

WATER MANAGEMENT SYNTHESIS II  
CID/AID-DAN-4127-C-00-2086-00

QUARTERLY REPORT  
APRIL 1, 1983 - JUNE 30, 1983

Submitted to:  
AID Project Manager  
Documentation Coordinator, S&T

*BEST AVAILABLE COPY*

## TABLE OF CONTENTS

Water Management Synthesis II Project  
Quarterly Report Covering Period April 1, 1983 - June 30, 1983

	Page
I. INTRODUCTION.....	1
II. STATUS OF PROGRAMMED ACTIVITIES.....	2
III. ACTIVITIES.....	6
A. Technical Assistance Activities.....	6
B. Training and Technology Transfer.....	13
C. Special Studies.....	21
D. Administrative Staff.....	27
E. Overall Administration.....	28
F. Summary.....	29
IV. ROSTER UPDATE.....	32
V. FINANCIAL REPORT SUMMARY.....	37

## WATER MANAGEMENT SYNTHESIS II PROJECT

QUARTERLY REPORT COVERING PERIOD APRIL 1, 1983 - JUNE 30, 1983

### I. INTRODUCTION

This report is a summary of the activities of the Water Management Synthesis II Project for the third quarter, covering the period April 1st to June 30th of 1983. The central purpose of the project is to develop and disseminate more efficient water management technologies and practices in AID-assisted countries to increase agricultural production and rural equity. New knowledge in water management is generated in the project under two types of activities: (1) special studies and (2) experimental training activities. State-of-the-Art socio-technical practices are transferred to developing countries, again through training activities as well as Mission supported technical assistance.

The WMSII program is a joint project of S&T/AGR, S&T/MD, and the Asia Bureau of AID. Each of these offices contribute funds and jointly manages the development, approval, and execution of activities under the project. Colorado State University, Cornell University and Utah State University, through the Consortium for International Development, are sharing the contractor leadership responsibilities for the Water Management Synthesis II Project. Therefore, in this quarterly report, various activities may be identified with the work of a specific university. This technique has been utilized for purposes of clarification since not all of the individual activities are jointly performed. Operationally, each individual activity is designated to one particular university based on the program thrust and/or strength of that university. The responsibility for that activity is then assumed by that university relative to planning, financial arrangements, etc. The other two universities may participate in the activity in various ways, such as contributing to the planning process and providing team members. In addition, since one of the aims of the project is to enlarge the pool of available expertise, efforts are made to involve other universities, non-university groups and individuals who may not be formally associated with any organization or university.

The implementation of the project has faced several delays, some as a result of the slow start-up of the project and others from changes in the anticipated timing of technical assistance to AID missions. As a result, some training and special studies sub-activities were delayed until final budget approval was obtained, which was April, 1983.

- 1 -

## II. STATUS OF PROGRAMMED ACTIVITIES

The activities of the WMSII originates from three sources: (1) Mission initiated technical assistance and training; (2) University initiated special studies and training programs, and (3) AID/Washington initiated activities. The following listed activities were requests received by the WMSII project management from the beginning of the project up to and including June 30, 1983. Activities are categorized according to lead university as well as country.

The terms listed below are used to indicate activity status:

- Completed - as of June 30, 1983 this activity has been finished.
- Approved - this activity is to be done but as of June 30, 1983 no work has been initiated. The scope of work has been completed.
- Initiated - work has begun on this particular activity but has not yet been completed.
- Cancelled - the activity has been officially removed or deleted from the work plan.
- Preliminary - denotes that there was some information included with the activity request but scope of work and/or dates are usually insufficient or missing, so activity cannot be initiated.
- Postponed - this activity may be included in preliminary or approved status but no work has been initiated nor has there been any formal decision to cancel within FY 83.

