

PD-ABI-565

PROJECT ASSISTANCE COMPLETION REPORT

WATER RESOURCES MANAGEMENT AND TRAINING PROJECT

(386-0484)

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I. INTRODUCTION

In the early 1980's, it was widely recognized that the development of India's irrigation sector offered tremendous benefits in terms of increased agricultural production. It had been shown that the agricultural productivity of irrigated land is more than double that of unirrigated land. Further, irrigated land on which good water management and crop husbandry practices are followed, can produce a yield five to seven times as great as the yield of unirrigated land. Recognizing this, the Government of India (GOI) was directing a relatively high percentage of its financial and human resources into irrigation programs and had requested foreign aid donors do the same. USAID/India (USAID/I) responded with an irrigation portfolio of state-specific projects. One of those projects, the Irrigation Management and Training Project, was authorized in June 1983. [The name of the project was changed to the Water Resources Management and Training Project (WRM&T) in July 1988 as explained in Section III, Project History.] The WRM&T project was envisioned as the keystone of the USAID irrigation program and was to be devoted entirely to the development of India's human and institutional resources in the irrigation sector.

II. PROJECT GOAL AND PURPOSE

The project's goal was to increase irrigated agricultural production through improved efficiency of irrigation systems and improved productivity of water delivered through irrigation systems to farmers' fields. The project's purpose was to strengthen the institutional capacity to plan, design, construct, operate, manage and maintain efficient and productive irrigation systems.

Intensive training was to be financed under the WRM&T project to familiarize relevant individuals with modern irrigation technology

and to reorient the irrigation and agriculture departments to consider farmers' needs. Action research in which multidisciplinary teams would work on particular problems over several seasons would be conducted on AID or World Bank-assisted irrigation schemes. The development of an improved national capability in Integrated River Basin Planning and Management was also to be undertaken. In addition, the project plan included the establishment of a technology transfer unit at the Central Government level to disseminate the results of research programs and other related information to state irrigation and agriculture departments, relevant educational institutions, and various interested organizations and individuals. Finally, curriculum improvement programs were to be developed in several agricultural and engineering universities to provide a continuing supply of irrigation management oriented graduates. The project envisioned strengthening various Water and Land Management Institutes (WALMIs) in a number of states.

Five principal elements were identified as integral to reaching the project's objectives.

--Training and Professional Development: This element would support improvement in the understanding and the development of skills and capabilities of a large number of irrigation executives, managers, professionals, technicians and farmers.

--Action Research Studies: A systematic analysis and improvement of the management of live irrigation systems would be developed through long-term, on-site case studies of an irrigated area.

--Systems for Technology Transfer: This element would support a set of communication channels, to be operated by the Irrigation Research and Management Improvement Cell (IRMIC) to be established by the Government of India, for disseminating information among irrigation management researchers and professionals.

--Organizational and Procedural Changes: Guidelines for changes in organizational structure and procedures needed to accommodate new technologies and operational concepts would be developed.

--Water Resources System Planning: Using computer analysis at a center established by the GOI, approximately 200 individuals would participate in classroom and field studies to analyze large scale groups of water projects within river basins. The center was to provide continuous specialized training in these areas.

By project completion, the WMR&T project had become a "flagship" program with high visibility and high impact. The project had a national stature and had been expanded in eleven major states containing 75 percent of the population and 85 percent of India's actual and potential surface and underground water supply. It played a major role in promoting and assisting India's future water policy, and the project was cited as having the potential to produce a legacy to U.S.- India relations similar to that achieved through a previous U.S. contribution to India's agricultural universities.

III. PROJECT HISTORY

The WRM&T project agreement was signed on July 30, 1983, with an AID authorized life of project funding level of \$51 million; \$41 million in grant funds and \$10 million in loan funds. Envisioned as a seven year project, the WRM&T project was to work with the GOI and initially focus on the five States (Rajasthan, Gujarat, Maharashtra, Madhya Pradesh and Tamil Nadu). The GOI's expected contribution was the rupee equivalent of \$28.2 million. The Project Assistance Completion Date (PACD) was extended to September 30, 1992 based on a restructuring of the project.

