	6/22/88	608-0249-3-88022			\$69,965	MOROCCO
AMEND 8	7/21/88	8361436	\$30,000			S&T/AGR
AMEND 9	7/27/88	398-0282-3-80024			\$154,225	INDIA
AMEND 10	8/16/88	397-0467-3-80033			\$115,641	PAKISTAN
AMEND 11	8/19/88	386-0483-3-30159			\$415,676	INDIA
AMEND 12	9/26/88	386-0484-3-70116			\$47,399	INDIA
AMEND 13	9/30/88	386-0490-3-40178			\$82,613	INDIA
AMEND 14	9/30/88	3-88022 38631501, A.2 38631501, A.3	\$80,000 \$48,239		\$6,500	MOROCCO ANE ANE
AMEND 15	1/18/89	398-0289-3-9631501	\$300,000			ANE
AMEND 16	1/18/89	3-88065 3-70267			\$93,322 \$84,900	EGYPT EGYPT
AMEND 17	2/1/89	398-0289-3-9631501	\$980,000			ANE
AMEND 18	2/27/89	493-0312-3-80066			\$62,962	THAILAND
AMEND 19	3/23/89	383-080-3-69064			\$40,955	SRI LANKA
AMEND 20	3/23/89	386-0484-70143			\$11,454	INDIA
AMEND 21	3/23/89	367-0153-3-90008			\$84,363	NEPAL
AMEND 22	4/12/89	383-80-3-69064			\$17,189	SRI LANKA
AMEND 23	4/26/89	398-249-3-90030			\$11,752	BANGLADESH
AMEND 24	5/18/89	386-490-3-40194			\$238,422	INDIA
AMEND 25	6/7/89	497-347-3-40599			\$57,648	INDONESIA
AMEND 26	6/26/89	263-0132-2-88065			\$182,134	EGYPT
AMEND 27	7/14/89	497-0347-3-50197			\$90,084	INDONESIA
AMEND 28	8/23/89	A) 398-0289-3-9631501 B) 398-0289-3-9361526	\$530,000		\$50,000	ANE S&T
AMEND 29	9/5/89	367-0153-3-80146			\$53,542	NEPAL
AMEND 30	9/22/89	492-0385-3-60285			\$55,757	PHILIPPINES
AMEND 31	9/19/89	493-0249-3-90076			\$49,307	THAILAND
AMEND 32	9/24/89	398-0249-3-90020			\$53,641	INDIA
AMEND 33	9/29/89	398-0289-3-9631501			\$3,700,000	ANE BUREAU
TOTAL:			\$3,063,239	\$18,586	\$5,914,533	

\* There were no new amendments during this quarter.

**TABLE 6 - ESTIMATED ACTIVITY COSTS**  
(through 31 December 1989)

ACT. NO.	ACTIVITY NAME	ESTIMATED COST AT COMPLETION	TYPE*	AMENDMENT NO./PIOT NO.
601A	US: Workshop Training/Strategy Irr Agri Development	\$84,055.00	C	Amendment No. 8 / 8361436
602A	EGYPT: Project Management System for IMS Projects	\$35,050.00	C	
603A	EGYPT: Management Training Program	\$19,744.00	C	
604A	PAKISTAN: Evaluation of ISM-1 Project	\$141,532.00	C	Amendment No. 1 / 391-0467-3-70326
605A	INDONESIA: SSIMP Start-up Workshop	\$18,586.00	O	Amendment No. 2 / 497-347-3-50131
606A	INDONESIA: Management Training Assessment	\$8,026.00	C	
607A	TUNISIA: FID Prep/Imp Water Research Management Project	\$2,410.00	C	
608A	EGYPT: Strategic Energy Issues Program Irrigation	\$44,988.00	C	Original Contract / 7361172
609A	REGIONAL: ISPAN Regional Irrigation Management Workshop	\$65,722.00	C	
610A	INDIA: Evaluation - HALWD Project Himachal Pradesh	\$34,998.00	T	Amendment No. 3 / 398-0249-3-80008
611A	US: TPM Training of Trainers	\$4,516.00	C	
612A	INDIA: Coordinate/Develop ISPAN Activity	\$7,631.00	C	
613A	MOROCCO: Supplement Irrigation PP Design	\$83,818.00	T	Amendment No. 7 / 608-0249-3-88022; Amendment No. 14 / 3-88
614A	MOROCCO: TPM/Supplement Irrigation PP Design	\$4,121.00	C	
615A	BUREAU: ISPAN Annual Planning Workshop	\$28,529.00	C	
616A	TUNISIA: Special Studies SOMs - IWRM Project	\$4,246.00	C	
617A	REGIONAL: Regional Institution Site Visit	\$7,542.00	C	
618A	BUREAU: Manuscript Cost Recovery/Finance	\$1,358.00	C	
619A	INDIA: MPMIP (Madhya Pradesh) - Task 1	\$79,169.00	T	Amendment No. 11 / 386-0483-3-30159
620A	INDIA: MPMIP (Madhya Pradesh) - Task 2	\$54,424.00	T	Amendment No. 11 / 386-0483-3-30159
621A	INDIA: MPMIP (Madhya Pradesh) - Task 3	\$83,271.00	T	Amendment No. 11 / 386-0483-3-30159
622A	INDIA: MPMIP (Madhya Pradesh) - Task 4	\$115,452.00	T	Amendment No. 11 / 386-0483-3-30159
623A	INDIA: MPMIP (Madhya Pradesh) - Task 5	\$83,360.00	T	Amendment No. 11 / 386-0483-3-30159

NOTE \* Type of funding: O = Order; T = Task; C = Core

**TABLE 6 - ESTIMATED ACTIVITY COSTS**  
(through 31 December 1989)

ACT. NO.	ACTIVITY NAME	ESTIMATED COST AT COMPLETION	TYPE*	AMENDMENT NO./PIOT NO.
624A	PAKISTAN: Evaluation of the Command Water Management Project	\$115,641.00	T	Amendment No. 10 / 397-0467-3-80033
625A	INDIA: Evaluation of the IM&T Project	\$57,110.00	T	Amendment No. 12 / 386-0484-3-70116
626A	INDIA: Water Management Technology and Research Specialist	\$154,225.00	T	Amendment No. 9 / 398-0282-3-80024
627A	BUREAU: ANE Irrigation Strategy for the 1990s	\$28,653.00	C	
628B	PHILIPPINES: AAP Applied Studies Design	\$4,931.00	C	
629B	BANGLADESH: Review Mission Water Sector Activity	\$18,363.00	C	
630B	PAKISTAN: Private Tubewell Development/Applied Study	\$83,339.00	C	
631B	INDIA: MMIP (Maharashtra) Micro-Computers	\$83,831.00	T	Amendment No. 13 / 386-0490-3-40178
632B	INDIA: Maharashtra Irrigation Tech. Mgmt. Project - Phase 1	\$6,638.00	C	
633B	SRI LANKA: Inst. Support Irrigation Policy Implementation	\$34,033.00	C	
634B	BUREAU: Eastern Waters Study	\$256,260.00	C	
635B	REGIONAL: Training Strategy Follow-up	\$40,056.00	C	
636B	EGYPT: Professional Development Start-up Workshop	\$20,098.00	T	Amendment No. 16 / 3-88065
637B	EGYPT: RIIP Start-up Workshop	\$45,291.00	T	Amendment No. 16 / 3-88065
638B	EGYPT: Water Research Center Start-up Workshop	\$32,238.00	T	Amendment No. 16 / 3-88065
639B	US: ISPAN Annual Report No. 1	\$23,805.00	C	
640B	EGYPT: Irrigation Systems Management Project Evaluation	\$81,400.00	T	Amendment No. 16 / 3-70267
641B	THAILAND: NNESSI Applied Study	\$79,290.00	T	Amendment No. 18 / 493-0312-3-80066
642B	THAILAND: NNESSI Applied Study Supervision	\$20,924.00	C	
643B	SRI LANKA: ISMP Monitoring Procedures and Workshop	\$58,144.00	T	Amendment No. 19 / 383-080-3-69064
644B	REGIONAL: Training Strategies Workshop Report	\$36,580.00	C	
645B	INDIA: Dam Safety Conference	\$11,454.00	T	Amendment No. 20 / 386-0484-70143
646B	NEPAL: Irrigation Management Project Mid-term Evaluation	\$84,363.00	T	Amendment No. 21 / 367-0153-3-90008

NOTE \* Type of funding: O = Order; T = Task; C = Core

**TABLE 6 - ESTIMATED ACTIVITY COSTS**  
(through 31 December 1989)

ACT. NO.	ACTIVITY NAME	ESTIMATED COST AT COMPLETION	TYPE*	AMENDMENT NO./PIOT NO.
647B	BANGLADESH: Water Sector Assessment	\$39,836.00	T	Amendment No. 23 / 398-0249-3-90030 A-1 and 388-0074-3-90041 A-1
648B	INDIA: Maharashtra Minor Irrigation Project - Modeling	\$159,752.00	T	Amendment No. 24 / 386-0490-3-40194
649B	INDIA: Maharashtra Minor Irrigation Project - Scheduling	\$78,670.00	T	Amendment No. 24 / 386-0490-3-40194
650B	SRI LANKA: ISNP Monitoring Procedures & Workshop Supervision	\$0.00	C	
651B	REGIONAL: Institutional Strengthening Regional Network	\$3,237.00	C	
652B	INDONESIA: SSIMP Mid-term Evaluation	\$88,000.00	T	Amendment No. 27 / 497-0347-3-50197
653B	REGIONAL: Technology Transfer/Information Sharing	\$12,524.00	C	
654B	INDONESIA: Sederhana and HPSIS Applied Study	\$57,648.00	T	Amendment No. 25 / 497-347-3-40599
655B	EGYPT: Planning Studies and Models Start-up Workshop	\$34,846.00	T	Amendment No. 26 / 263-0132-3-88065
656B	EGYPT: Preventative Maintenance Start-up Workshop	\$37,914.00	T	Amendment No. 26 / 263-0132-3-88065
657B	EGYPT: Survey and Mapping Start-up Workshop	\$38,727.00	T	Amendment No. 26 / 263-0132-3-88065
658B	EGYPT: Main System Management Start-up Workshop	\$32,285.00	T	Amendment No. 26 / 263-0132-3-88065
659B	EGYPT: IMS Steering Committee Start-up Workshop	\$38,362.00	T	Amendment No. 26 / 263-0132-3-88065
660B	BUREAU: ANE Irrigation Strategy	\$44,804.00	C	
661B	INDIA: Eastern Waters Study Follow-up	\$13,857.00	T	Amendment No. 32 / 398-0249-3-90020
662B	INDIA: Cost Recovery Workshop	\$29,783.00	T	Amendment No. 32 / 398-0249-3-90020
663B	PHILIPPINES: AAP Project Mid-term Evaluation	\$55,757.00	T	Amendment No. 30 / 492-0385-3-60285
664B	NEPAL: IMP Redesign	\$53,542.00	T	Amendment No. 29 / 367-0153-3-80148
665B	INDIA: Madhya Pradesh Mid-term Evaluation	\$61,375.00	T	Amendment No. 36 / 386-0483-3-30159-1
666B	REGIONAL: Training Guidelines Report Translation	\$5,257.00	C	
667B	THAILAND: NNESSI Closing Policy Workshop	\$16,124.00	T	Amendment No. 31 / 493-0249-3-90076
668B	THAILAND: Basin Management Study Design	\$32,183.00	T	Amendment No. 31 / 493-0249-3-90076
669B	INDONESIA: Sederhana Applied Study Local Staffing	\$172,841.00	T	Amendment No. 39 / 497-0347-3-60125

NOTE \* Type of funding: O = Order; T = Task; C = Core

**TABLE 6 - ESTIMATED ACTIVITY COSTS**  
(through 31 December 1989)

ACT. NO.	ACTIVITY NAME	ESTIMATED COST AT COMPLETION	TYPE*	AMENDMENT NO./PILOT NO.	
670B	REGIONAL: Eastern Waters Initiative (EWI)	\$660,025.00	T	Amendment No. 33 / 398-0289-3-9631501	
671B	BUREAU: Irrigation and Drainage Research Papers	\$27,827.00	C		
672B	BANGLADESH: EWI/Bangladesh - Water Management Advisor	\$720,055.00	C		
673B	BUREAU: EWI/Bureau - Regional Research Coordination	\$224,521.00	C		
674B	BUREAU: EWI/Bureau - Studies, Synthesis and Concept Papers, Research Support	\$315,070.00	C		
675B	BUREAU: EWI/Bureau - Attendance/Participation at International Meetings	\$119,896.00	C		
676C	EGYPT: SOW for IMS Evaluation	\$21,536.00	T		Amendment No. 16 / 3-88065 & 3-70267
677C	BUREAU: Improving Irrigation Scheduling Applied Study	\$17,452.00	C		
678C	EGYPT: Mobilizing Resources	\$6,277.00	C		
679C	BUREAU: Occasional Paper on Start-up Workshops	\$4,572.00	C		
683C	BUREAU: International Drainage Workshop	\$13,320.00	C		
901A	BUREAU: General Administration	\$738,811.00	C		
902A	BUREAU: Preliminary Activity Development	\$448,587.00	C		
903A	BUREAU: General Technical Support	\$161,024.00	C		
904A	BUREAU: Information Services	\$123,542.00	C		
905A	BUREAU: Selection of Regional Institutions	\$23,956.00	C		
906A	BUREAU: Mobilization	\$140,976.00	C		
907A	BUREAU: Research Plan	\$14,705.00	C		
908A	BUREAU: Liaison Officers	\$60,957.00	C		
921B	BUREAU: Activity Preparation	\$46,294.00	C		
923B	BUREAU: Mission Program Support	\$6,583.00	C		
924B	BUREAU: Program Support	\$8,103.00	C		
925B	BUREAU: Applied Studies Program Development	\$15,697.00	C		
926B	BUREAU: HRD Program Development	\$3,812.00	C		

NOTE \* Type of funding: O = Order; T = Task; C = Core

**TABLE 6 - ESTIMATED ACTIVITY COSTS**  
(through 31 December 1989)

ACT. NO.	ACTIVITY NAME	ESTIMATED COST AT COMPLETION	TYPE*	AMENDMENT NO./PIOT NO.
927B	BUREAU: Information and Documentation	\$6,605.00	C	
928B	BUREAU: Regional Institutions	\$5,052.00	C	
931B	BUREAU: Program Planning	\$109,844.00	C	
932B	BUREAU: Systems Development and Maintenance	\$35,585.00	C	
933B	BUREAU: Progress Reporting	\$14,000.00	C	
934B	BUREAU: Project Management and Financial Control	\$90,876.00	C	
941B	BUREAU: TSC Support Services	\$262,253.00	C	
942B	BUREAU: TSC Direct Costs	\$77,385.00	C	
921C	BUREAU: Activity Preparation	\$22,743.00	C	
922C	BUREAU: Home Office Backstopping	\$6,432.00	C	
932C	BUREAU: System Maintenance	\$12,520.00	C	
933C	BUREAU: Progress Reporting	\$9,763.00	C	
934C	BUREAU: Project Management	\$58,364.00	C	
935C	BUREAU: Activity Administration	\$14,002.00	C	
936C	BUREAU: Financial Data Processing	\$18,073.00	C	
941C	BUREAU: TSC Supporting Services	\$8,314.00	C	
942C	BUREAU: TSC Direct Costs	\$25,125.00	C	
<b>TOTAL:</b>		<b>\$8,197,073.00</b>		

NOTE \* Type of funding: O = Order; T = Task; C = Core

**ANNEXES**



## ANNEX A

### ACCELERATED AGRICULTURAL PRODUCTION PROJECT EVALUATION

October 1989

#### EXECUTIVE SUMMARY

In response to slow economic growth in the early 80's, the Government of the Philippines launched an economic recovery program in 1987, which featured agriculture as a lead sector. As part of this program, USAID/Manila in cooperation with the Department of Agriculture (DA) and the National Irrigation Authority (NIA), launched the Accelerated Agricultural Production Project (AAPP) to help restore growth in agricultural production and to stimulate rural recovery. This five year effort, begun on August 30, 1986, commits \$29.7 million, \$22.7 million in USAID grant and \$7.0 million in GOP funds, to improve agricultural services to farmers, identify and support activities and policies that create more efficient markets for agricultural inputs and products and improve the basis of agricultural policy and program formulation.