The source of each activity is indicated by the following designations:

- UNIV - University initiated
- USAID - Mission initiated
- AID/WASH - AID Washington initiated

Colorado State University Activities FY 83 (6-30-83)

<u>COUNTRY</u>	<u>ACTIVITY</u>	<u>STATUS</u>	<u>SOURCE</u>
Bangladesh	Consultant, Legal	Completed	USAID
	Curricula Dev. (BAU)	Approved	USAID
	Technical Journalist	Cancelled	USAID
	Scope of Work	Completed	USAID
	DA Workshop	Completed	USAID
Burma	Implementation of I&D Plans	Postponed	USAID
	Training Plans & Followup	Postponed	USAID
	Training & Review	Postponed	USAID
Egypt	Programs for MOI Personnel	Postponed	USAID
	Structure Replacement	Postponed	USAID
	Establish baseline data	Postponed	USAID
Global	Brochures; Newsletter; Pub.	Initiated	UNIV
	Survey & Strat. for Training	Initiated	UNIV
	Increasing WM Capability	Initiated	UNIV
	Videotape Modules	Initiated	UNIV
	Computer Applications	Initiated	UNIV
	Workshop (Tech. & Soc. Aspects)	Initiated	UNIV
	Communication for Tech. Tran.	Initiated	UNIV
	Irrigation Systems Mgmt.	Initiated	UNIV
India	Water Mgmt. and Training	Completed	USAID
	Development of Solutions	Initiated	USAID
	Watercourse Handbooks	Cancelled	USAID
	Meas. for Sys. Mgmt.	Completed	USAID
	DA Workshop	Postponed	USAID
	Workshop (Senior Officials)	Approved	USAID
	Publications	Cancelled	USAID
	Dev. & Test Small Structures	Approved	USAID
Clyma's TDY	Completed	USAID	
Indonesia	Oad's TDY	Completed	USAID
Pakistan	Command Water Mgmt.	Cancelled	USAID
	Project Implementation	Cancelled	USAID
	WM (CWM) Meeting	Completed	USAID
	Clyma's TDY	Completed	USAID
	OFWM	Cancelled	USAID
	Field Advisor Team	Cancelled	USAID
Sri Lanka	DA Workshop	Initiated	USAID
	DA Workshop WID	Initiated	USAID
	WMS Training	Cancelled	USAID
	Structures Symposium	Cancelled	USAID
Thailand	Skogerboe TDY	Cancelled	USAID

Cornell University Activities FY 83 (6-30-83)

<u>COUNTRY</u>	<u>ACTIVITY</u>	<u>STATUS</u>	<u>SOURCE</u>
Bangladesh	Water Mgmt. Systems	Initiated	USAID
	Identify Research Needs	Approved	USAID
	Strengthen BARC	Approved	USAID
Global	SSI Systems Study	Initiated	UNIV
	Comp. Analysis of Farmer Part.	Initiated	UNIV
	Startup Workshop	Completed	UNIV
India	Hill Area Land & Water Dev.	Initiated	USAID
	Institutional Analysis	Approved	USAID
Nepal	SSI Workshop	Approved	USAID
Philippines	Video Tape Production	Approved	USAID
Sri Lanka	Assist ARTI	Initiated	USAID
	Water Balance Study	Approved	USAID
	Video Tape Production	Approved	USAID

Utah State University Activities FY 83 (6-30-83)

<u>COUNTRY</u>	<u>ACTIVITY</u>	<u>STATUS</u>	<u>SOURCE</u>
Africa	Social Parameters for Africa	Initiated	UNIV
Dominican Republic	Project PID	Completed	USAID
	Project Paper (OFWM)	Initiated	USAID
Ecuador	Ecuavir Video Modules	Initiated	USAID
Global	Senior Officials Workshop	Postponed	USAID
	Start-up Workshop	Completed	UNIV
	Short Term Non-Degree Training	Initiated	UNIV
	Main System Management	Initiated	UNIV
	Action Research/Main System	Initiated	UNIV
	Interdisc On-Farm Sys. Selection	Initiated	UNIV
	Monitor Proj. for Tech. Quality	Postponed	UNIV
	Agro-Energy Roundtable	Completed	UNIV