Implementation progress was slow during the first three years of the project, and in April 1987 a major project review was undertaken. The review found strong support for the project among irrigation management professionals and managers and that the project was strategically placed to make a significant contribution to improving the use of water resources in India. Although the project was conceptually sound and relevant to the states and central

organizations, the review team found that of the principal elements in the project, only three elements (i.e., Training and Professional Development, Action Research, and Systems in Technology Transfer) were progressing well. The other two elements, Organizational and Procedural Changes and Water Resources System Planning were experiencing problems. However, it was the review team's opinion that the project could make an important contribution to irrigation management and was enhancing the understanding of the elements necessary for improving irrigation management and agricultural productivity. The review supported the participation of additional state WALMIs and other irrigation management organizations based on the GOI's strong interest in ensuring that the project have a national impact.

The restructuring process resulting from the review attempted to integrate project activities, improve the horizontal linkages among state training and research organizations, create broader coordination of irrigation management activities in the states, and develop an analytical capability for training follow-up, research and other irrigation management activities. Significant new elements were added which included the expansion of assistance to the WALMIs from five to eleven states (which would cover 85 percent of India's actual and potential surface and underground water supply) and the engagement of national water authorities in key project activities. In addition, the restructured project established mechanisms to allow for the participation of several new groups in policy discussions and research activities. These groups included independent water research institutions, environmentally focused Private Voluntary Organizations (PVOs), private sector institutions and external institutions such as the U.S. Geological Survey (USGS) and the International Irrigation Management Institute (IIMI).

International collaboration efforts were focused on shared, interrelated and mutually supporting topics such as conjunctive water use, ground water modelling and geomorphic studies. Joint workplan

meetings of the various participants were instituted. During the project restructuring, care was taken to ensure that expansion of project activities did not result in a fatal diffusion of concentration. To that end, collaborative operations were instituted whereby the activities of the different participants were made mutually supportive rather than independent (i.e., shared focus of specific policies, studies, training, action research, and curriculum development.)

To reflect the substantial clarifications and revisions to the project activities and objectives, as well as the development of a water resources management element, the project was renamed (the WRM&T project) and extended to September 30, 1992 as the unforeseen but potential importance of the project's successes demanded more project attention. While the overall goal and purpose remained the same, specific objectives were altered. Revised management and administrative plans were instituted to streamline and eliminate redundant approvals and reviews, and provide for the development of Annual State Implementation Plans (ASIPS).

National level policy issues would be dealt with directly by the Ministry of Water Resources (MWR), and the irrigation management and training issues common to state project activities would be addressed by periodic meetings of a Technical Coordination Group (TCG). In addition, the project also financed activities of additional institutions, such as the Central Board of Irrigation and Power (CBIP); the Central Ground Water Board (CGWB) in collaboration with the U.S. Geological Survey (USGS); the International Irrigation Management Institute (IIMI); and Indo-U.S. technical and scientific exchange activities were also funded under the project.

Activities planned for the last two years focused on the institutionalization of project successes and included: establishing and strengthening WALMIs physical and human infrastructure; expanding action research to include popular participation in resource research

and planning; expansion of private sector participation in planning, design, training and implementation of water resource management activities; completion and development of an established national River Basin Training Center; other actions necessary to maintain, until firmly established, the momentum of policy change toward the devolution of central bureaucratic authority for water resources management to state and local level bodies (public and private); and the expansion of traditional irrigation management concerns to encompass a new perspective of sustainable conjunctive water use management.

IV. PROJECT STATUS AND ACCOMPLISHMENTS

At project initiation, disputes over water resource allocations were frequent. These disputes covered a broad range of concerns. They ranged from the establishment of alternative scenarios for development of the sub-continent's eastern waters; to local differences among individual states, communities, and interest; to confrontations over allocation of rights to individual farmers. These disputes were all on a path of ever increasing confrontation that threatened the democratic fabric of modern India. The modus operandi of the WRM&T project presented a rare, perhaps unique, example of the creation of a functioning democratic forum within which representatives of interested individuals/groups were learning the increased value and efficiency of working toward mutual collaboration and support rather than confrontation and conflict, with the result being increased resource availability and productivity for all.

The WRM&T project was not designed to produce a specific product or series of products; rather it was designed as a "process project," introducing water resources professionals to tools which they could use to improve the performance of water and land management. The project has made direct contributions to India's first national water policy which will focus attention on a number of key concerns including: cost recovery, assumption by user associations

of responsibilities and control of irrigation works, and a shift from single focused irrigation development to multi-purpose, environmentally and economically sound, water system development for industry, agriculture and human needs. The focus on multi-purpose development has been directly implemented through the establishment under the project of a national river basin planning initiative that seeks to replace the present confrontational system revolving around India's major inter-state river basin schemes into objective, collaborative exercises aimed at sustainable, economically viable, broad-based exploitation of water resources.