In keeping with the project's evaluation schedule, senior USAID and Filipino project managers sought the services of an independent evaluation team to provide recommendations on:

- streamlining project structure,
- improving the pace of project implementation,
- resolving outstanding issues, and
- recommending adjustments in project financing.

#### Major Findings

- the factors which adversely affected early project implementation, i.e. DA reorganization and staff changes, NIA's legal status, cumbersome GOP disbursement procedures and limited understanding of USAID and GOP procedures have largely been resolved and implementation is at an acceptable pace.
- assuming current expenditure levels persist, and there is strong evidence that they will, project funding will likely be completely expended prior to the current PACD of December 31, 1991.
- maintenance of the Project's management system outside DA's normal command structure of the Department, draws on an inordinate level of AID and DA scarce management resources, is in direct opposition to the institutional development nature of the project and exposes the project to continued criticism that it is an AID, not a GOP project.
- the current Project monitoring and evaluation system is inadequate and needs to be strengthened if system output is to be used as an effective management tool and the impact of Project investment on targeted beneficiaries is to be established.
- GOP fund releases in support of Project sub-activities have improved, dropping from 140 calendar days in 1987 to 40 days in 1989. Further improvements can and should be encouraged.
- the Project provides USAID with a unique opportunity to coordinate irrigation and agricultural production activities under the same project.
- the ability of DA and NIA to formulate new policies is critical: — in the DA where a strong analytical capacity is required to fully operationalize the Department's new functional structure; — in NIA where policy is becoming an essential part of the irrigation system management.

- DA's efforts to strengthen agricultural marketing, while critical to improving the flow of goods and services among producers, processors and consumers, will flounder until and unless the Department develops a consistent strategy which identifies its long-term role as market manager and that of the private sector as a market participant.

### **Major Recommendations**

#### **— Funding and Flow of Funds**

- AID should carefully analyze current fund requirements and increase life of project funding levels as required,
- Use project supported TA to assist in simplifying USAID and GOP disbursement procedures,
- Establish an advisory group in DA and NIA which can quickly deal with funds flow constraints, and
- Develop a system that staff can easily use to track funding requests through the GOP and USAID systems.

#### **— Project Management**

- Reduce the number of Project Implementing Units from 13 to eight, two in NIA, five in DA and the Project Management Office,
- Place the five PIU's in DA under the direct supervision of an appropriate Assistant Secretary,
- Establish a Project Coordinating Committee composed of the five Assistant Secretaries and chaired by the Under Secretary, Policy, Planning and Monitoring,
- Transfer responsibilities for preparing Department-wide annual Work and Financial Plans to the Assistant Secretary for Management for review and submission to USAID by the Coordinating Committee, and
- Retain the PMO to manage provision of TA and commodity procurement and to develop a project monitoring and evaluation system.

#### **— Policy Formation**

- Encourage the DA to restructure its policy analysis capabilities into a three tier hierarchy; an in-house rapid response capability, a semi-detached medium-term capability and a long-term policy research base supported by outside contract.
- Encourage the establishment of a research and policy analysis management cell in NIA.

**— Monitoring and Evaluation**

- **Develop a project management system closely linked to the GOP's planning and budgeting cycle which clearly articulates project actions, measurable outputs, and**
- **Collect baseline data to set the stage for future project evaluations.**

**— Marketing Strategy**

- **Assist the DA in developing an internal long-term strategy which defines its role in market management and the steps required to develop required capacity.**

**— DA and NIA Coordination**

- **Encourage senior agency managers to issue a joint memorandum supporting collaborative action at the field level,**
- **Use the Project's outreach activities to support collaboration, and**
- **Restructure AID project management loads so one officer is responsible for both the agriculture and irrigation components of the Project.**

ANNEX B  
PLANNING STUDIES AND MODELS COMPONENT OF THE IRRIGATION  
MANAGEMENT SYSTEMS PROJECT:  
START-UP WORKSHOP REPORT  
(ALEXANDRIA, EGYPT) JUNE 26-28, 1989

October 1989

**EXECUTIVE SUMMARY**

The Planning Studies and Models (PSM) Project is housed in the Planning Sector of the Egyptian Ministry of Public Works and Water Resources (MPWWR). A start-up workshop for PSM was held June 26-28, 1989, at the Montazah Sheraton Hotel in Alexandria, Egypt. This was the fourth start-up workshop conducted this year for components of the Irrigation Management Systems (IMS) Project in Egypt. A total of seven workshops are planned for the sub-components of IMS, plus an eighth workshop for the IMS Coordinating Committee.

Thirteen individuals, representing MPWWR, the U.S. Bureau of Reclamation, (USBR), and U.S. Agency for International Development (USAID), participated in the PSM workshop.

Ministry representatives included the general director of the Technical Office and head of Irrigation Administration, as well as the new head of the Ministry Monitoring Office, who will be gathering information from all of the sub-components of IMS.

The workshop was designed and facilitated by Kathy Alison, Human Resource Development Program Manager for the Irrigation Support Project for Asia and the Near East (ISPAN), a centrally-funded USAID project.

The objectives of the workshop were to:

- exchange current information about the project that is essential for the remainder of the project;
- achieve agreement on and commitment to project goals and activities;
- provide an opportunity for the project team to become better acquainted;
- agree on the management roles and responsibilities of MPWWR, USBR and USAID;
- agree on procedures for managing the project;
- improve the ability of the group to work together as a team;
- discuss and develop strategies for the most important issues that will affect the project; and
- refine the workplan for the next year of the project.

Prior to the workshop, the facilitator conducted confidential interviews with twelve individuals, nine of whom were workshop participants. Six major issues were identified during the interviews and discussed during the workshop.

The six issues were as follows:

- the role of PSM in IMS and the Ministry, including priorities, objectives, and coordination with other IMS components;
- Egyptian technical staff needs and requirements, including selection, utilization, and training;
- the development of procedures for the procurement of computers, vehicles, and other commodities;
- the Participating Agency Service Agreement (PASA), how it works, the role of the advisers, and the support available from the Washington and Denver USBR office;
- short-term consultancies (TDYs), development of scopes of work, and identification of specialists to carry out the work; and
- status of the models developed under the UNDP project and the criteria for evaluating those models. (See Chapter 3 and Appendix F for more specific information on the issues and the recommendations made by the group).

A major outcome of this workshop was a better understanding of the objectives of PSM. PSM is actually a continuation of a major UNDP project which developed a number of computer models for the Ministry to use in planning for water use and distribution. The original project lasted for over 10 years, so there was confusion as to how this USAID-funded project differed from the UNDP project and what parts of the original project are still in existence.

Another major outcome of the workshop was a clarification of the purpose and terms of the PASA, the working agreement between USBR and USAID. The working relationships between the project director, the planning sector technical staff, the USBR advisers and USAID were also discussed and clarified.

Twenty-five major agreements were reached during the workshop. (See Appendix G for a complete list.) One agreement was a commitment to hold weekly staff meetings between the project director, Dr. Bayoumi Attia, or his designate; the project advisers, Al Graves and Jim Riley; and the technical staff of the planning sector. USAID project officer John Anania and Deputy Project Director Aly Seif will participate as appropriate. The workshop participants agreed that these weekly meetings are essential to getting the project moving. The meetings are scheduled for Monday mornings at 8:30 at the office in Giza.

The workshop group also agreed to meet again in early September to review, revise, and clarify the project workplan through 1990. Because of lack of time, this objective was not discussed in adequate detail, so the group requested a follow-up session to focus on the workplan. ISPAN will help facilitate the follow-up workshop. The Ministry engineers assigned to this project who were not able to participate in this workshop should be strongly encouraged to participate in the workplan revision workshop.

The workshop group identified several major tasks that need to be added to the workplan. These tasks include:

- administrative tasks (for example, communications with USBR, filling out PIO/Ps and PIO/Cs, action memoranda and scopes of work, budgets, and support of TDYs while in Egypt);
- distribution of UNDP user-friendly computer models to the Ministry and directorates as well as training on use of the models;
- USAID requirements, including needs assessments and inventories of vehicles and commodities, plus training needs assessments; and
- qualitative/consolidated analysis of staffing needs.

The workplan workshop will focus on how these tasks and those already in the workplan will be accomplished and coordinated, and on the specific objectives and staff needs for each activity. The feasibility and appropriateness of the workplan, time constraints, and any additional budget requirements will also be discussed.

Other recommendations made during the start-up workshop concerned

- the need for advisers and local staff to travel to Ministry offices and departments that will be using the computer models (the end users) to determine user needs and current methods of data handling;
- the need to evaluate and modify the models and to involve end-users in this process; how to determine which models will be handled by local consultants, which by USBR, and which by outside contractors;
- how to make effective use of the local Ministry engineers while the project is gearing up and consultants are being identified;
- and the need for coordination among several of the IMS sub-components, including Planning Studies and Models, Main

Systems Management, Survey and Mapping, and Monitoring, Forecasting and Simulation. (See Chapter 3 and Appendix F for specific recommendations.)

Before the end of the workshop, participants were asked to evaluate the usefulness of the three days. In written evaluations, the group responded that the exercise had provided them with an opportunity to become better acquainted and to gain agreement on and commitment to project goals and activities. They also felt the roles and responsibilities of MPWWR, USBR, and USAID had been clarified, and that current project information had been exchanged.

The group felt that most of the issues constraining implementation had been raised and discussed.

One suggestion from the evaluations was that quarterly meetings be arranged with USAID (Ed Stains and John Anania) to monitor the progress of the project. The first such review meeting is scheduled for the week of August 20.

In summary, the entire group made a concerted effort to identify, confront, and come to terms with the major issues facing the project. Implementation of the project has been lagging for a number of reasons, including the following:

- lack of understanding about how the new project would operate versus how the UNDP project functioned;
- lack of Ministry technical staff to implement the project;
- lack of clarity about the roles of the USBR long-term advisers;
- a lack of understanding of the role of the project director and the advisers in terms of setting direction and priorities for the project;
- limited feedback from the project director to the technical advisers on items that were not acceptable;
- slow turn-around time for action memoranda;
- lack of understanding about USAID, USBR, and MPWWR bureaucracies; and
- the magnitude of the task involved.

The Ministry project director, resident advisers, and USAID project officer have made a commitment to follow through on the agreements reached at the workshop. Subsequent monitoring and evaluation will determine if the project objectives are attainable. An evaluation of the PSM project will be scheduled sometime within the next year. This will be a good opportunity to determine the degree

of commitment to the agreements made at the workshop, as well as the feasibility of the project itself.



## ANNEX C

### PROJECT MANAGEMENT WORKSHOP FOR THE IRRIGATION MANAGEMENT SYSTEMS COORDINATING COMMITTEE (ALEXANDRIA, EGYPT) SEPTEMBER 3-8, 1989

October 1989

#### **EXECUTIVE SUMMARY**

Coordination, communication, timely implementation, and avoiding duplication are the major challenges facing the Irrigation Management Systems (IMS) Coordinating Committee. This committee must effectively monitor and manage, on a continuous basis, the activities of the ten components which comprise the \$340 million Irrigation Management Systems Project in Egypt. Each of the ten components plays a specific role in accomplishing the overall goal of the IMS Project-- "Effective control of Nile waters for all uses and particularly for their optimal allocation to and within agriculture as a means of helping increase agricultural production and productivity."

These challenges and other important issues were the focus of a four-and-a-half day IMS Project Management Workshop held in Alexandria, Egypt, September 3 to 8, 1989. Thirty-nine people attended the workshop--25 Egyptians and 14 Americans. In his opening address, His Excellency Engineer Essam Rady, Minister of Public Works and Water Resources (MPWR), expressed his hope that the participants "will be able to release some of the constraints facing the implementation of the project's components." Engineer Ahmed Ali Mazen, Chairman of the Irrigation Department and the IMS Coordinating Committee, said his objectives in bringing the participants together for this workshop were to identify issues facing implementation and to reach agreement on ways to resolve them or make recommendations for their resolution.

The workshop was conducted by facilitators Kathy Alison and Dee Hahn-Rollins, from the Irrigation Support Project for Asia and the Near East (ISPAN). They interviewed 31 participants to determine the workshop agenda. Eight major issues areas were identified from the interview data as important to discuss during the workshop.

#### **MAJOR ISSUES IDENTIFIED**

1. The role and responsibilities of the IMS Coordinating Committee and its relationship to the project component steering committees, technical assistance team members, other ministries within the Government of Egypt, other donors and the U.S. Agency for International Development (USAID).
2. Authority and decision-making of project directors. What kinds of decisions can project directors make? What decisions have to be taken to the project component steering committees? What decisions should be taken to the IMS Coordinating Committee and Engineer Mazen?
3. The lack of coordination, communication, and resource sharing among components. The different components do not know what other components are doing and what resources others might

have that could assist them. Participants fear duplicating others' work, overlapping without coordinating and, in extreme cases, conducting activities that contradict another component's work.

4. The need to solve the mysteries of USAID procurement and other regulations. Participants complained about the lack of clear, specific, and consistent information and/or advice on procedures.
5. Role and function of the IMS Monitoring Office. What is the overall role and responsibility of the Monitoring Office?
6. Counterpart staffing, local salaries, and civil servant incentives. These areas were identified as constraints to the project's implementation plan(s).
7. IMS components' training needs and the role of NITI (National Irrigation Training Institute). There was an expressed need from all the components for a coordinated effort in regard to conducting training needs assessments, developing training plans, conducting training programs, and purchasing equipment.
8. The future of the IMS Project. What happens after 1991?

The largest percentage of the workshop's time was spent on the discussion of these eight issues and reaching agreements on what could be done to resolve them. Specific agreements and recommendations for each issue area are explained in detail in Chapter 3 of the report.

#### **SUMMARY OF KEY RECOMMENDATIONS**

The agreements reached put a strong emphasis both on the IMS Coordinating Committee's role in policy making and the role of component project directors in exercising their authority to take responsibility for making decisions about implementation activities.

The role of the project component steering committees was clarified and reaffirmed as being the place where project directors could go for advice and support in resolving implementation problems. It was agreed that only as a last resort were implementation problems to be brought to the IMS Coordinating Committee for resolution.

Project directors were encouraged to take the initiative in communicating and working with other components; formal and informal meetings could be called and project component steering committees would be used to share information. Resources such as maps would be available free of charge to other components. Work plans, technical information, etc. would be shared.

USAID officers agreed to request that the USAID Contracts Office conduct a procurement workshop for project directors and others. Project directors were encouraged to work with their USAID project officers to insure timely response to requests.

An ad hoc group was formed to help the newly established Monitoring Office make some important decisions on how it is going to function. It was agreed that the Monitoring Office would provide training to people in each component who would be providing data to the office.