(Utah State University Activities FY 83 - Continued)

<u>COUNTRY</u>	<u>ACTIVITY</u>	<u>STATUS</u>	<u>SOURCE</u>
Honduras	Update of ASA Small Farm WM Project	Preliminary Preliminary	USAID USAID
India	Project Coordinator Water Mgmt. and Training Maharashtra Minor Irr. Proj.	Postponed Completed Cancelled	USAID USAID USAID
Jordan	Sector Study Review of Curriculum JVA Personnel	Preliminary Completed Preliminary	USAID USAID USAID
Mali	OFWM Specialist	Completed	USAID
Pakistan	WM (CWM) Meeting	Completed	USAID
Peru	Special Study	Completed	USAID

CID Subcontracted Activities FY 83 (6-30-83)

<u>COUNTRY</u>	<u>ACTIVITY</u>	<u>STATUS</u>	<u>SOURCE</u>
India	WM and Training	Completed	USAID
Thailand	Equipment Engineer	Completed	USAID

Activities Not Yet Assigned FY 83 (6-30-83)

<u>COUNTRY</u>	<u>ACTIVITY</u>	<u>STATUS</u>	<u>SOURCE</u>
Bangladesh	Senior Official Workshop Sys. Approach to WM Ext. Water User Assoc. WC Rehab.-Structures WM and Tech. Skills WM Research Team	Postponed Postponed Postponed Postponed Postponed Postponed	USAID USAID USAID USAID USAID USAID
Chad	Rehab. of Irrig. Projects	Cancelled	USAID
India	Irrig. Sector Insti. Analysis	Preliminary	USAID
Thailand	Comparative Study Management Assessment	Preliminary Preliminary	USAID USAID

### III. ACTIVITIES

This section is a summary of the status of each activity under the WMSII Project. The review includes a synopsis of the purpose and status of each activity, the participants, and the time spent by each individual.

In order to clarify the project activities, the following section is divided into the following categories: (A) technical assistance; (B) training and technology; (C) special studies; and (D) administration.

#### A. Technical Assistance Activities

##### 1. BANGLADESH - BAU Collaboration Team

Status: Ongoing      Lead University: Colorado State University

Scope of Work: Investigate current water management resources at BAU and made recommendations to strengthen various aspects of the program.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
John Baxter	0.50 ppm	CSU	Agronomist
Dave Redgrave	0.20 ppm	CSU	Agronomist

2. BANGLADESH - Assist with Water Management Systems  
Project Paper

Status: Ongoing      Lead University: Cornell University

Scope of Work: Provide assistance to the Mission in preparation of project documentation for Water Management Project and to address related issues. For the period May 27 - December 31, 1983, Hammond Murray-Rust was appointed to provide assistance to the mission in the preparation of project documentation for the Water Management Systems project and to address related issues. Joseph Campbell and Leslie Small were also appointed as consultants for three week periods to provide assistance to the mission in the preparation of project documentation for the Water Management Systems Project and to address related issues. Susan Turnquist, a graduate student at Cornell, also visited Bangladesh to collect documentary materials, to interview irrigation officials about local organization for pump irrigation systems, and to gain experience in interdisciplinary irrigation research methods. She will also be available to assist the institutional analyst (Harry Blair) and the Cornell coordinator (Hammond Murray-Rust) on an as needed basis.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Gilbert Levine	0.10 ppm	Cornell	Engineering
Joseph Campbell	0.20 ppm	Cornell	Pump Specialist
Leslie Small	0.30 ppm	Rutgers	Agricultural Economic
Hammond Murray-Rust	1.00 ppm	Cornell	Engineering
Susan Turnquist	0.10 gpm	Cornell Grad Student	Rural Sociology

### 3. DOMINICAN REPUBLIC

Status: April/May, 1983 work      Lead University: Utah State Univ.