The project's development of WALMIs and the related water resource design organizations is providing the states with the capacity to assume responsibilities for policy analysis, program development and project management. The result has been a reduction of dependence on central dictates and an increased ability at the state level to participate in direct power sharing in India's water resources development.

Because of the impact of the project, the public sector, both at the national and state level, has now accepted and is promoting increased engagement of private sector capacities for a wide range of tasks such as professional training/instruction, system design and project implementation. Key examples of this devolution of responsibilities include the Center for Water Research Development and Management (CWRDM) in Calicut, Kerala, which not only has private sector representation on its board, but derives a percentage of its support and directs a percentage of its research toward specific private sector needs (e.g., the control of monsoon flooding in mining operations that would effectively add an additional four months of operable time per year).

In addition, both the independent institutes and the WALMIs, either directly or through several PVO intermediaries, interfaced with the small scale farming sector in "action research" that focused on the

creation, implementation and evaluation of new skills and policies and on-the-ground solving of existing water application and production problems. Among the project's many accomplishments in this area, is its collaborative work with the Mohini Cooperative Water User's Society, and its work through the Bhartiya Agro-Industries Federation, which by itself has extended project benefits to thousands of farmers in the states of Gujarat and Maharashtra.

The WRM&T project promoted a new era of external collaborations which included joint research development with the U.S. Geological Survey and the establishment of research programs with the International Irrigation Management Institute (Sri Lanka) that included a first time look at conjunctive use and the relative merits of public subsidized open channel systems versus the growing private sector ground water development. Lastly, the Ministry of Water Resources, Central Water Commission (CWC) and participating states have all confirmed the strong positive results of the project, and in fact, the 1990 parliamentary session of the GOI highlighted its national impact (after the session, several representatives requested that the project be expanded to their states).

A. PROGRESS UNDER VARIOUS PROJECT ELEMENTS

A final evaluation of the WRM&T project was conducted in May 1992 and found that at all levels - from state ministers and state secretaries of irrigation, to chief engineers and engineers-in-chief, to directors of state institutions and their faculty and students, down to the individual farmers - people were beginning to understand the need to develop plans to distribute water and systematically plan the use of river basins. Specific achievements under various project elements are discussed below.

1. Training and Professional Development

The enhanced strength of India's training capabilities through the Indo-U.S. collaborative effort was evident from the fact that the six month Training of Trainers Program (TOT) initially conducted by U.S. universities was completely transferred to India, and nine U.S.-based, water related training programs were also transferred (see Attachment B for list of courses). These shifts in the base of training programs from the U.S. to India will further expand the training clientele and increase the scope for and accelerate the momentum of more concrete technology oriented Indo-U.S. collaboration which should continue beyond the cessation of USAID project assistance. Training programs related to Integrated River Basin Planning and Design, and the development of Interactive Video Disc (IVD) technology were also institutionalized under the project. The quality of such training programs is evident from the fact that the Integrated River Basin Planning course received national recognition for awarding diplomas/certificates by Indian universities. Further, the application of the newly emerging U.S. IVD technology to irrigation management is a pioneering attempt in training technology in India as it aims to dramatically reduce the time for upgrading technical skills and has opened new vistas for future U.S. and non-U.S. public and private collaboration. According to its developer, it is being looked upon by the U.S. video industry as an important pilot program with direct implications for expanding the U.S. worldwide market penetration in this rapidly expanding field.

Under the training element over 1,000 professionals received training in the U.S. in specialized project areas and over 12,000 field level professionals and farmers were provided with in-country training. In addition, a National Water Resources training facility (Integrated River Basin Planning) was established at Pune, Maharashtra, and is fully operational.~ Perhaps most importantly, eleven State Training Institutes (i.e., WALMIs) were established and their infrastructures (faculty, buildings, laboratory and library facilities) were

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strengthened to a level of self-sustainability. Performance of the WALMIs in producing trained professionals at various levels is one indicator of the project's exceptional contributions in the field of water and land management. The successful WALMIs are serving as models for establishing WALMIs in the remaining states. Research capabilities of five selected WALMIs/universities were also improved through collaborative research programs with the International Irrigation Management Institute in Sri Lanka.