Participants recommended that MPWWR make every effort to provide counterpart staffing, and if staff cannot be provided, then positions should be filled by local contract hires. The lack of adequate staff, the ceiling on local salaries, and low incentives were cited repeatedly as major constraints to project implementation. It was recommended that the IMS Coordinating Committee raise the ceiling on local salaries and that employee performance be considered in awarding incentives.

There was general agreement that NITI should provide general training courses applicable across project components while individual components would provide specialized training. However, currently NITI's capacity to provide services is limited.

There was agreement to start the process of looking ahead to what will be needed after 1991, the project activity completion date, and 1995, end of project extension. The IMS Coordinating Committee and USAID agreed to review policies, philosophy, and objectives by the end of 1990, identify new projects by the end of 1991, and develop a project design by 1992.

#### FACILITATORS' COMMENTS

For the IMS Project to accomplish its goal, it is critical that the agreements summarized here and outlined more specifically later in the report be monitored closely for timely and effective execution. To date this project has successfully completed several activities. And now it is entering into a peak stage of activity--expectations are high and the need is great.

Near the end of the workshop when participants reviewed and made final revisions to their agreements, it became apparent that the participants had all committed themselves in one way or another to do something. Some agreements require people to change their behavior, i.e., delegate authority in their absence or encourage lower-level staff to take more initiative. There has been a strong tendency to take problems to a higher level for resolution. On a project of this scale, this causes unnecessary delays and stifles employees' creativity and motivation.

Other agreements mean taking on new responsibilities, monitoring staff and activities more closely, purposely seeking out opportunities to share information and collaborate with one another as well as with other departments within MPWWR and outside.

All the participants must commit themselves to fulfill the promises made during the workshop. The IMS Coordinating Committee needs to continually remind people of their agreements and hold them accountable. To keep peoples' interest and commitment high, to review the progress on agreements, and to deal with new problems and issues as they surface, it is recommended that a follow-up workshop with the same representative groups be held in 6 to 9 months. Of particular importance are the agreements made concerning project director authority, counterpart staffing, salary incentives, per diem, and timely decision-making at the implementation level if component activities are going to go forward. A more detailed discussion of these recommendations can be found in Chapter 4 of this report.

MID-TERM EVALUATION  
SMALL SCALE IRRIGATION MANAGEMENT PROJECT, INDONESIA

November 1989

## EXECUTIVE SUMMARY

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This report presents the results of the mid-term evaluation of USAID/Jakarta's Small Scale Irrigation Management Project (SSIMP)-Project No. 497-0347. The Project Agreement for SSIMP was signed on August 30, 1985, and its completion date (PACD) is September 30, 1993. The total cost is estimated at \$89.7 million. Of this, USAID will provide \$50 million (\$32.4 grant and \$17.6 loan), and the Government of Indonesia will provide \$39.7 million in cash and in kind.

SSIMP is a complicated project. It is based on four irrigation technologies: weirs, reservoirs, groundwater and lift irrigation. Reservoirs and groundwater are relatively new to the three eastern provinces where the project is operating—South Sulawesi, Nusa Tenggara Barat (NTB), and Nusa Tenggara Timur (NTT)—but the technologies are relatively straight forward. The complexity of the project stems from the fact that, despite its name, it is concerned with intermediate scale, as well as small scale, irrigation systems. This difference in scale further complicates the two major institution strengthening themes that are at the heart of the project and give it its importance:

- Decentralization of authority for intermediate scale irrigation projects to the provinces, which is in keeping with the official overall decentralization policy of the Government. The project provides an opportunity to help the Government find ways to make decentralization a reality for intermediate scale projects.
- Involvement of farmer beneficiaries in the subprojects from design through operations and maintenance, which also supports the Government policies of forming strong water user associations (WUAs) and the collection of user fees. This is the first time in Indonesia that trained WUA organizers will facilitate farmer involvement in the design stage of intermediate scale irrigation projects. It is one of the few efforts in the region to involve non-governmental organizations in developing WUAs.

There are also important training and special studies elements in the project. Participant training has been well done. Twenty-seven participants in long-term overseas training programs are now returning and

will provide an infusion of talent. In-country training needs to be better planned and executed. Special studies are intended to support other project activities. A new mechanism for planning and managing them is needed.

Japan is participating in the project through its Overseas Economic Cooperation Fund (OECF). This year, the OECF is providing local currency for groundwater activities in NTB and NTT. The OECF is expected to finance the Tiu Kulit dam project in NTB. These are very positive developments. They provide needed finance, but, more importantly, they will help ensure that the project's institutional aspects will be carried forward in future OECF irrigation activities. Similar participation by other donors should be encouraged, since the budget in the loan and grant agreements is fixed and is not sufficient to complete all aspects of the project.

### Project Accomplishments

The project has been in the implementation phase for four years with the full Technical Assistance team on site for the past two years. Although none of the surface irrigation systems has been constructed yet, substantial progress has been made on the design of these systems. Under the groundwater component, two small irrigation systems have been constructed but coherent plans for achieving the Project Paper objectives are still lacking. Progress has also been achieved in the institutional strengthening aspect of the project.

For the surface water component, an appropriate methodology for designing the irrigation works has been adopted. Table 2 summarizes the progress that has been made for each surface water system. The list of activities provides some idea of the complexity of developing intermediate scale irrigation projects as are being considered under this project. The basic concept that has been adopted appears to follow a logical sequence of events. This sequence commences with basic resource data collection, followed by collection and analysis of socioeconomic data, an environmental assessment, various engineering and land capability studies leading to a Project Justification Report (PJR) including information to establish the feasibility of a project,

final design and, finally, preparation of contract documents for international tendering. Table 2 shows that three projects have now completed prequalification of contractors. These three projects are expected to start construction within the next eighteen months. The design phase is expected to be completed by September 1991, at which time final designs and contract documents will have been prepared for eight projects.

Concerning the groundwater program, a less positive picture emerges. To date, two small groundwater systems have been constructed as demonstration sites. The quality of these systems is excellent and the level of farmer participation is to be commended. Some experience has been gained on appropriate technology for groundwater development. Additionally, studies and analyses have been carried out which have identified potential areas for groundwater irrigation development in NTB and NTT with some degree of confidence. The major need now is to get a combined exploration and development drilling program underway in both provinces. Priority should also be given to preparing a workable action plan leading to the construction of irrigation systems which incorporate the crucial farmer participation element. It is unlikely that the farmer participation level can be replicated on a broad scale unless new means can be found to substitute for the intensive Technical Assistance which is being provided at the initial sites.

#### Project Constraints

The project is behind schedule by as much as two years. However, much has been accomplished, and it is poised to move forward and achieve its objectives if time permits. Given the policy relevance of these objectives and their importance for future irrigation activities in Indonesia, the project deserves continued support and should be carried to completion. To do this, some important changes are needed.

Two major management problems impede implementation of SSIMP:

- the lack of an effective management structure, and
- the lack of management planning and monitoring systems for the project as a whole and its components.

Unless they are resolved, it is unlikely that the project can be successfully implemented, even if it is extended.

The Project Paper proposed ten surface water subprojects.\* Two are probably not technically feasible. Only three others can be completed before the current PACD, and none would have a full year's operation after completion. A two-year extension would allow all of these subprojects to be completed and provide at least a year of operations, which is essential if the WUAs are to be consolidated.

Groundwater activities are just beginning, and provincial groundwater project plans are urgently needed. The Project Paper called for sequential exploration, pilot test activities and expansion. Enough is now known about the aquifers and farmer organization so that these activities can and should be conducted concurrently. As a result, project progress will be expedited and better information will be gained on the water resources available.

#### Recommendations

The report presents recommendations of the evaluation team, including the following key points:

- A no-cost two-year extension of the PACD should be made, and the current TA contract should be extended to September 1991, with a follow-on TA contract let for construction supervision services and O&M support.
- A project management structure with clear assignment of responsibilities should be designated in the Government's Directorate General of Water Resources Development with clear responsibilities assigned to both Irigasi I (the groundwater directorate) and Irigasi II (the surface water directorate). The role of the TA Team Leader in Jakarta should be redefined to include responsibility for overall project planning, monitoring, implementation, providing advice and assistance to the DGWRD.
- Every effort should be made to reduce the detailed management activities of USAID by such actions as the use of umbrella PILs for the groundwater activities.

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\* Some project documents refer to nine sites, because two (Batujai and Surabaya) are located in the same watershed.

- More comprehensive implementation plans should be developed for the project and its components, and progress should be monitored against those plans.
- All surface subprojects should be constructed, except Raja Telaga and the Surabaya lift scheme, and additional foreign funding sources should be explored.
- The project should carry out the groundwater exploration, pilot study and expansion program concurrently, rather than in sequence, with the use of site profiles and careful monitoring of the physical and socioeconomic consequences.
- In keeping with the overall recommendation on project planning, groundwater programs should be planned for each province as soon as possible; and a TA sub-team should be put in place to support the planning and execution of expanded groundwater activities in all three provinces.
- Arrangements should be made to provide water user association organizers to support the groundwater programs in all three provinces.

## ANNEX E

PREVENTIVE MAINTENANCE PROJECT/CHANNEL MAINTENANCE PROJECT  
COMPONENT OF THE IRRIGATION MANAGEMENT SYSTEMS PROJECT:  
START-UP WORKSHOP REPORT  
(ALEXANDRIA, EGYPT) AUGUST 1-5, 1989

From August 1 to 5, 1989, a highly successful project start-up workshop was held in Alexandria, Egypt, for the Preventive Maintenance Project/Channel Maintenance Project (PMP/CMP) component of the Irrigation Management Systems Project. The workshop was attended by 41 participants, (30 Egyptians and 11 Americans), representing various offices of the Ministry of Public Works and Water Resources; the Office of Irrigation and Land Development of USAID/Cairo; Morrison-Knudsen Engineers, Inc. (the contractor for the project); two public excavation companies; various directorates; and PACER, a local consulting firm subcontracted to MKE. (See Appendix A for the participant list.) The venue was the Sheraton Montazah Hotel in Alexandria.

The workshop was conducted by two facilitators, Tom Leonhardt and Susan Gant. The main objective of the workshop was to disseminate critical project information to the multitude of players who will eventually be involved in the implementation of the PMP/CMP. Secondary objectives were as follows:

1. To begin defining management roles and responsibilities
2. To study critical issues and concerns involved in starting up the project
3. To make recommendations about future steps

The greatest challenge faced by the facilitators was to handle both the training and administrative aspects of the workshop while conducting a completely bilingual program.

The workshop outcomes can be categorized into four major products:

1. Agreements reached
2. Next steps
3. Definition of roles and responsibilities and
4. Recommendations for addressing the critical issues

These products will serve as a basis for planning and action over the next six months. They can be found in Chapter 3 of this report. Probably the most important outcome of the workshop was the development of a team spirit among the individuals involved in the execution of the project and the chance to meet and begin discussing its various components. Overall, the participants rated the workshop very highly, making such comments as:

1. Everything was done very well; more than excellent
2. If I could mark it on a scale of 1 to 5, I would give it a 5.
3. All workshop activities were well done.



Areas in which the participants felt improvement might be made included:

1. More small group work addressing issues and concerns
2. Air-conditioned meeting room
3. More emphasis on implementation strategies

Key recommendations made by the facilitators were:

1. Make sure all parties involved in the planning and implementation of start-up workshops understand their respective roles and responsibilities.
2. Arrange start-up workshops at a time when the technical assistance team has more facilities in place (phones, etc.) so that logistical arrangements are not overwhelming.
3. Continue to invite key players who are in a position to answer critical questions about the project.
4. Continue to do bilingual workshops.

**ANNEX F**

**ISPAN PROGRAM DEVELOPMENT MEETING**

**24-25 OCTOBER 1989**

**ISSUES PAPERS**

**AGENCY CAPABILITY AND PERFORMANCE**

**ANALYTICAL CAPABILITY**

- PAPERS:**
- STRATEGIC PLANNING FOR IRRIGATION DEPARTMENTS**  
**GIL LEVINE**
  - NATURAL RESOURCE MANAGEMENT**  
**GIL LEVINE**
  - INVESTMENT POLICY FOR IRRIGATION DEVELOPMENT**  
**RANDY BARKER**

## **ISPAN Research Concept Paper**

G. Levine  
August 24, 1989

### **Strategic Planning for Irrigation Departments**

#### **Problem Statement:**

Irrigation Sector Departments in the ANE Region will require improved capability to plan in the context of increasingly complex and uncertain environments. The approach and procedures to develop this improved capability in specific institutional settings are yet to be defined.

#### **Background:**

Irrigation systems in many countries of the ANE region are functioning in an increasingly dynamic environment. Economic, social and political conditions are changing in ways that demand more of the irrigated agriculture sector and the government departments that serve that sector. There is increasing pressure for more production from irrigated areas; appropriations for recurrent costs are failing to keep pace with inflation and expansion of irrigated area; there is increasing competition from urban areas and industry for the limited water resources; and there is increasing concerns for adverse impacts of irrigation on the environment.

The combination of relatively rapid changes in the environment within which irrigation functions and increasing demands for more effectiveness and efficiency of the irrigated agriculture sector imposes the need for improved planning on the part of the irrigation agencies. Strategic planning in the decade of the '90s, however, will be a more complex activity than most irrigation departments have experienced. While engineering skills and experience, coupled with reasonable financial management and sophisticated political awareness could suffice in the past, strategic planning (and tactical planning) now requires more effective consideration of economics, of agricultural and environmental sciences, and of social factors, in addition to skill in dealing with engineering and political dimensions.

A fundamental question arises: How can the irrigation departments of the region develop the necessary strategic planning capability?

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As with other aspects of irrigation, each irrigation department is a product of the site specific conditions in which it is located; therefore, each is unique and specific answers to the basic question must be developed with adequate recognition of the site conditions. However, as with other aspects of irrigation, many questions and issues transcend site specific conditions, and answers can be applicable to more than one department and country. Within the ANE Region, South Asia is an area where this is particularly true. India, Pakistan, Bangladesh, Sri Lanka, and Nepal share a common experience that remains important today -- major governmental involvement with irrigation during the period of British colonial rule. The result is major similarities in irrigation department structure, engineering rules and procedures derived from that similar earlier experience, and similar problems in addressing strategic questions.

The irrigated area included in the countries of South Asia represents about 50% of the irrigation in the world. Improvement in irrigation planning in the region would be of major benefit.

#### Problem Issues:

Three inter-related questions underlie the problem of improving planning capability:

- 1) How can departmental analytical capacity be increased?
- 2) How can the agricultural, economic, environmental, and social understanding and skills necessary for addressing current and future problems be made available to the departments?
- 3) How can a strategic, mid-range planning perspective be developed to complement current incremental planning?

1. In most of the irrigation sector departments, planning is more of an "art" than science. Very heavy reliance is placed upon experience -- that of Chief Engineers, Advisors and External Consultants. In the case of specific projects, substantial engineering analysis is incorporated into the planning and design process. There is less relevant experience related to larger scale planning, including that related to watersheds and groundwater basins; such analysis as is attempted, generally is hampered by a lack of data, as well as by lack of understanding of the more complex inter-relationships..

2. Most of the irrigation-related departments in South Asia are single discipline departments (particularly the Departments of Irrigation). Adding other disciplines is difficult because of the lack of career path and lower status of the non-principal discipline.

3. Insufficient planning staff, combined with an abundance of relatively immediate needs results in short-time frame for planning. Longer term planning usually is considered a luxury; even mid-range planning is difficult to address, in the light of immediate problems and needs.