Scope of Work: Final revisions were made to the technical, institutional, and social analyses for a project on water management. Likewise, the sections were drafted to conform to final project paper format requirements.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Bruce Anderson	0.40 ppm	Independent	Irrigation Engineer

### 4. INDIA - Development of Solutions

Status: Ongoing      Lead University: Colorado State University

Scope of Work: Provide assistance to India to work on developing solutions to problems identified in a DA workshop in Rajasthan and further diagnostic analysis will follow.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Guilford Carlson	3.00 ppm	Independent Grand Junct, CO	Agricultural Engineer
William Laitos	0.70 ppm	CSU	Sociology
August Robinson	1.50 ppm	Independent Oxford, MS	Agricultural Engineer

5. INDIA - Assist with Hill Irrigation Project Preparation

Status: Ongoing                      Lead University: Cornell University

Scope of Work: Provide assistance to the Mission in preparation for project plan and documentation for assistance to small-scale irrigation development in the state of Himachal Pradesh. E. Walter Coward, Jr. spent the month of June in India to provide assistance to the mission in the preparation of project plan and documentation for assistance to small-scale irrigation development in the state of Himachal Pradesh. Edward Vander Velde, a consultant, also spent a month in Himachal Pradesh assisting E. Walter Coward, Jr.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
E. Walter Coward, Jr.	1.00 ppm	Cornell	Rural Sociology
Edward Vander Velde	1.00 ppm	Aquinas Coll.	Geography

6. INDONESIA

Status: Ongoing                      Lead University: Colorado State University

Scope of Work: Provide help to USAID and appropriate GOI agencies working on HPSIS to develop approaches for measuring hydrologic aspects of small-scale irrigation system performance.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Ramchand Oad	1.50 ppm	CSU	Agricultural Engineer

7. JORDAN

Status: June 1983 work    Lead University: Utah State University

Scope of Work: Assistance was provided to review the curriculum of the University of Jordan relative to the topics of water, irrigation and agronomy. An evaluation was carried out of the University's field training program.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Jack Keller	0.46 ppm	USU	Irrigation Engineer

8. PAKISTAN

Status: Completed March 27, 1983    Lead University: Colorado State

Scope of Work: Participation in March 27 meeting which focused on the conceptual basis for Command Water Management Project. Information on relevant experiences from elsewhere on project management problems which included elements of farmer participation and local government unit was presented.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
James Mayfield	0.10 ppm	U of Utah	Political Science

## 9. PAKISTAN

Status: June 1983                      Lead University: Utah State University

Scope of Work: Assistance was given to federal, provincial, and local officials of the Government of Pakistan to prepare the implementation plan for an on-farm water management project. The project was a buy-in pilot project on a district level effort.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
James Mayfield	1.00 ppm	U of Utah	Public Administration

## 10. PERU

Status: April/June, 1983 work      Lead University: Utah State Univ.

Scope of Work: Continued work on an irrigation sector survey to identify major issues in the irrigation sector, evaluate alternative sector investment and operational strategies, and review the effectiveness of alternative policy instruments. During the reporting period the team completed its field work of this activity, provided the Peru Mission with a review draft, and completed most of its work on a second draft of its report to the Mission.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION TIME
Jack Keller	0.55 ppm	USU	Irrigation Engineer
Michael Walter	0.45 ppm	Cornell Univ.	Irrigation Engineer
James Wolf	0.50 ppm	Frederikson, Kamine	Agricultural Engineer
Allen LeBaron	0.80 ppm	USU	Resource Economist
Percy Aitken	0.50 ppm	Organization of Am. States	Sociologist
Bryant Smith	1.80 ppm	USU	Institutional Spec.
Ray Meyer	0.50 ppm	AID	Agronomist