2. Action Research Studies (ARS)

The ARS programs are operational in 11 states and have elicited both farmers' and PVOs' participation, in the resolution of major constraints (regulations, distribution, farmers' involvement, etc.) to efficient water use and have enhanced the Irrigation Department's/Water User's understanding of the requisite cooperative water use strategies, such as an interdisciplinary approach and rotational water sharing. The ARS programs have thus helped to generate increased confidence among farmers and enabled them to adopt progressive and more optimal land and water management practices. Economic benefits have led to allied activities in the private sector, such as ventures in mushroom production and fish-culture.

The ARS programs are also increasingly proving that with adequate training of farmers and adoption of an interdisciplinary approach, improved irrigation management practices can be successfully introduced. These successes have already had a favorable impact on land productivity. Increases in, and sometimes doubling of, the crop yield have been observed, even in the traditionally neglected tail-end areas of water command areas. For example, target farmers in the Trichy tail-end water command areas in Tamil Nadu reported that their crop yield had doubled as a result of the project's improved water management technologies. A similar trend was also noted in Bihar. Due to the community participation generated under the ARS programs, water was also delivered productively to tail-end water command areas in the Mahi project of Gujarat (even

para-military personnel, despite many attempts, had previously failed to bring water to those areas). Finally, the results of the ARS should influence major policy changes such as privatization of water use and its distribution, private management of water resource systems and improvement in the efficiency of water use through the expanded involvement of farmer organizations. (A list of the Action Research programs can be found in Attachment C.)

3. Systems for Technology Transfer

Technology transfer activities developed skills such as : 1) dealing with problems in the irrigation system through long-term studies; 2) investigating, developing, and planning irrigation systems through integrated river basin planning; and 3) training of trainers and personnel at various levels. A micro-computer interactive video disc technology, introduced on a limited scale, provided simulated field experience and self-paced instruction. In addition, a newsletter was created and distributed to the WALMIs and other interested parties.

4. Organizational and Procedural Changes

Attempts to coordinate the various activities under different project elements played a key role in the project's implementation, as did establishing linkages between the various participating ministries, departments and institutes. The latter were achieved through various committees at the national and state levels, through the provision of faculty on deputation from the concerned departments and institutions, as well as through seminars, workshops, visiting faculty, all-India courses and newsletters. In all, 11 training institutions, five universities in several states, and several GOI departments and organizations took part in the process. Although a central documentation center for collection and dissemination of information was not established as envisioned by the project, all other instruments for coordination and linkage proved beneficial to the project and are expected to continue beyond project completion.

5. Water Resource System Planning

A Central Training Unit (CTU) of the Central Water Commission was established under the project to train practicing water resources scientists and engineers from state and central government organizations in integrated river basin planning using a systems engineering approach. According to the final evaluation, an excellent training program was designed and conducted by a strong team of consultants from the U.S. and India. They developed multidisciplinary courses with considerable practical material which are strongly oriented toward applications. Two three-month introductory courses and three nine-month advanced courses have been offered by the CTU. In addition, academic linkages have been firmly established between the CTU, Utah State University and the University of Poona. Finally, project activities contributed to the declaration and formulation of a "National Water Policy" and "Water Sector Development Action Plan" through a five-year development process.

B. ADDITIONAL ACCOMPLISHMENTS

Under the project several scientific and technological exchange programs and studies have been financed. For example, development of hydrological models using geomorphological parameters; application of spatial data technology to water resources development and management; dynamic regulation of canals; development of techniques for real time operation of reservoirs; snow hydrology projects in Jhelum and Yamuna basins; Paleo flood studies of Indian rivers; and sustainable water resources development and management programs. Considerable progress has been evidenced under this project element with potential for further Indo-U.S. collaboration beyond project cessation.

A landmark in the project has been the collaborative ground water program between the Central Ground Water Board (CGWB) and the U.S. Geological Survey (USGS). The program included a tailor-made

training program in the U.S for 41 Indian scientists. In addition, USGS personnel visited India and provided technical assistance to the Central Ground Water Board (CGWB).

C. SUSTAINABILITY

The program initiatives directly led to the development and promulgation of India's National Water Policy. Both the central and participating state governments have declared their intent as a policy to provide financial support on a long-term basis for continuation of the WALMIs and other activities initiated under the project. As such, the GOI has announced instituting attractive salary packages as incentives to professionals working at the State Training Institute's to maintain their long-term association with the programs. Finally, many of the ideas promoted under the WRM&T project, such as Integrated River Basin Planning, farmers' participation, improvement in irrigation administration, and maintenance of irrigation systems by beneficiaries have been included for funding in India's Eighth Five-Year Plan.

(Attachment D summarizes the output achievement of the project.)