#### Research Program Elements:

Two basic options exist for addressing the problem, each of which could be carried out independently, though a tandem arrangement is more logical. Concurrent efforts would be feasible.

1.) To more adequately understand the institutional environment in which improved capability is to be developed, a series of case studies of the planning process in individual departments should be carried out. The studies would detail both the internal environment for planning within the departments, and the external environment that influences the process of planning. The case studies could be designed to yield information on which to base a decision-tree model that would identify the most appropriate approach and procedures for developing improved capability in specific settings.

2.) To identify and evaluate the problems encountered in implementation of a program to improve planning capability an "action research" effort could be initiated. In this effort, one or more irrigation departments would attempt to improve their medium-term planning capability, using the approach and procedures considered most appropriate given current understanding. A system of process documentation would provide the feedback on problems, and provide the basis for modification of the approach and/or procedures. The experience of the action effort would be a test of the understanding gained from the case studies.

## Natural Resource Management

Dr. Gilbert Levine

### Problem Statement:

Irrigation Departments increasingly are being drawn into issues of natural resource management, issues that go beyond their traditional concerns for water supply, drainage and salinity. These issues typically revolve around the sustainability of fundamental water resources. However, the definition of appropriate areas of responsibility and the mechanisms for meeting those responsibilities have not been defined.

### Background:

Watershed management long has been recognized as being an important concern for irrigation departments because of the potential impact on the quantity and quality of the basic water resource. However, beyond possible involvement in the identification of the watershed and in expressing concern about impacts on water supply and sedimentation, irrigation departments frequently had little authority or responsibility related to management of the watershed, itself. Departments of Forestry, in some cases Departments of Agriculture, and more recently Departments of the Environment usually have had primary responsibility. In recent years, however, demographic pressure in watershed areas, increasingly adverse impacts of upstream activities on water quality and quantity, and the relatively larger, more mobile, more technically trained cadre of the irrigation departments are raising questions of the need for more, and more effective contribution of the irrigation departments to the management of watersheds.

Where irrigation departments utilize groundwater as an integral part of their water supplies, their involvement in management of that resource is clear, though frequently their responsibility and authority are not. Where a reasonable groundwater reservoir exists, whether or not its use is a formal part of irrigation department responsibility, its use frequently affects the operation and effectiveness of the system, and the operation of the system impacts on the viability of sustained use of the groundwater. Irrigation departments vary in their view of management of groundwater; some ignore it entirely, others maintain awareness through monitoring; few take an active role relating to management of the resource. As new readily developed surface supplies become scarcer, and as competition for existing water resources grow keener, the need for designed conjunctive use of surface and subsurface water is gaining recognition. Implicit in this type of system is the need for effective management of the groundwater basin.

Thus, basic, and increasingly important needs for improved watershed management and groundwater basin exist. What are appropriate roles, responsibilities and authority for the irrigation departments are unanswered related questions. It probably is appropriate to consider these questions separately for watersheds and for groundwater basins, given the differences in the characteristics of the surface and subsurface basins, and the differences in implicit interaction of the department with the resource.

The site specific nature of irrigation activity, both in its physical and institutional forms suggests that the definition of appropriate roles, responsibilities and authority will be different for different systems. Where the watershed or basin transcends the borders of the state or province, or other administrative unit within which irrigation responsibility is vested, the role of the irrigation department obviously would be different from a situation where the resource was predominantly intra-state. Notwithstanding these differences, the similarities among many irrigation departments, based upon similarity of function as well as similarity of institutional form, suggest that an understanding of appropriate bases for defining the ways in which irrigation departments can contribute to water resource management will be applicable in a range of locations.

#### Problem Issues:

Management implies the ability to respond to information about performance in the field to achieve agreed upon objectives. In the contexts of both watershed and groundwater basin management a number of questions relating to management opportunities must be answered before the roles of an irrigation department can be defined:

1) What types of feasible management responses within the legal purview of the department, are available to the irrigation department or other departments or authoritative groups with which the irrigation department interacts?

2) To what extent are the objectives of resource management, as perceived by the government, in agreement with the needs of the people who live and work in the watersheds and groundwater basins?

3) Is information available, or being obtained, that will permit appropriate and informed management decisions?

1. Many of the problems associated with watersheds are the result of basic natural forces -- erosion, variations in precipitation and changes in natural vegetation. These forces, and their impacts often are changed -- usually accelerated -- by



human activity. In the case of watersheds, much of this activity tends to be dispersed, small scale and driven by family needs. Some types of lumbering are concentrated and larger scale, with different driving forces. Control of dispersed and small scale activity is difficult and not easily managed by governmental agencies, though local groups frequently are able to exercise degrees of control, depending upon local conditions, legal factors and support of governmental authority. Control of more concentrated, larger activities is, in theory, more easily effected, but often is hindered by political considerations.

The problems associated with groundwater basins are more directly related to human activity. Changes in climatic variables are less significant in groundwater basins, due to the time lag in response of most basins to those changes. Significant opportunities for management of groundwater basins are possible in many basins, in that water levels often can be drawn down more than normal to induce additional recharge, and extractions can be increased during temporary periods of need. These options exist in surface watersheds only where storage reservoirs exist.

2. The general objective of resource utilization sustainability is one to which all users of watersheds and groundwater can agree. in principle. However, the time frame in which sustainability is viewed frequently differs among the different users, with governments taking the longer view and individuals under financial pressure having a short time horizon. The view of sustainability is also conditioned by the costs -- in terms of benefits foregone, and in terms of outlays for conservation. This combination of factors, and the differences in perspectives it engenders is not confined to developing countries. The developed countries also face questions of time perspectives and costs in a wide range of resource management issues -- ranging from local problems of erosion control to broader areas of water quality maintenance to global issues of atmospheric degradation and climatic change. But a reasonable congruence of objectives is necessary before effective resource management can be achieved.

3. As with all managerial activity, information about performance in the "managed area", and understanding about the effects of changes in activity on performance are essential. The information needs of management have both systematic and ad hoc elements -- systematic to make the longer term managerial decisions, and ad hoc to be responsive to unanticipated and short term events. Understanding is gained through experience and research, both of which gain from a planned and systematic approach.

Management of groundwater basins can be carried out with different levels of intensity, depending upon the completeness, accuracy and precision of the information base about the basin. Fully active management includes utilizing the reservoir capacity for optimal storage, efficient pumping and quality protection.

For this type of management, comprehensive and detailed information is necessary; relatively few basins in the ANE region fall in this category, though examples can be found in Bangladesh and Egypt.

Passive management focuses on adequate monitoring of aquifer water levels, and water quality where potential quality problems exist, primarily to become aware of developing problems. Between the extremes of fully active and passive is a broad range of management intensities.

#### Research Program Elements:

##### Watersheds:

1) The ambiguous nature of irrigation department responsibilities relating to watershed management in many countries suggests that an identification and characterization of the different types of department contributions to watershed management currently being made would help to define feasible roles and responsibilities. For example, the National Irrigation Administration in the Philippines has significant direct involvement in questions of watershed management; other departments have less direct involvement.

##### Groundwater Basins:

1) While fully active management may be a theoretically desirable goal, the cost of information collection and management operations may not be justified by expected benefits. However, the relation between appropriate level of management and the information required to adequately support management decisions is poorly defined. Systematic studies of this relationship is a logical priority.

2) The dispersed nature of most pumping in the ANE countries suggests that management will involve the ability to modify the behavior of those users. Knowledge of the factors that influence that behavior becomes an essential precursor to development of an management strategy and plan. Field studies of pumping practice and rationales in areas of significant groundwater potential would be a major contribution.

3) In a number of countries, e.g. Pakistan, Egypt, parts of India, government-operated pumps extract significant fractions of total withdrawals. In principle, this provides an opportunity for active management. The experience with government tubewells frequently has not been good, but some wells have functioned satisfactorily. The analysis of factors associated with the successful government tubewells should provide a basis for judgement about the potential for management utilizing this type of well.

## ISPAN Research Concept Paper

R. Barker  
Sept. 28, 1989

### Investment Policy for Irrigation Development

#### Problem Statement:

Growth in agricultural production and productivity in the ANE Region has been closely linked with the expansion and improvement of irrigation facilities. The decline in irrigation investment over the past decade threatens this sustained growth. A rational long-term investment strategy is needed, but this will require a much clearer understanding of the potential impact of alternative investments on production and productivity.

#### Background:

Much of the research on irrigation in Asia is designed to assess the performance or improve the operation of specific irrigation systems. There has been little attempt at the national or regional level to look at trends in aggregate irrigation investments and to examine policy issues. A 1988 paper by Levine, Barker, Rosegrant and Svendsen on "Irrigation in Asia and the near East in the 1900s: Problems and Prospects," identifies a sharp decline in irrigation investments and new area irrigated at the regional level over the past decade. These findings point to the need to examine more carefully the shifts in investments priorities which have occurred recently within the irrigation sector, and the potential impact of these downward trends on new area irrigated and agricultural production.

The decline in irrigation investment has several root causes: (a) the relatively favorable food security situation in the region as a whole, and the steady decline up to 1988 of world grain prices; (b) the large public and foreign debt loads carried by most of the agriculturally based economies in the region; (c) the stiffening political resistance from environmental interests and those displaced otherwise negatively affected by irrigation development potential in many countries in the region, and the corresponding increase in per hectare cost of irrigation development. The first two factors above may be a reflection of cyclical trends which, when reversed, will bring forth new investments in irrigation. Alternatively, if as the last factor suggests, the cost of further irrigation development is rising sharply, than greater attention must be given to improving the performance of existing irrigation systems.

There are sufficient differences among countries of the region in terms of both irrigation potential and stage of irrigation development that a single pattern or development strategy will be inappropriate. Our understanding of some of the complexities of the irrigation sector and irrigation organization has improved in the past 15 years. Nevertheless, we still lack adequate information on which to base appropriate national strategies for irrigation development. Opinions differ widely as to the best investment strategies under different circumstances. The fact that these differences of opinion exist, and that irrigation has been so central to the development of Asian agriculture suggests that further research is urgently needed.

## **Problem Issues:**

There are issues that need to be addressed in attempting to develop a long-term investment strategy for irrigation:

(1) What data and analyses are needed in order to determine for different countries with differing circumstances the most appropriate choice among investment alternatives?

(2) Who should be responsible for maintaining data files on irrigation investments at the national and regional level?

1. Very little effort has been made to date either at the national level or in the international donor agencies (e.g. World Bank) to assemble data on irrigation investments. In most instances, it is difficult to determine the proportion of investment that goes to (i) construction of new irrigation systems, (ii) rehabilitation of existing systems, or (iii) improvement in management of existing systems. With the paucity of data available, it is even more difficult to assess the impact of these investments on crop production and productivity. In the absence of such data, it would seem that investment decisions are based more on short-term fluctuations in the price of rice than on meaningful projections of the impact of additional irrigation investment on production. Given the long gestation period for most irrigation investments, this procedure is likely to result in significant cyclical fluctuations in rice supply in the ANE Region.

2. The analytical capacity in national irrigation systems and donor agencies is tied up primarily in feasibility studies for specific irrigation systems. As pointed out earlier, most of the research on irrigation in Asia is also focused on the systems level. No agencies at either the national or international level seem to be responsible for gathering and analyzing aggregated or macro-level irrigation investment data at the national or regional level.

## **Research Program Elements**

No additional effort is likely to be made in macro-level collection, storage, and assembly of investment data until the utility of such an effort can be clearly demonstrated. Available data should be assembled where feasible to address the following objectives:

(1) to understand, on a country by country basis for selected countries, the nature of the shift in irrigation investment priorities, and the implications for growth in agricultural output,

(2) to determine for differing circumstances the most appropriate choice among investment alternatives.

The accomplishment of these objectives will require first a series of country level studies. These studies will provide insights with respect to the impact of shifting investment priorities on production, and will also identify areas where data is simply inadequate to reach sound conclusions. The information gathered from these studies can also be used to model the choices among investment alternatives.

Once research results are obtained with existing data that are seen to be useful to national policy makers and international institutions, then it will be appropriate to discuss how the data gathering and analysis for investment policy decisions can be institutionalized, and how the quality of the data can be improved. This discussion might initially take the form of a conference sponsored by ANE, IIMI, and other interested parties.

**AGENCY CAPABILITY AND PERFORMANCE**

**OPERATIONS AND MANAGEMENT**

**PAPERS:   DEVELOPING MANAGEMENT CAPABILITY IN IRRIGATION  
          INSTITUTIONS  
          DAN EDWARDS**

**IMPROVING IRRIGATION SYSTEM PERFORMANCE THROUGH  
IMPROVED DESIGN, OPERATIONS AND MAINTENANCE  
DON SLACK**

## DEVELOPING MANAGEMENT CAPABILITY IN IRRIGATION INSTITUTIONS

Daniel B. Edwards  
Training Resources Group  
October 1, 1989

### THE PROBLEM TO BE ADDRESSED

The ISPAN document "Strategic Concerns for Irrigation in the 1990s identifies" the need "...to strengthen the management capability of irrigation agencies, and promote a reorientation of organization and staff objectives to irrigation system performance..." as one of five key strategic concerns for the sector in the next ten years.

A review of current AID project evaluations and reports completed by ISPAN in the past two years indicates the following range of management-related problems throughout those countries evaluated or reported on (India, Pakistan, Nepal, Egypt, Sri Lanka, Indonesia). Additionally, anecdotal information from ISPAN consultants and staff returning from assignments indicates that the management problems listed below are typical of most irrigation programs throughout the world AID serves:

- o Few or no written performance standards for staff; non-linkage of system performance to staff performance (lack of results-oriented management);
- o Little orientation of staff towards consumer or service orientation to clients;
- o Bureaucratic management practices in a predominately public sector with low staff morale, motivation varied but tending towards the low end;
- o Little consensus of staff towards a shared sense of goals and purpose and/or vision for the agency;
- o Highly centralized, non-delegative management practice and lack of confidence in mid-level management;
- o Unclear definitions of what constitute management tasks and how they differ from technical management or direct technical work;
- o Intra-unit and intra-level coordination and communication problems and blockages within management structures;
- o Non-existence of operational planning and annual work planning procedures;

- o Top down, unrealistic budgeting procedures and a non-budget approach to expenditures (spend until the controller says stop);
- o General lack of team work as evidenced by poor project coordination;
- o Management information either not available, overly centralized and/or not used to improve or adjust system performance.

#### **KEY ASSUMPTIONS/BACKGROUND**

#1 There is a shift in development investment away from infrastructure. To sustain and best utilize the past investment, the next challenge is to develop human resources, strengthen training and provide institutional development; management development is key to institutional strengthening.

"Investment in agriculture and irrigation increased sharply through the 1970s, but since 1979 there has been a significant decline in real lending for irrigation development among the four major donors... During the period of expansion the principal focus was on infrastructure development... The period since the late 1970s has seen increased efforts to improve the productivity and performance of existing systems." ["Strategic Concerns for Irrigation in the 1990s"]

#2 One area of important need is to improve the ability of managers to deal with the complexity of human systems; engineering technology is not only in less demand in irrigation, engineering solutions are available; but management solutions and examples of management excellence are few. Models are needed.

One implication of shifting priorities from infrastructure investment to system performance is that another set of problems must be dealt with: social problems, agriculture, environment, willingness and ability to pay, cost effectiveness, operating and maintaining systems, dealing with farmers and organizations, delineating responsibilities, getting the best performance out of the people that are employed to run the infrastructure. These operational issues require skills in the management of human systems. These are performance issues in the human dimension. Unless performance is addressed, the infrastructure cannot be sustained. Unless the base of problem solving is spread out and includes more than a few top decision makers in key ministry positions (delegation learned and practiced), bureaucracies will fall of their own weight. Management is the key issue of the next twenty years.



#3 Management development is measured by improved system performance. It needs to be tailored as an intervention to the specific performance problems and needs of an institution, even though many management principles may be generic.

The ultimate utility of any management improvement (and any models or programs developed) program will be in how committed a given institution is to developing and improving its performance; management skills can be transferred and learned but the application within an organizational system requires an institutional commitment to support, reinforce and reward new behaviors. This requires a practical, institution-specific approach to improving performance on the job. Theoretical or generic training approaches given outside of the specific institutional setting will have limited utility.

#4 AID and ISPAN are in a good position to take leadership in defining specific management needs across the sector and developing appropriate management interventions or models for action.

AID is interested in institutional development and is increasingly developing a niche for improving system performance. With access to ten different irrigation program countries, it is possible to define common management needs, field test models and use selected programmatic structures to adapt the training to individual country needs. The consortium has a proven track record in developing management improvement models and applying them in a variety of fields (health, water and sanitation, development institutions, diplomacy); irrigation should not prove to be more complex than other fields but current, effectively applied models do not exist.

#### **QUESTIONS TO RESOLVE/ISSUES**

Which country programs are most ready to undertake management development and would be a good example with which to develop a model?

Experience indicates that management development is most effective where there is an organizational predisposition and conditions are conducive to change (leadership support from the top, a core group of commitment to improvement among the management ranks, an institutional improvement program operating in conjunction with management improvement, pressure from political forces for improving performance and support for change, etc.). If a management development program were developed for (and tailored to the needs of) one institution, where would it have the best chance of success in ANE countries?

Could a specific country program (or more than one country) cost share with ISPAN the development of a specifically tailored management training model and program that could later be presented in written generic form for adaptation to other countries?

#### **SUGGESTED MECHANISM**

##### Strategy A: Specific Country Project Made Into a Generic Model

1. Find a specific country program that wants management development within the structure of an on-going project.
2. Conduct field interviews and research to determine the management problems and needs and gather performance data and anecdotal information to be used as case study and problem material in the subsequent program.
3. Design a management development program to be carried out for that country program blending state of the art management principles with the specific requirements of that institution.
4. Conduct the program and document the procedures and training that takes place.
5. After the model has been delivered (this may take up to a one year period), develop manuals that can be used as models and adapted to other country settings.
6. Select one or two training institutions and train the staff in how to use the model. It may be possible to pre-select the training institutions and include them in the complete program development process.

Time Required: to complete all six steps would require three phases: program development and delivery for one institution (about a year or year and a half); writing up and publishing the model with materials, graphics in manualized form (about 6-8 months); dissemination and training selected institutions in the use of the model (one to two years, if done using a real country case, less time if done as a pure workshop).

##### Strategy B: Curriculum Development and Networking Workshop

1. Examine existing management training models that have been written, review current management training practice conducted at teaching institutions in the Philippines, India and Thailand.

2. Conduct a written survey of current management problems existing in all or selected ANE countries; conduct limited field research to verify and deepen the survey material.
3. Analyze the data for trends and compare the identified problems and needs with current curriculum.
4. Write up the results and propose model curricula for training institutions in the sector.
5. Conduct a networking issue oriented workshop inviting all ANE training institutions and disseminate the results.
6. Develop a and publish model curriculum that improves on current practice as an outcome of the workshop.

Strategy C: Organizational Development Approach/Process Model

1. Select one irrigation institution that agrees with the idea of institutional change and management development.
2. Engage the top-level management in a "self study" program in which managers link with consultants to conduct interviews and define the management problems.
3. Hold a workshop to discuss the results and define a management development program that would include a combination of organizational development and systems development tasks (to be carried out by the participants) coupled with specific skill training events,
4. Design the training portion of the program.
5. Conduct the program in conjunction with periodic meeting and workshops designed to monitor and refine the systems development tasks.
6. Write and publish the process elements of the approach (using the example as a case study) so that other institutions, working with third party consultants could conduct a similar process.

**TITLE: IMPROVING IRRIGATION SYSTEM PERFORMANCE THROUGH IMPROVED DESIGN, OPERATIONS AND MAINTENANCE**

Dr. Donald Slack

**PROBLEM STATEMENT:**

To sustain growth in productivity of irrigated agriculture in Asia, ISPAN has identified a number of concerns (ISPAN, 1989). Included as a major concern or opportunity is improvement of irrigation system performance. There are several ways in which such improvement can be approached. One avenue of approach is through improvement in hardware via improved design. This approach can also be used to improve maintenance by incorporating maintenance aspects into the design and construction phases of a project. (Construction need not imply only new projects but should include rehabilitation as well.)

**BACKGROUND:**

Keller, et al. (1988) found it useful to define an "irrigation system" as that part of an "irrigation scheme" which serves to capture, deliver, apply and remove water to or from agricultural land. They then used the term "irrigation scheme" to refer to the entire irrigated agricultural production system which an individual or group of irrigation systems serve, plus the associated watershed, inputs and effects of the enterprise. Rheigans (1989) notes that irrigation system performance is a major concern, but wonders just what is the definition of "performance". Keller, et al. (1988) have addressed this point as well and define "irrigation system performance" as a measure of an irrigation system's success in achieving established objectives, often defined in terms of overall operational efficiency and meeting equitable water delivery schedules in time and space. This is the definition used in this paper and it should be noted that to adequately assess performance, it is thus necessary to adequately define the objectives of each irrigation system and/or scheme since objectives likely vary from scheme to scheme or even from system to system within a scheme.

Performance is obviously affected by system management and also by the physical aspects of the system itself. While management depends, in part, on physical characteristics of a system, there are also many other aspects of management that depend on the socio-economic setting and the public and/or private sector institutions or agencies responsible for management. Since this paper addresses "hardware," the focus will be on physical aspects of a system. However, it is impossible to completely separate the physical and social aspects of management, so the latter will be referred to as well.

From a hardware standpoint, improved performance is obviously most appropriately addressed during the design and construction phase of a system. Improvements in the design and construction phases of a new project or a project undergoing rehabilitation can thus be a point where real improvements can be effected.

There has been considerable discussion in the literature, cables from missions and ISPAN meetings about Operations and Maintenance (O&M). These discussions have most often been from the viewpoint of "cost-recovery" for O&M. However, the U.S. General Accounting Office (GAO) submitted a report to the director of USAID in which they noted that improvements in design and construction could significantly reduce O&M costs (Anon., 1983). For example, "reliability analysis" of existing systems can be used to identify critical maintenance elements which may be improved in new construction or rehabilitation to optimize investment relative to O&M. Lessons learned from such analysis can also lead to improved maintenance programs which recognize critical O&M elements of a system. Thus the hardware aspects of O&M can be improved by improving the design process, designing for O&M and analyzing existing systems to identify critical elements and develop appropriate O&M programs. Obviously such attempts at improvement must include the software aspects of improved farmer participation as well.

In a letter defining possible fruitful areas of "research" Bob Yoder (1989), comes back to "improved design analysis" as one of three important needs. He mentions particular elements of systems for which best approaches need to be developed or identified such as "intakes, slope stabilization, canal lining, indigenous tunneling, distribution devices, etc."

The WMS-II project undertook 'special studies' in four major areas; irrigation system modeling, farmer participation activities, interfacing between farmer users and agencies and management intensity. Keller, et al. (1988) note that, although there has been much talk about doing "interdisciplinary" work related to irrigation system management, the WMS-II work was primarily "multidisciplinary" in nature and we are just now at the point where we can embark on truly "interdisciplinary" planning and work. They note that many irrigation systems and the schemes they serve have been designed with little regard for the social and political, as well as the engineering and agronomic aspects of both the management of deliveries and the efficient on-farm use of water. Typical "hardware" solutions to poor irrigation system performance involve modifications of planning, design, construction operation and/or maintenance procedures.

Simply increasing management intensity will not necessarily lead to improved management or improved system performance. Success depends on the objectives of the system and selecting and implementing a combination of "software" and "hardware" inputs that will best achieve the objectives. Hardware and software "fixes" cannot be made in isolation because they are closely linked.

What is a real need is a means for actually designing an irrigation system management plan in conjunction with the hardware. This requires a truly "interdisciplinary" approach. Thus an important issue is the development of a "global" interdisciplinary "model" for the design and/or management of irrigation systems.

One approach alluded to by Keller, et al. (1988) is that of an "expert system." This approach is also sometimes referred to as a "knowledge based system" and develops a "global framework" for planning, design and management of new or rehabilitated systems which includes the multidisciplinary aspect of the process in an interdisciplinary way. Basically this approach "catalogs" the informed judgment of "experts" in a model structure in such a way that a designer can draw on that judgment in designing a system. It formalizes the process and strives to ensure that all critical aspects of a design will be addressed .

In summary, two important questions that are hardware related and address the problem of irrigation system performance are:

1. How can irrigation systems be best designed so that both physical and social aspects are optimized relative to system objectives?
2. How can problems associated with maintenance best be identified in the design phase so that critical elements of a system are properly designed for system life and a reasonable maintenance plan can be developed?

#### **SUGGESTED MECHANISMS;**

These problems can be addressed through a variety of mechanisms. It would appear that an "applied study" represents a logical first step in both cases since, in the first case, there does not exist a well-defined "global" interdisciplinary model for irrigation design and management and in the second case, the "hardware" aspects of maintenance are likewise often not well defined during design and construction phases. An almost essential follow-up to applied studies would be a workshop or workshops which deal with the topics and serve as a forum for dissemination as well as refinement and further development.

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**PUBLIC POLICY ISSUES**

**SECTOR ORGANIZATION**

**PAPER:       DEFINING SECTORAL RESPONSIBILITIES IN IRRIGATION  
              DAN EDWARDS**

**REVENUES**

**PAPER:       MOBILIZING   RESOURCES   TO   SUSTAIN   IRRIGATION  
              OPERATION AND MAINTENANCE  
              LES SMALL**

**LEGAL FRAMEWORK**

**PAPER:       LEGAL/INSTITUTIONAL   FRAMEWORK   FOR   IMPROVING  
              IRRIGATION  
              GEORGE RADOSEVICH**

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## DEFINING SECTORAL RESPONSIBILITIES IN IRRIGATION

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October 1, 1989

### THE PROBLEM TO BE ADDRESSED

The basic issue in sectoral organization revolves around the questions "who is responsible for the product at its various stages; who controls the product and manages its use; how is its use determined: who has access to it; how is its cost determined and who pays for it; and how are policies for all of this determined? Sectoral organization revolves around issues of power, control, politics, influence, and delineation of roles and responsibilities. All AID irrigation sector projects become either constrained or enhanced by clarity or the lack of it in sectoral organization. Most evaluations indicate that unclear sectoral organization and definition of responsibilities is a major constraint to effective project implementation.

There are a number of major task areas or responsibilities required in the delivery and use of irrigation water as a product (from planning to use and disposal of excess). There are also a number of major actors that interface with the product at its various stages. The structure of the sector ideally should determine clearly the respective roles and responsibilities.

The major stakeholders (interested groups) at various levels include: central and regional irrigation department offices, central and regional agricultural ministry offices, farmers, farmers organizations, private sector interests that sell or buy agricultural products and market equipment and services in the sector, and politicians that represent the interests of the various stakeholders. Other entities enter in, depending upon the particular country.

The need is to have a clear delineation of tasks and responsibilities at the various levels in the sector to avoid overlap and duplication of efforts and to be able to fix responsibility for results (accountability) or output. Unfortunately, in most of the ANE countries AID works in, sectoral responsibilities are confused.

Examples and questions to illustrate the problem (derived from project evaluations and reports):

- o Who advises farmers on the appropriate use of irrigation water, the irrigation department or agricultural extension?



- o Who maintains the system, the water users, the irrigation department? At what point in the infrastructure system does responsibility shift from one level to the other?
- o As user associations take on more responsibility for operations and maintenance, who determines this responsibility and how does it interface with the irrigation and agricultural departments?
- o Who markets?
- o To what extent should tariff and use policies be set by the users? Who should set policies?
- o What are the areas of responsibility in most systems that do not get appropriately addressed?
- o How are issues of equity in water use determined?

The questions listed above occur over and over in program and project evaluations. They are all issues of sectoral organization and responsibility.

#### **KEY ASSUMPTIONS**

- #1 Sectoral development, like institutional development or infrastructure development, is or should be, a legitimate focus of development planning and development funding and intervention, given a desire for change by the country or institution involved.
- #2 Sectoral arrangements tend to reflect economic, social, and political stages of development and organization and necessarily must vary by country; there is no ideal or perfect sectoral arrangement or structure. However, task definition and performance standards at various levels can be determined and responsibilities can be clearly assigned without overlap and confusion, no matter what the particular structure.
- #3 The assumptions made about the nature of the product (irrigation water) will tend to influence how the sector is organized to provide it. For example, if irrigation is considered purely an economic good, the sector will be organized for cost effectiveness, economy, user accountability for costs and self sustainability. If it is considered a social good, costs will be spread over the entire population, organizations that support it will be considered sources of employment and costs factors and cost measurement and accountability will tend to be minimized.

## **QUESTIONS/ISSUES TO RESOLVE**

Given the complexity of sectoral arrangements as an issue area, what would be the most useful product for AID that ISPAN could provide?

-e.g., a process model (workshop design or facilitation guide) that demonstrates how to resolve unclarities that can be used by project developers with consultant assistance?

-A guideline that defines criteria for a well functioning sector at the various levels (taking into account different stages of development) and provides development planners with indications for intervention?

-A list of project design considerations that indicate common problem areas or issue in sectoral organization that will need to be addressed before a project will be successful?

-Which ANE country would be a likely candidate for serving as a client and testing ground for a product?

## **SUGGESTED MECHANISM**

### **Strategy A: Action Program and Model Development**

1. Find a specific country that wants to collaborate in developing a product that will assist in clarifying sectoral arrangements.
2. Design a "sectoral organization" conference with the primary stakeholders in the country that will serve to clarify roles.
3. Document the process, and later develop a process guideline that can be used regionally.
4. Conduct a regional product dissemination workshop for interested ANE countries to present the model and assist those countries in developing strategies to clarify their own sectoral arrangements.

### **Strategy B: Guideline for Project Development**

1. Conduct desk research to determine the sectoral organization of all ten ANE counties. Analyze the range and determine a typology of sectoral organization (centralization--decentralization, private--public sector).

2. Define the necessary tasks and define criteria for excellence at each level of sectoral organization (e.g. The policy and strategy level of the sector should be responsible for the following... Good planning in irrigation should provide input from farmers, provide cost effective solutions , etc,).
3. Conduct field research in 3-4 selected countries to test if the sectoral organization meets the criteria established and determine a profile of deficiencies and write it up.
4. Conduct a sectoral review and workshop with the data gathered in the recipient countries involving key decision makers in determining what appropriate project would assist them in sectoral reorganization.
5. Assist the identified countries in developing a project on this basis that will improve sectoral organization and help them manage the reorganization.