V. LESSONS LEARNED

1. The WRM&T project has successfully demonstrated relevant technical packages of irrigation training. This system has had a significant impact on public and private sector investment. These training packages could have made a greater impact if participatory training methodologies had been adopted in addition to the traditional "lecture giving" training methods. Similarly, the construction of training institutes should have been designed to suit the needs of participatory training (rather than simply building lecture halls).

2. One of the significant successes of the WRM&T project has been the Action Research (AR) element. AR has demonstrated increased

productivity 5 times even a doubling of crop yields. However, AR was undertaken at only a few WALMIs and was expanded to other WALMIs late in the life of the project. This delay hampered the replication of pilot AR successes by WALMIs during the life of the project itself. To decrease this delay, baseline data studies capable of accelerating AR initiation and periodic assessments should have been built into project design.

3. The WRM&T project has achieved great success despite the project complexities and national scope. In part, this was due to the project restructuring which led to the simplification of project implementation and fund commitment procedures. Simplification is most necessary in those projects with activities involving numerous institutions located throughout the country.

4. The WRM&T supported numerous organization and procedural changes (OPC) which emanated from both the center and the states. Perhaps a project of this sort should be divided into two phases. The first phase would focus on the OPC and once completed, phase two would implement project activities.

VI. MISSION FOLLOW-ON ACTIONS

There will be no mission follow on actions beyond the PACD of September 30, 1992.

SPECIAL COVENANTS

1. Ensure continued coordination between center and states, between Central Ministries of Irrigation and Agriculture and between state departments and State Irrigation Management Training Institutes (STIs).

STATUS: Adequate coordination between the participating institutes and states has been ensured, particularly through the creation of the National Irrigation Management Institute.

2. Encourage collaboration between STIs and engineering and agricultural universities and management institutes.

STATUS: Wherever possible, collaboration has been attempted between STIs, Irrigation Departments and agricultural universities. This is evidenced by the joint research projects in the area of water resources.

3. Agreement to effect whenever feasible, adjustments to organizational structure, authorities and procedures to facilitate improved design and operation of irrigation systems and improved agricultural production.

STATUS: Some states have already effected organizational changes, for example, the inter-disciplinary action research unit in Tamil Nadu. Exchange of Department personnel has also been widely adopted by states.

4. Agreement that the GOI and state governments will continue the funding, etc., for the training institutes and action research studies after the completion of the project.

STATUS: Almost all project activities have been built into the State budgets as well as in the GOI's Eighth Five-Year plan.

5. Agreement that the state and central employees and officials trained under this project will, as far as possible, be retained in

or assigned to positions concerning irrigated agriculture in accordance with established bonding procedures.

STATUS: Most of the trained personnel have returned to their institutions or government office and are currently serving in work relevant to the project.

6. Agree to make available the personnel and budgets needed for implementation of this project to the state governments as and when required.

STATUS: The project activities have been reflected in either the central or state budgets.

Attachment B

LIST OF COURSES TRANSFERRED TO INDIA
FROM THE U.S. UNDER THE WRM&T PROJECT

Title	Being offered at
1. Irrigation Management for Paddy Production	WALMI - Orissa
2. Management of Crop-Water System for Improved Productivity	WALMI - Karnataka
3. Drip and Sprinkler Irrigation System Design and Layout	CWRD&M - Kerala
4. Water Logging, Drainage and Salinity Control in Irrigated Agriculture	CTAE - Rajasthan
5. Diagnostic Studies for Rehabilitation of Irrigation System	IMTI - Tamil Nadu
6. Micro Computer Application on System Analysis in Water Management	Anna University, Tamil Nadu
7. Farmer's Participation and Irrigation Organizations	WALMI - Gujarat
8. Surface Irrigation Methods	Mahatma Phule Agriculture Univ., Maharashtra
9. Operation of Main System of Irrigation Projects	WALMI - Andhra Pradesh

WALMI: Water and Land Management Institute
 CWRD&M: Centre for Water Resources Development and Management
 CTAE: College of Technology and Agricultural Engineering
 IMTI: Irrigation Management and Training Institute