**Mobilizing Resources to Sustain Irrigation Operation and Maintenance\***

by

**Leslie E. Small\*\***

**September 1989**

**\*Irrigation Issue Paper prepared for ISPAN. The views expressed in this paper are those of the author, and do not necessarily reflect the views of ISPAN or the policies of U.S.A.I.D.**

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## Mobilizing Resources to Sustain Irrigation Operation and Maintenance

### Problem Statement

Governments in many developing countries are being forced to reconsider their policies for managing their irrigation infrastructure. The rapid expansion of this infrastructure in recent decades has led to large increases in the demand for recurrent expenditures for its operation and maintenance (O&M). But the fiscal stress experienced by many governments in the 1980s has made it increasingly difficult to meet these demands. Emphasis is thus shifting toward policies which place greater reliance on mobilizing resources of the water users, both in the form of user fees to cover the costs incurred by government irrigation operating agencies, and in the form of increased direct participation by farmers in O&M.

In addition to the pressures for changes in irrigation financing policies resulting from internal fiscal difficulties, many governments have been urged by external donor agencies to reform their policies. During the past decade these agencies have shown a growing concern about the many distortions and inefficiencies induced by subsidies. The poor performance of irrigation, which seems endemic in Asia and Africa, is increasingly seen as caused in part by subsidies and the related lack of accountability between irrigation operating agencies and the farmers. Donor agencies are thus pressuring governments to implement systems of user fees to reduce irrigation subsidies and increase the rates of cost recovery.

But governments are encountering a variety of difficulties in their efforts to implement new irrigation financing policies. Political opposition to such changes is often strong. Administrative and information requirements can make it difficult and costly to collect fees. Water users may strongly resist paying for services that they have been accustomed to receiving free. And if such resistance leads to low rates of fee collection, the danger exists that attempts to finance O&M from user fees rather than from the government budget will lead to an even greater shortfall in funds, and thus to an even more serious deterioration of the irrigation infrastructure. Many governments thus face the dilemma of having irrigation financing policies which are unsatisfactory, while being uncertain of their ability to identify and successfully implement more attractive alternatives.

### Background and Assumptions

In promoting reform of irrigation financing policies, donor agencies emphasize the distortions caused by subsidies. These agencies encourage governments to reduce or eliminate subsidies by increasing the rate of cost recovery from irrigation, usually through a system of user fees. Often missing, however, is a clear specification of the objectives of irrigation financing policies. As a result, critical conditions necessary for user fees to realize the expected benefits are ignored.

Four efficiency and two equity objectives for irrigation financing policies can be identified: fiscal efficiency, water-use efficiency, operational efficiency, investment efficiency, equity between water users and others, and equity among water users. Reducing irrigation subsidies through cost recovery is useful only to the extent that it promotes these objectives.

To promote fiscal efficiency, user fees must generate revenues at a

lower cost than alternative approaches, such as raising taxes. Special attention must therefore be paid to the administrative costs of implementing the system of user fees. If these costs are excessive, user fees could actually reduce fiscal efficiency.

It is often assumed that by eliminating the subsidy for irrigation, user fees will give farmers incentives to use water more efficiently. Within the current context of most Asian countries, however, this assumption is not valid. Such incentives are created only when true water pricing exists, whereby the water user is able to affect the amount paid for water by his or her water use decisions. But where water is delivered to large numbers of small farmers, the high cost of implementing systems of water pricing has led to the widespread use of area-based fees. This reduces administrative costs, but fails to create incentives to economize on water use.

Operational efficiency is probably the most important objective for irrigation financing policy. Funds need to be provided in ways and amounts which encourage satisfactory O&M. This requires that user fees be linked to the funds made available to the irrigation agency. When this link is missing, funds for O&M may be inadequate regardless of how much the farmers actually pay. This critical linkage occurs automatically whenever irrigation agencies are financially autonomous. Furthermore, by making the irrigation agency rely on funds that it collects from water users, financial autonomy also creates accountability linkages between the irrigation agency and the water users, thereby encouraging better O&M. These linkages are stronger the more decentralized the level at which financial autonomy prevails. Thus financial autonomy is a key condition affecting the extent to which irrigation fees can be expected to enhance operational efficiency.

When user fees include the capital costs of irrigation, investment efficiency (choosing investments with the most promising economic returns) may be enhanced if (1) the water users (or the irrigation agency responsible for repaying the capital cost from funds it collects from the users) know in advance that this payment will be required, and (2) the users or the irrigation agency have a voice in making the investment decision. An ex post decision to charge water users for the capital costs of existing projects cannot improve the investment efficiency of these projects.

Subjective equity objectives tend to be reflected in the highly charged political atmosphere that frequently surrounds discussions of user fees. It is often stated that poor farmers should not be made even poorer by imposing a user fee on them. This is an implicit equity judgment that compares farmers with unspecified other groups in society. Situations can be found where the overall policy and macroeconomic framework is so distorted and skewed against the rural sector that imposing user fees for irrigation may be inappropriate from an equity perspective. But in more typical situations, one finds that while irrigation farmers are poor, rainfed farmers and landless laborers are even poorer. User fees may thus promote equity between water users and others even though they require payments from poor farmers.

Finally, equity among the water users, as they themselves define it, is a very important objective for any system of user fees. If the users feel the system is inequitable, many are likely to refuse to pay, thereby eroding the legitimacy of the system. Most systems of user fees are based on some

measure of the service provided (such as area irrigated). Under this arrangement, all farmers are treated equally with respect to the services they receive. Attempting to incorporate differentials to reflect the income or wealth of the water users (as has been suggested by at least one donor agency) is of dubious merit on equity grounds because of the probability that it would be seen as unfair by many of the water users.

### Specific Issues

Earmarking of irrigation fees. The above discussion has pointed out the importance of decentralized financial autonomy with respect to the benefit of user fees on O&M. Yet many Asian countries lack a tradition of financial autonomy for irrigation agencies. A critical issue facing these countries is how they can move in a direction that will begin to bring some of the benefits of decentralized financial autonomy. One of the most promising approaches is that of earmarking funds collected from farmers for use in the O&M of the irrigation facilities serving them.

Water pricing. As water becomes scarcer, the importance of encouraging its more efficient use increases. Because of the high cost of making reliable volumetric measurements of water deliveries to many small farmers, most systems of user fees in Asia rely on area-based assessments rather than on true water pricing, making them unable to encourage more efficient water use. The key to water pricing, however, is not volumetric measurements per se, but rather the ability to the water user to affect the amount which he must pay for water through his water-use decisions.

This suggests the possibility of developing alternative approaches to water pricing. In some cases the length of time that water is delivered might be the basic unit of a pricing system. Alternatively, a flat amount could be charged for discrete irrigations. A third possibility is what is sometimes called "water wholesaling", whereby the central irrigation agency would deal with groups of users farming within a single portion of the irrigation system. Water would be delivered at the head of the service area according to an agreed schedule, with the charge based on the volume delivered. The users' group would then be responsible for distributing the water among its members, and for collecting from them the amounts needed to pay the central irrigation agency.

Encouraging the experimental development of alternative pricing systems could lead to insights regarding their effectiveness with respect both to improving the efficiency of water use, and to reducing the administrative costs of the system of water charges. In the case of water wholesaling, the irrigation agency's cost of operating the irrigation facilities should also decrease because some of the responsibilities of the agency would be turned over to the farmers. (Water wholesaling thus overlaps with the questions dealt with in the Irrigation Issues Paper on turnover, divestiture and privatization.)

### Suggested mechanisms

The earmarking of irrigation fees would need to be undertaken on an experimental basis in a country where the government was receptive to the idea. One or more workshops would probably be needed to design and explore

the various ramifications of such an experiment. Consulting assistance to the government might also be needed in the design stage. A documentation type of applied study would be useful during the implementation phase so that the results of the experiment would be more fully known.

Similar mechanisms would be involved with respect to developing alternative approaches to water pricing. In this case, however, an initial workshop would also be needed to explore the range of alternative water pricing mechanisms, and to define where they might be appropriate. The applied study should include an analysis of the effects of the pricing mechanisms on water use.

These suggested experimental activities would require a moderately long time (probably about 5 years) to implement. If this time frame is a problem for ISPAN, consideration might be given to mechanisms whereby ISPAN would collaborate with other agencies. ISPAN might thus encourage the initiation of such activities (through, for example, workshops to plan for and design the experiments), while other agencies supported their actual field implementation.



## LEGAL/INSTITUTIONAL FRAMEWORK FOR IMPROVING IRRIGATION

George E. Radosevich  
October 22, 1989

### Problem Statement:

In the past decade, it has become widely recognized that one of the major impediments to the progressive and sustained improvement of irrigated agricultural development has been the lack or adequacy of the legal/institutional framework from the national to the local levels. In every aspect of irrigation system activities whether small to medium scale projects, surface or ground water supplied or conjunctive use systems, public or private or public-cum-private systems, there is a need for systematic direction (objectives and policies), recognition of parties' rights and obligations (laws and regulations), management (resource, sector, and system), and control (sanctions and penalties) through an acceptable level of government promotion, assistance and intervention. How to achieve the proper mix of inputs from involved line agencies, legal department, political interests, and affected water users to formulate a dynamic legal/institutional framework for improving irrigation in the ANE Region presents a independent challenge for each country involved.

### Assumptions:

It is assumed: (1) the focus is on the ANE Region only, but relevant experiences from around the globe may be considered; (2) most countries are experiencing rapid development of surface and/or ground water supplies to meet increasing demands for agricultural production, M & I, environmental concerns, and misuse or over use of the water and related resources in the past; and (3) international water resources issues, important to some areas, are beyond the present topic.

### Background:

Since the advent of modern irrigation development in the early 1900's, governments of both developed and developing countries have placed a heavy emphasis on the introduction of technological improvements and construction of new systems. With this objective at the helm, there rapidly evolved a mentality within the irrigation sector agencies that awarded design and construction activities (and personnel), and relegated operation, maintenance, and regulation to rookies or less favored persons. Water and related resource and revenue laws and regulations adopted by national or state/provincial governments, were often drafted by members of the legal profession who had little experience with the resource (water), or sector (irrigation), and the interrelationships among resources (water, land, forested watershed), sectors (irrigation, domestic/municipal, commercial/industrial) and

water resource characteristics (surface, ground, and conjunctive use and quantity and quality interdependencies). Many water, land, and revenue laws were introduced from external sources. Only a few countries over the last 10 to 15 years have made any significant modifications to legislation adopted as early as the 1860's.

The institutional framework consists of four components: (1) policies, (2) laws and regulations, (3) organizations, and (4) the process of implementation. Policy means "intelligently directed action toward consciously determined goals as distinct from aimless drift and blind faith." Water and related policies are often found in national development plans, executive orders and preambles to legislation. Unfortunately, they are commonly formulated without the assistance of an adequate data base (decision support system = DSS or management information system = MIS) and usually reflect unrealistic political optimism. Many countries lack adequate comprehensive and specific water and agricultural policies.

Water laws and regulations should address the resource use by all sectors and interests according to the physical and chemical characteristics of the resource and geo-climatic conditions of the country. Water laws are often fragmented, incomplete, inconsistent, do not reflect the state of technological awareness and improvements in water utilization, in conflict with related laws and regulations (such as forest and watershed management, coastal and wetland protection, use of water by other sectors such as power, and M & I), and lack provisions for implementation. Jurisdiction may be placed in several agencies without proper coordinating mechanisms. A specific tendency of laws and regulations is to create externalities in the system. Further, laws and regulations can be as equally successful at constraining as they are at facilitating development. In an era when governments are trying to reduce their subsidized costs to irrigated agriculture through water pricing, cost sharing, farmer participation and turnover programs, the lack of adequate laws are quickly being recognized.

Organizations include government agencies and private sector entities. Critical to the implementation of any law is the government organization, ranging from simple registration, to assistance, to direct control and regulation. Most ANE countries follow either the pattern of an irrigation agency with authority and responsibility for water allocation, distribution and management down to the end user, or the allocation and distribution in one agency, and the on-farm water management with another. Problems include lack of clear authority and responsibility within and between agencies; lack of coordination; inadequate agency staffing and support; centralization of power and lack of awareness of policies, laws and programs by field personnel; and external influence or control. Many countries lack water user organization laws or provisions, and hence, experience difficulty with cost sharing and recovery; inducement of private sector involvement, and turnover of all or portions of government operated systems. Frequently, there are few alternatives for private sector or water user group involvement in irrigation systems; cooperatives are promoted for water management, but have a limited degree of success.

The process of implementation is at the heart of the institutional framework, for without a successful process, the other components will stagnate, fall into disregard, and the process of personalities and power-play dictate the direction and activities of the sector. Problems

include the lack of a systematic process, a complete process, and a process that can detect calculated success or failures. A "management by results" (MBR) approach is suggested because of the monitoring, evaluation and feedback of the objectives through the results.

### Issues:

The first issue of relevance to the USAID and ISPAN program is whether the institutional framework for irrigation development and management is adequate, effective and efficient. To address this issue will require the analysis of the particular country's: (1) goals, objectives and capabilities; (2) each component of the institutional framework; and (3) the past and present irrigation activities, problems and trends.

The second issue is what can be done, by whom, and how to improve the institutional framework components to insure that it is an effective tool to resource development, and ever vigilant to identify its constraints and make necessary modifications to keep on target.

Formulation of the proper legal/institutional framework to address the above issues, and provide a dynamic role in the process of development and management of irrigation systems will require the interdisciplinary (technical, social, economic, legal and agronomic), inter-agency (Departments of Irrigation, Agriculture, Forestry, Extension, Human Resources, etc.) and inter-governmental branches (executive, legislative, judicial and administrative) communication, cooperation, and coordination. Institutional integration is considered essential in the present period of rapid resource development to meet demands and desires. It will also require the involvement of the end users (farmers) in order to get their willing participation in the implementation process.

### Mechanisms:

There are several mechanisms that can be utilized in selected countries and/or the region. The first is the regional or international conference or workshop, focusing upon specific institutional topics of major importance. Several such meetings have been held in the last ten years, but significant issues remain, such as water pricing, cost-sharing and recovery, water users participation and turnover, conjunctive use of surface and ground waters and prevention of sea water intrusion and mining, watershed protection and management, etc.

The same mechanism can be used within a country to sharply focus on national, regional, basin and local institutional issues, problems and solutions. Structuring the conferences and workshops from regional to national and then back to regional will allow countries to first identify the conditions, issues and objectives, shift each countries interest back to its own situation in searching for solutions to meet demands, then regroup to share experiences.

Another mechanism is the special task force. A high level ad hoc committee, consisting of member who will pursue the subject matter thoroughly and openly, can be formed to study the subject and report back to government. This was recently done by the U.S. Bureau of

Reclamation in its Assessment '87 and Implementation Plan. It is being undertaken in Thailand in the national planning process, with the private sector involved, and in fact, chairing the irrigation sub-committee.

The applied study approach would be useful in several countries that are currently experiencing institutional difficulties or concern, or that have not undergone legal or institutional changes or amendments in the last two decades. For example, in 1974, the Phillipines completely revised their water laws into a modern water code. In Tamil Nadu, a comprehensive water resources act was drafted that took into account over 29 pieces of water related legislation. Several other countries have added to piecemeal legislation and regulations such as Pakistan's adoption of water user associations acts in all four provinces from 1978 to 1981, and Nepal's recent adoption of Irrigation Regulation 2045.

The study tour is a very valuable approach to taking a select group from one or more countries to observe and discuss how other legal and institutional systems operate, approaches tried, problems encountered, etc. Such a tour should include field visits to examine the implementation of institutional measures, as well as the opportunity to meet with key officials and their affect clientele. Video taping the tour is very useful for participant preparation of experience sharing with colleagues.

**Reference:**

Ali, M., Radosevich, G., & Khan, A. A., Editors, 1987, Water Resources Policy for Asia, A. A. Balkemal, Rotterdam, 627 p.

**INTERFACE BETWEEN PUBLIC AND PRIVATE SECTOR**

**TURNOVER, DIVESTITURE, PRIVATIZATION**

**PAPERS: INCREASED LOCAL RESPONSIBILITY FOR IRRIGATION  
OPERATION AND MAINTENANCE  
MIKE WALTER**

**THE ROLE OF PVOs/NGOs IN THE PROVISION OF IRRIGATION  
RELATED SERVICES  
REMCO VONK**

**PRIVATE SECTOR PROVISION OF PUBLIC SERVICES: A  
POSSIBLE AGENDA FOR FUTURE ACTIVITIES  
SAM JOHNSON III**

## ISPAN APPLIED STUDIES CONCEPT PAPER

Mike Walter  
October 3, 1989

### INCREASED LOCAL RESPONSIBILITY FOR IRRIGATION OPERATION AND MAINTENANCE

#### Problem Statement:

Increasingly in Asia and the Near East region, governments are finding it difficult to provide cost-effective operation and maintenance for government irrigation systems. The apparent insufficient funds generally made available for these recurrent costs are partially to blame. The fact that agency staff are in a comparatively poorer position than farmers to do operation and maintenance on small systems or in the tertiary portion of the larger systems add to this ineptness. In many cases, the best approach for achieving an effective mix of agency and local rights and responsibilities for irrigation scheme management is unknown. Therefore, alternatives are being considered and tried to transfer more responsibility for small systems and the tertiary portion of other systems to farmers. One process for organizational change to increase this local responsibility for operation and maintenance has come to be known as "system turnover." Appropriate approaches to system turnover that lead to cost-effective operation and maintenance need to be identified and tested.

#### Background:

Government irrigation systems have always had an element of farmer involvement. In recent years there has been a recognition of the need to formalize this local involvement by assisting in creation of farmer organizations. In general, experience suggests that farmer participation leads to greater local resource mobilization and improved system performance. In some cases, consideration is being given to a policy of total turnover of small government-built irrigation systems to local organizations for operation and maintenance. Studies of small indigenous systems indicate that farmers have the ability to effectively operate and maintain in a sustainable manner systems that they have planned, designed, and built. The requirements for appropriate transfer of operation and maintenance responsibility for government-built small systems still has to be determined.

Irrigation and other government departments will continue to play important roles in larger government-built systems, including management of the primary storage facilities, diversions and conveyance systems. However, approaches for increasing the responsibility of farmers for operation and maintenance of larger systems and the limitations of farmers to accept responsibility for these are largely unknown.

In both cases, (total turnover of small systems or partial turnover of larger systems), procedural and organizational changes must be identified that lead to effective system performance. These changes must be developed consistent with the relative strengths and available resources of government departments and farmer groups. They must also include consideration of the incentives of the two entities and people within them. Examples of effective coordination and cooperation between government agencies and local groups in

management of well performing irrigation systems are not common. Even after governments decide on a policy to turn over systems to farmers, acceptance of increased responsibility for operation and maintenance by farmers requires that the procedural changes and organizational realignment provide them with appropriate incentives.

### Specific Issues:

Many of the issues related to the turnover of rights and responsibilities of small systems are similar to large systems while other concerns are different. In general, responsibility for operation and maintenance is given entirely to farmers of small systems while it is only partially given in larger systems. Because studies of small indigenous systems indicate that farmers can manage such schemes, there may be a sense that farmers can and will accept responsibility for operation and maintenance on small agency-managed schemes. However, important differences between indigenous and government schemes may prohibit effective local management. These differences include approaches to design and technology, materials, construction procedures, the process of system development, perceived rights and responsibilities, and development objectives. Experience from Nepal and the Philippines indicates that when farmers are partners in the process from planning through construction, turnover of management to the local group can be successful. Less successful experience is available for the turnover of systems when planning, design and construction are done primarily without farmer involvement. Therefore, an issue is how to apply lessons learned from studies of small indigenous systems to turnover of small government-assisted systems to farmer groups.

Although farmers have always been involved in an ad hoc or unofficial manner in large government irrigation system management, only recently have governments sought to formalize and increase this involvement. This interest is most apparent in the efforts to increase farmer participation through local farmer organizations. Unfortunately, the roles and responsibilities of these local groups are often poorly defined and lack appropriate mechanisms for effective implementation. The interface between agency staff and farmers is often a point of conflict rather than cooperation. Studies of farmer involvement in large government systems often reveal local participatory efforts that are very inconsistent with the agency management. Ongoing USAID irrigation projects in India, Nepal, Indonesia and other countries in the ANE region must include appropriate organization alignment procedures to assure effective cooperation in management of farmer groups and agencies. The capacity of local organizations to effectively manage large government systems is largely unknown. Therefore, concerns of turn over of responsibility for large government systems may include many of those for small systems for which we have a research base. Additionally, there are questions of the capacity of local groups to manage even larger systems but unlike small systems we lack the insights that could be provided by studying large locally managed indigenous systems.

### Elements of Applied Studies:

1. Descriptive studies of small ingenious irrigation systems have been conducted in a number of the countries of the ANE region. In many cases these studies have provided consistent insights of conditions necessary for effective local management. USAID is funding a number of projects in the region that include the implicit assumption or explicit requirement that local farmer groups assume all or the primary responsibility for operation and maintenance of individual schemes after construction. Action studies, following a process documentation approach, are needed to test alternative approaches to system turnover to farmers with the goal of cost effective operation and maintenance of sustainable systems.

2. Irrigation systems that exhibit many of the features of large government systems but that are locally managed are not uncommon in the ANE region. At least from a socio-technical point of view, these complex systems have been unstudied. Studies of such systems should be made to provide important and relevant insights to turnover of large systems. They provide cogent models of organizational and technical alternatives that have been successfully used in the region providing possibilities for adaptation to government systems.



## THE ROLE OF PVOS/NGOS IN THE PROVISION OF IRRIGATION RELATED SERVICES

Remko Vonk

### Problem statement:

Micro scale irrigation has traditionally been the domain of individual farmers, and small cooperatives or other farmer organizations. In some cases, user fees are paid to individuals that control the pump or the inlet for access to irrigation water. This type of irrigation is dwarfed by the large scale irrigation that has historically been the domain of the public sector. In between these two types of irrigation, there is a large grey area within which private, non-governmental organizations are active, either in concert with governments or with micro scale irrigation users (or both). Efficient use of these irrigation systems requires training, management and availability of other agricultural inputs, e.g. fertilizers. These private non-governmental organizations are providing services in terms of training, maintenance, management, input provision and infrastructure. With the current growing interest in the role of PVOs and NGOs, and with the deterioration of Governments' capabilities to service irrigation systems, there is an increased interest in exploring the role of private non-governmental organizations in all aspects of irrigation management.

The purpose of the proposed study is to identify strengths and weaknesses of private non-governmental organizations in their current irrigation related activities and where the opportunities and limitations are for an increased role for INGOs/PVOs in irrigation management.

### Background Information:

CARE is the world's largest non-sectoral, non-political private voluntary organization (PVO) and is the largest PVO implementer of Agriculture and Natural Resources related projects. In Fiscal Year 1989, CARE's total budget in the ANR sector was \$32,000,000, with 86 projects in 31 countries. CARE has substantial experience in irrigation, with ongoing projects in Bangladesh, Peru, Ecuador, Togo, Chad, Nepal, and Mali. In addition to projects that deal directly with irrigation, CARE has a significant number of projects that deal with watershed protection (Guatemala, Honduras, Haiti). Through its total portfolio in all sectors of over 200 projects, CARE has build up extensive experience in community organization, and training for community management of development projects. In addition, CARE has built links with a wide spectrum of Indigenous Non-Governmental Organizations (INGOs), which include interest groups, cooperatives, local women's groups, wildlife clubs, primary schools, etc.

INGOs are increasingly the focus for the international donor community that is looking for new ways for sustainable and effective service delivery mechanisms. They have taken a lead role in the development of sustainable agriculture technology generation in the irrigation sector (e.g., the International Institute for Rural Reconstruction in the Philippines).

A good example of a joint PVO/INGO endeavor in irrigation is the CARE-Bangladesh LOTUS (Landless Owned Tubewell Users Support Project). Here, CARE works with BRAC (Bangladesh Rural Advancement Committee), the

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Grameen Bank, and Proshika. All three of these organizations have been involved in the organization of the landless into groups and provide them with credit so they can take ownership of some deep and shallow tubewells. CARE's role is the training of the landless in the operation of the tubewells and in supply of farm inputs to the farmers that obtain water from the wells.

The integrated nature of irrigation in many of the Asian farming systems and the complexity of these systems results in irrigation related activities being a components of almost all CARE ANR activities in Asia.

Given the current donor trends, the role of international PVOs, like CARE, and INGOs in the provision of irrigation services will get increasing attention in the coming decade. To assure a meaningful participation and a correct use of the strengths that INGOs and PVOs have to offer, a careful study of delivery mechanisms and current impact on both field level operations and policy would be useful.

#### Research Questions:

The research proposed is to do a SWOT (Strengths Weaknesses, Opportunities and Threats) analysis of the involvement of INGOs/PVOs in the provision of irrigation related services. The research will identify the roles of both PVOs and NGOs, as well as their interface with each other and their interface with the public and private sector. The assumption is that PVOs and INGOs can play a larger role in the provision of irrigation related services. Specific attention will be paid to:

- The role of INGOs/PVOs in sustainable agriculture technology generation and dissemination;
- The impact of INGOs/PVOs on agricultural policy at local and national level;
- The role of INGOs/PVOs in natural resource management as it relates to irrigation (like watershed protection);
- The role of INGOs/PVOs in community mobilization, training and extension.

#### Research Mechanisms:

The research will study three CARE projects and four INGO projects in Nepal, Bangladesh, and the Philippines.

#### The CARE projects are:

Bangladesh: LOTUS, (see before);  
Nepal: Begnas Tal Rupa Tal Watershed Management Project, Second Phase. Project participants develop skills and knowledge in land protection and rehabilitation, emphasizing sustainable conservation measures through training and

Philippines: extension. The target area is characterized by severe erosion, which threatens its irrigation systems. East South Area Economic Development Program. The project provides small loans through local partner organizations to farmers, share croppers, and micro-business people. CARE has the role of management advisor, trainer and facilitator in linking farmers and irrigation user groups to other sources of technical assistance, while at the same time strengthening INGOs. Crop production has the highest share (34%) of the loans, half of the crop production activities are related to irrigated rice. CARE's unique role on this project is significantly different from that on the other two projects; instead of being the implementer, CARE is the supplier of credit to the INGOs.

In consultation with the local USAID mission, the national irrigation organization, CARE and, if present, a national NGO coordinating body, one appropriate INGO project will be selected per country.

Whereas the general research questions have been formulated above, the exact role of each of the projects and the specific content areas of the end report will be developed in close consultation with the concerned project managers and the concerned organizations. The rationale for this is that if the project staff perceives this study as an outside "evaluation" effort, their willingness to participate and their willingness to provide an honest and frank assessments will be limited. This is especially important for the participation of the INGOs. The project staff must see a clear relevance of this study to their own operations.

In order to facilitate the above, the following research plan is proposed:

- 1) A study of all relevant literature, resulting in a list of specifically relevant readings for the concerned projects' staff.
- 2) A meeting of all the concerned project staff and the documentarian/researcher, to prepare a detailed outline of the study and a preliminary "table of contents" for the final report.
- 3) Visits by the Researcher/documentarian to all concerned projects, to carry out the SWOT analysis, and study information on the projects' relationships with other institutions.
- 4) Preparation of a first draft of the study.
- 5) A second meeting of all concerned project managers with the documentarian/researcher.
- 6) Preparation of the final document and circulation thereof to a wide audience in Asia and the Near East, including the NGO/PVO community USAID missions, policy makers, irrigation boards, private sector agencies involved with irrigation, etc.

The study is expected to take 9 months and will require one full time staff person. Depending on the outcome of the study and its relevance to country specific, or region specific situations, additional funding will be sought for workshops.

## PRIVATE SECTOR PROVISION OF PUBLIC SERVICES A POSSIBLE AGENDA FOR FUTURE ACTIVITIES

Sam H. Johnson III<sup>1</sup>

### Problem Statement

Private provision of services that have historically been provided by the public sector is a concept that has been gone from being a popular seminar topic to widespread acceptance. From Russia to China, across Asia, Africa and Latin America and throughout the more developed countries, governments are recognizing the potential savings in terms of tax dollars and increased efficiency by turning public sector activities over to the private sector. Provision of roads and highways, commodity markets, primary and secondary schools, universities, hospitals, air service, agricultural water supplies, fertilizers and other chemical inputs, export and trade development, agricultural research and extension, telecommunications, and banking and credit facilities are just a few of the services that are now being supplied directly by the private sector.

Ten years ago in Asia it would have been difficult to find more than a handful of countries allowing the private sector to provide such services, yet today even the more socialist governments are actively encouraging the private sector to take over responsibility for provision of a continuously expanding range of services. In particular, this holds true for agricultural inputs and marketing services and is also starting to occur with respect to the provision of agricultural water supplies. Programs such as Pakistan's SCARP transition program, private seed companies in Thailand and Indonesia, the turnover of small public irrigation systems to the users in Nepal, Indonesia, and the Philippines, commercial tubewells in India and Bangladesh and the rapid withdrawal of agricultural ministries from management of seed and grain purchasing depots are all activities reflecting a global movement toward privatization of activities in areas where the private sector has a relative economic advantage.

In cases where this transition has gone smoothly, it has had a tremendous impact on agricultural programs and, more specifically for ISPAN, has helped ensure the success of public sector investments in irrigation. This has been particularly true where success required farmers to develop a diversified dry season cropping program. However, for many countries the process of developing policies and procedures for private provision of services continues to be problematic. A major uncertainty that plagues these countries is determining what new roles, if any, should be played by public agencies as private organizations assume an increasingly large percentage of their historical activities. Hence, in many LDCs there continue to be remnants of public agencies that exist yet no longer have a clear cut mandate. A good example of this is the public extension service where private agribusiness firms have assumed a number of their functions. A similar situation exists where private groundwater supplies are readily available, yet public agencies continue to try to maintain a presence.

### Underlying Assumptions

In November 1986 IIMI held a *Workshop for Irrigation Management for Crop Diversification*. The need for such a workshop reflects the maturation of irrigation systems in Asia and the desire of most of the governments to increase cropping intensities and to move beyond simple cereal grain production in their intensive irrigation systems. Contrary to expectations, participants at the workshop did not

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concentrate on irrigation management problems, but instead repeatedly made the point that improved marketing, secure prices and better access to inputs were the key to successful irrigated diversified cropping. Policy recommendations focused on these issues with an extremely strong bias toward an increased role for the private sector.

The recent World Bank sponsored *Colloquium on How to Reach the Poor through Groundwater Irrigation* experienced a similar phenomena in that participants from Asia kept emphasizing the success of private groundwater systems and the failure of most public groundwater schemes. Again, policy recommendations focused on facilitating private groundwater development and moving away from a dependence on the public sector.

These two examples, although striking different in context, support my assumption that successful irrigated agricultural expansion and intensification in Asia is dependent upon the following two conditions: (1) the degree to which the private sector is allowed to take a leading role and (2) the ability of public agencies whose functions are completely or partially replaced by the private firms to adapt to the new set of conditions.