Attachment C

ACTION RESEARCH SPONSORED UNDER WRM&T PROJECT

State	Action Research site
1. Andhra Pradesh	(i) Sri Rama Sagar-Kakatiya canal (ii) Shamerpet Project
2. Bihar	(i) Sone Canal System-Paliganj Dy. (ii) Gandak Project-Jamunia Branch
3. Gujarat	Mahi Right Bank Canal-Borsad Branch
4. Karnataka	Malaprabha Project-R and L Bank Canals
5. Kerala	(i) Kuttiadi Project (ii) Gayatri Project
6. Madhya Pradesh	(i) Halali Project (ii) Gorapachar Project
7. Maharashtra	(i) Pus Medium Irrigation Project (ii) Nazare Project
8. Orissa	(i) Mahanadi Delta Irrigation Project (ii) Kuanria Medium Irrigation Project
9. Rajasthan	Gudha Medium Irrigation Project
10. Tamil Nadu	Cauvery Delta Irrigation System
11. Uttar Pradesh	(i) Agra Canal System-Jait Minor (ii) Sarda Canal System

PLANNED VERSUS ACTUAL OUTPUT

<u>PLANNED OUTPUTS</u>	<u>INDICATORS</u>	<u>ACTUAL</u>
Upgraded professional skills in all phases of irrigation systems management	<ul style="list-style-type: none"> - Approximately 1700 senior professionals participate in project seminars. - Approximately 4000 mid-level professionals participate in project training courses. - Approximately 2000 junior professionals participate in project training courses. - Approximately 450 land development personnel participate in project training courses. - Approximately 500 irrigation management personnel participate in project training courses. 	<ul style="list-style-type: none"> - 2300 senior professionals participated in seminars/workshops - Over 3000 mid-level professionals trained in-country - Over 1000 senior/mid/junior level professionals trained overseas in specialized areas. - Response has been overwhelming. More than 1000 land development professionals and about 2000 irrigation management professionals attended the training courses.
Shift in management focus from "administering" water to meeting farmer needs.	Approximately 17,000 farmers and between 500 and 1000 irrigation professionals interact at special workshops, field days, demonstrations, and short training sessions conducted over the life of the project.	Over 12,000 farmers and 750 irrigation professionals trained through conduct of workshops/short trainings and observation visits.
Adoption of a systems approach which considers the interactive effects of engineering, agronomic, and social components.	Courses on the interdisciplinary nature of irrigation management developed and introduced in selected engineering and agricultural universities. At least four long term, on-site case studies of irrigated areas completed by interdisciplinary teams of irrigation, agriculture and other professionals.	Complete range of interdisciplinary courses developed and introduced at Bachelor's level (Engg) at M.S. University – Baroda (Gujarat) and at Master's level (Agriculture) at Mahatma Phule Agricultural University (MPAU) – Maharashtra. Three case studies completed.

Technology transfer capabilities enhanced

Irrigation Research and Management Improvement Cell established in the Central Water Commission of the Ministry of Irrigation.

Irrigation Research and Management Improvement Cell established in the Central Water Commission

National capability in water resources planning and management at the basin level improved.

Central training facility linked to leading Indian and U.S. universities set up, providing a continuous source of personnel trained in water resources planning and management.

Central training facility established at Pune (Maharashtra) to provide both short term (3 months) and long term advanced courses (9 months) in Integrated River Basin Planning on a continuous basis.

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**SUMMARY PROJECT FINANCIAL STATEMENT BY PROJECT ELEMENT
WATER RESOURCES MANAGEMENT AND TRAINING (386-0484)
(AS OF 09/30/92)**

(IN U.S.\$)

PROJECT ELEMENT	USAID CONTRIBUTION		
	Obligation	Commitment	Accrued Expenditure
GRANT:			
Training and Professional Development	15,718,108	15,718,108	14,833,504
Action Research Studies	4,826,166	4,826,166	4,523,025
Systems for Technology Transfer	4,254,575	4,254,575	3,658,539
Organizational & Procedural Changes	1,102,317	1,102,317	1,029,662
Water Resources System Planning	6,825,400	6,825,400	6,824,740
Project Evaluation	169,959	78,189	64,964
Educational Institutions	2,066,244	2,066,244	1,809,974
Monitoring	70,386	70,386	62,784
IIMI	500,000	500,000	499,999
CGWB - USGS	842,909	842,909	459,639
CB Training	3,888,930	3,888,930	3,888,929
CBIP	11,454	11,454	11,453
CWC & MWR SCI & Tech./Exch.Program	625,000	625,000	624,995
LOAN			
Training and Professional Development	9,070,000	9,070,000	9,070,000
Action Research Studies	630,000	630,000	630,000
Educational Institutions	300,000	300,000	300,000
TOTAL	50,901,448	50,809,678	48,292,207

Note: The Host Country Contribution to the project is \$59.2 million