### Issues

In both cases, the two major issue that needs to be examined are primarily the same. *What mechanism will help countries formulate and establish policies related to the appropriate role of the private sector? and How countries should go about implementing these policies including redefining the role of concerned public agencies?*

Although easy to propose, actually allowing the private sector to take a leading role goes against the instincts of most governments. There is concern for ensuring some form of equity and there is also a concern that all the private firms are interested in are their profits. Appropriate government policies need to be formulated and approved if these concerns are to be addressed.

Even more important, it is necessary to look forward and understand the potential ramifications of privatization and start to anticipate the change in roles that will occur within the concerned government agencies. This involves not only developing new job descriptions and operating procedures, but it well may require reduction in type and number of staff. Instead of attempting to continue to provide advice and technical support in competition with private sector firms, many agencies will face a need to move toward a role that emphasizes monitoring and regulatory management. Clearly such drastically different roles will require different staffing both in terms of skills and numbers.

### Mechanisms

ISPAN can help facilitate this process by organizing applied studies and regional workshops that develop information and emphasize methods used by countries in the region to address these issues. Such activities might include the following:

- I. Applied Study of P and Contract Farming: Although private agribusiness firms are expanding rapidly in irrigated areas in SE Asia, very little information is available that actually defines and details the mechanisms used by the firms to extend information to farmers and negotiate contracts for growing and purchasing different crops. Even less information is available that examines the respective roles and relationships of the firms with the public extension service

and the irrigation agency. A regional comparative applied study in Thailand, Indonesia and Bangladesh is proposed. These countries represent completely different irrigation settings, and widely varying social and cultural conditions, yet in each of the countries a virtual revolution in agricultural relationships between the private and public sector is occurring.

The study would involve data collection in selected irrigated areas in the three countries. Information collected would include: (a) structure and practice of private outreach programs; (b) extent and type of contract farming; (c) prevalent marketing and procurement systems and changes as a result of entry of private agribusiness and contract arrangements; (d) response of public sector to increased private sector involvement; (e) impact on crop practices, yields and farmer income; (f) redefined present roles and future suggested roles of public extension and irrigation staff; and (g) agricultural policies supporting or hindering the changes.

This study would require 3-4 weeks of data collection and report writing for each of the countries and would involve a team of three, one expatriate and two local scientists. Final reports would be written for the respective countries and a synthesizing report would be prepared for Activity III.

II. Applied Study of Private Commercial Irrigation Wells: Much of the irrigation literature discusses water sales from private wells as a residual activity. However, in areas of India, Bangladesh and perhaps Pakistan (Baluchistan and Sind) it is now possible to find irrigation wells that have been established as a private commercial venture. The range of these installations is very wide; buried pipe with alfalfa valve risers, small well points where the owner of the pump transports the pump from well point to well point to wells owned by landless laborers. However, in all cases the idea is development of a commercial venture selling water to farmers.

Given the rate of privatization in other agricultural activities and the degree of disappointment with the low rate of returns associated with public groundwater programs, it seems that these private commercial ventures need to be studied in much more detail. An applied study in Gujarat in India and central region of Bangladesh is proposed in India the study would be organized through IIM Ahmadabad and in collaboration with BARC in Bangladesh. Data collection and report writing would take 3 months and one American expert would need to work with the teams in the two countries. Again, individual country reports would be prepared as well as a synthesizing report for Activity III.

### III. Workshop on Role of Private Sector in Irrigated Agriculture

After completion of the two studies, a regional workshop for irrigation and agricultural staff, government financial officers, private sector executives from agribusiness and livestock firms, and senior policy makers would be held. The overall purpose of this workshop would be to inform the broader policy audience and private sector representatives of the successful approaches to private sector involvement in irrigated agriculture. A second objective would be to facilitate initiation of a dialogue between the two groups. Hopefully, a widely publicized and well documented workshop will allow a number of countries to develop better policies sooner with a shorter learning curve, fewer false starts and less misunderstanding between the public and private sector.

**ANNEX G**

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# ISPAN

## PUBLICATIONS

### ISPAN STUDIES:

**Eastern Waters Study: Strategies to Manage Flood and Drought in the Ganges-Brahmaputra Basin.** By Peter Rogers, Peter Lydon and David Seckler. April, 1989. 83 pp.

This report was prepared for the U.S. Congress and discusses efforts by the international community and the governments of the region to develop regional programs for the Ganges and Brahmaputra basin that are designed to ensure an equitable and predictable supply of water in the dry season, and to promote better flood control mechanisms to mitigate in the mid-term, and prevent in the long-term, floods as severe as the 1988 floods in Bangladesh.

**Medium Scale Irrigation Systems in Northeast Thailand: Future Directions.** By Sam H. Johnson III, Sanguan Patamatamkul, Adul Apinantara, Terd Charoenwatana, Apisith Issariyanukula, Kanda Paranakian, and Peter Reiss. September, 1989. 198 pp.

The study focuses on a USAID/Royal Thai Government funded irrigation rehabilitation project involving seven medium-scale irrigation systems in Northeast Thailand. Through infrastructural improvements and management innovations, the project (NESSI) provided farmers with water for dry season cropping. Rapid changes in cropping patterns allowed farmers to seize opportunities offered by the private sector for sizeable increases in income. The study also documents impressive efforts by the Royal Irrigation Department and other government agencies to turn over more authority for operation and maintenance to farmers. As such, this report serves as a case study which highlights new directions of the ANE Bureau in private sector strengthening.



## **ISPAN REPORTS:**

### **Evaluation Reports**

**Pakistan Irrigation Systems Management Project Evaluation: Rehabilitation and Institutional Strengthening Components.** Jack Cave, W.A. Garvey, Ken Nobe, Ted Schuurmans, Larry Swarner, and Clay Wescott. June, 1988. Report # 2.

The Irrigation Systems Management (ISM) Project rehabilitated the irrigation system and established appropriate funding levels, funding mechanisms, and operations and maintenance procedures and practices to keep the system in its improved state. The project consisted of four discrete but interrelated components, including rehabilitation works, institutional strengthening, research and policy implementation, and command water management. The evaluation assessed progress made on the IMS, with emphasis on the rehabilitation and institutional improvement components. Overall project management was also evaluated. The report also included recommendations on future directions for the next phase of the project.

**Review of the Hill Areas Land and Water Development Project. (India).** Michael Walter and Ralph Edwards. October, 1988. 77 pp. Report # 3.

The Hill Areas Land and Water Development (HALWD) Project has two broad goals: improvement of land and water resources and introduction of new approaches to land and water development. Project components include afforestation, erosion control, horticulture, human and institutional development, research and technology adaptation, and community-based management of schemes. The report focused on the project's progress towards meeting its planned objectives; provided recommendations for improving, modifying and/or eliminating project components; suggested evaluation indicators needed to assess project accomplishments in the future; and recommended changes in implementing and/or monitoring the project by the Government of Himachal Pradesh and the AID mission.

**Mid-Term Evaluation of the Command Water Management Project. (Pakistan). Vol. One: Findings and Recommendations. 52 pp. Vol. Two: Appendices. 105 pp. Russell H. Betts, M.I. Chishti, Tariq Husain, Peter Reiss, and Gene White. May, 1988. Report # 5.**

The Command Water Management (CWM) Project's primary objective is to increase irrigated agriculture productivity in Pakistan by exploring ways to bring about physical and institutional improvements within irrigation command areas. This interim evaluation assessed CWM's progress, particularly in the area of institutional development. The report includes recommendations for improving project performance during the remainder of the project and provided information to the Government of Pakistan, USAID, World Bank and other donors about the value of similar CWM-type interventions in the irrigation sector.

**Evaluation of the Irrigation Management Training Component of the Water Resource Management and Training Project. (India) Lin J. Compton, Jack Keller and Michael Walter. October, 1988. 62 pp. Report # 6**

The Water Resource Management and Training (WRM&T) Project is increasing water resources system productivity by improving the professional and technological skills and capabilities of irrigation and water resources specialists. Related policy and technical research and studies are being carried out to strengthen water and land management throughout India. This evaluation provided guidance to the Government of India and USAID on the progress, direction and effectiveness of the training component of the project.

**Evaluation of the Structural Replacement and Project Preparation Unit Components of the Irrigation Management Systems Project. (Egypt) Tom Wickham, David Auslam, and Safa Jabboori. April, 1989. 80 pp. Report # 18**

The overall Irrigation Management Systems (IMS) Project in Egypt is attempting to improve the operating efficiency of the total irrigation system and strengthen the Ministry's operation, maintenance and planning capabilities. Two components, Structural Replacement (SR) and Project Preparation Department (PPD), were evaluated to determine PPD's progress toward becoming a self-reliant irrigation and drainage project planning unit; and SR's experience in rehabilitating irrigation structures. The report contains recommendations about future support for PPD and SR after contract expiration in July, 1989.

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**Nepal Irrigation Management Project Midterm Evaluation Report.**  
Mohamed Ait Kadi, K. William Easter, Zenete Franca, Jyoti P.  
Lohani, N.S. Peabody, III, Mahesh Man Shrestha, and Pamela  
Stanbury. July, 1989. 92 pp. Report # 16.

The Irrigation Management Project (IMP) was initiated to increase the institutional capability of the Department of Irrigation, other Government of Nepal agencies, and farmer groups to develop and sustain efficient irrigation management practices. Increasing institutional capability was viewed as a means to increase the total agricultural production in Nepal's irrigation systems. The evaluation reviewed the performance of the project and recommended directions for future implementation, taking into account the objectives of the emerging irrigation sector program and the role IMP will play in helping fulfill them.

**Mid-Term Evaluation of the Small Scale Irrigation Management Project. (Indonesia)** William R. Thomas; Sjoefjan Asnawi; E. Walter Coward, Jr; and Jack Keller. November, 1989.  
44 pp. Report # 23

The Small Scale Irrigation Management Project (SSIMP) is working with both surface and groundwater systems on three outer islands in Indonesia and emphasizes two institutional strengthening themes: decentralization of authority from the central headquarters to the provinces; and involvement of farmer beneficiaries from system design through operation and maintenance. The purpose of the project is to design and apply irrigation technologies and management systems in support of diversified cropping patterns in selected eastern islands. The evaluation report reviewed overall project management, plus the training and institutional development, surface irrigation systems, and groundwater development components and makes recommendations for changes in the design and monitoring of the project.

## **Workshop Reports**

**Facilitators Report: SSIMP Second Implementation Workshop. Werdhapura, Sanur, Bali (Indonesia). February 1-5, 1988. By John Pettit and Dennis Hamilton. June, 1988. 125 pp. Report # 1.**

The workshop discussed specific SSIMP project implementation issues including disbursement of project funds; site profile selection; project monitoring; role clarification; tendering process; project management; reimbursement; procurement; special studies; environmental studies; and water user association organizers. The report contains information on the workshop preparation, design, outcomes, participant evaluations and facilitators' conclusions and recommendations.

**Second Regional Irrigation Management Workshop: Kathmandu, Nepal, 24-29 April, 1988. Peter Reiss. January, 1989. 85 pp. Report # 7.**

Workshop objectives were to: enhance participant professional development by providing practical information on strategies to deal with institutional strengthening and cost recovery; develop and strengthen linkages among irrigation professionals in the Asia and Near East Region; and determine how ISPAN can best serve the needs of USAID personnel, host government counterparts and contractors working in the ANE irrigation sector. The report contains information on the planning, proceedings and outcomes, and assessment of the workshop.

**AID and World Bank Workshop on Training Needs and Strategies for Irrigated Agriculture. Washington, D.C. June 1-3, 1988. W.G. Garvey and John Pettit. October, 1988. 60 pp. Report # 8.**

Workshop objectives were to bring together key resource people in the field of irrigation to review and modify a guidance document on training needs and strategies for irrigated agriculture; provide case examples that illustrate how training strategies can make a significant contribution to the performance of irrigation organizations; and formulate appropriate follow-up actions to be taken after the workshop. The report includes sections on planning and implementation of the workshop plus outcomes, recommendations and future applications.

**Project Review Workshop for the Irrigation Systems Management Project. Colombo, Sri Lanka. April 6-10, 1989. John Pettit and Kathy Alison. October, 1989. 113 pp. Report # 15.**

This report deals with project implementation issues involving: farmer organizations; operations and maintenance; financial management; monitoring, evaluation and feedback; training capacity; research; and procurement. Policy issues and project management are also discussed.

**Start-up Workshop Reports for the Egypt Irrigation Management Systems (IMS) Project Components.**

This series of seven project start-up workshops and one project management workshop was designed to bring project team members (Ministry officials, technical assistance team members and USAID project staff) together to discuss specific implementation issues facing each project component. Workshop goals included: sharing of current project information; agreement and commitment to project goals and objectives; team building; agreement on management roles and responsibilities of the team members; discussion and development of strategies to improve project implementation; and review/revision of the draft work plan. Each workshop report contains specific agreements and recommendations made by the team, information on the specific component, and the workshop design.

IMS Start-up Workshop Reports include:

**Start-up Workshop for the Professional Development Component of the Egyptian Irrigation Management Systems Project. Ismailia, Egypt, January 22-25, 1989. Claudia Liebler and Kathy Alison. May, 1989. 103 pp. Report # 12.**

**Start-up Workshop for the Water Research Center of the Egyptian IMS Project. February 6-9, 1989, Alexandria, Egypt. Daniel Edwards and Kathy Alison. 1989. 62 pp. Report # 13.**

**Start-up Workshop for the Irrigation Improvement Project of the Egyptian IMS Project. Ismailia, Egypt. March 16-20, 1989. Dee Hahn-Rollins and Kathy Alison. May, 1989. 104 pp. Report # 17.**

**Planning Studies and Models Component of the IMS Project: Start-up Workshop Report. Alexandria, Egypt. June 26-28, 1989. Kathy Alison. October, 1989. 108 pp. Report # 19.**

**Preventive Maintenance/Channel Maintenance Component of the IMS Project: Start-up Workshop Report. Alexandria, Egypt. August 1-5, 1989. Tom Leonhardt and Susan Gant. November, 1989. 95 pp. Report # 20.**

**Main Systems Management Component of the IMS Project: Start-up Workshop Report. Alexandria, Egypt. November 15-19, 1989. In Draft. Lee Jennings and Al Rollins. Project Management Workshop for the IMS Coordinating Committee. Final Report. Alexandria, Egypt. September 3-8, 1989. Dee Hahn-Rollins and Kathy Alison. 118 pp. Report # 22.**

## **COOPERATIVE PUBLICATIONS**

**Irrigation Training in the Public Sector: Guidelines for Preparing Strategies and Programs. The Economic Development Institute of the World Bank and the United States Agency for International Development. 54 pp. ISBN: 0-8213-1334-7. EDI Catalog # 030/126. Spanish and French versions forthcoming.**

The guidelines in this document are designed to be used by senior irrigation managers in developing countries to design a systematic training approach for all levels of staff, including managers, which will improve the performance of irrigation systems.

ISPAN collaborated with the World Bank and AID on the development of this publication.

**Accelerated Agriculture Production Project Mid-Term Evaluation. Martin Hanratty, Jim Wolf, Milton Barnett, et al.**

The evaluation team reviewed AAP project performance and disbursement since inception and recommended means of improving linkages between the irrigation and production/marketing components of the project. ISPAN provided an irrigation organization specialist and an irrigation systems and training specialist for the evaluation team. Other team members represented AID/Washington and Philippine institutions. The report is being published in the Philippines.