11. SRI LANKA - Assist Irrigation and Water Management Group,  
ARTI

Status: Ongoing

Lead University: Cornell University

Scope of Work: Continued assistance to ARTI in the development of a strategy for farmer participation and formation of water user groups in the Gal Oya project and in strengthening the capacity of the Irrigation Group within ARTI. On June 1-20 Norman Uphoff visited Sri Lanka to review activities of ARTI and WMS research, suggested improvements and examined options for the expansion of activities. He reviewed the Farmer Organization Program and provided advice on the evaluation of farmer organization and supervision of Institutional Organizers and provided advice on the problems caused by the planned expansion of the program. Further, he provided advice on the analysis and evaluation of data collected for the Mid-Term Impact Assessment, and he helped develop plans for the Water Management Research Center at ARTI.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Norman Uphoff	1.00 ppm	Cornell	Political Science

12. SRI LANKA

Status: June 1983 work

Lead University: Utah State University

Scope of Work: USU provided a sociologist who began participating in a diagnostic analysis workshop in Sri Lanka during the reporting period. He began preparations for both course work and field training of Sri Lankan irrigation officials. CSU provided the lead role in the DA workshop.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Bradley Parlin	0.45 ppm	USU	Sociologist

B. Training and Technology Transfer

1. AGRI-ENERGY ROUNDTABLE

Status: May, 1983                      Lead University: Utah State University

Scope of Work: As part of the project's technology transfer, lead universities' faculty members participate in conferences in order to make contact with professionals in other parts of the world regarding their activities and to keep such persons informed of the WMS II project. As part of this on-going activity, Jack Keller chaired the session on technology transfer of the Agri-Energy Roundtable in Geneva.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Jack Keller	0.13 ppm	USU	Irrigation Engineer

2. DOMESTIC - WMS II Summer Internship in Washington

Status: Ongoing                      Lead University: Cornell University

Scope of Work: To provide assistance to AID/W project staff and to expand the pool of U.S. water management expertise through the training of young professionals. Ruth Yabe, City and Regional Planning graduate student, assisted in the planning of WMS II activities for FY-84, reviewed technical assistance requests, and contributed to planning evaluation and assessment activities. In addition, she reviewed technical literature pertaining to the project and annotating it for S&T staff.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Ruth Yabes	1.25 months	Cornell Grad Student	Regional Planning

### 3. BANGLADESH - Diagnostic Analysis Workshop

Status: Ongoing      Lead University: Colorado State University

Scope of Work: The first diagnostic analysis workshop scheduled was requested by the USAID Mission in Bangladesh. The approach to diagnostic analysis combines the training of local staff through a field study of actual constraints that are limiting the effectiveness of irrigation systems. Field study will include an interdisciplinary investigation of the critical factors in water management.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
John Baxter	0.30 ppm	USU	Agronomy
Mohammed Haider	2.00 ppm	CSU	Economics
William Laitos	2.30 ppm	CSU	Sociology
Larry Nelson	1.50 ppm	CSU	Agronomy
Ramchand Oad	0.70 ppm	CSU	Agricultural Engineer
Terrence Podmore	0.40 ppm	CSU	Agricultural Engineer

#### 4. ECUAVIR

Status: January/March, 1983      Lead University: Utah State Univ.

Scope of Work: The Ecuavir project is a continuous two year activity, partially funded by USAID/Quito. Its purpose is to develop 45 animated video tape modules using combinations of field scenes and computer graphics for training in interdisciplinary on-farm water management. Each video will be an average of 12-15 minutes long and will provide key training information for irrigation courses for engineers, agronomists, and farmers. During the reporting period, the revision of the script of each of the 45 modules was continued to adapt them to specific requirements. The conversion of the content script to the vocal script was also continued. The revisions of the storyboarding was an on-going activity during the reporting period, as well as the translation of the scripts into Spanish.

#### Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION TIME
Lyman Willardson	0.47 ppm	USU	Irrigation Engineer
David Daines	2.45 ppm	USU	Lawyer, Director of Ecuavir
Gary Merkley	3.00 ppm	USU	Irrigation Engineer
Tom Cronkite	3.00 gpm	USU Grad Student	Instructional Media
Jose Forero	2.51 gpm	USU Grad Student	Spanish Translator
Lillian Francuz	1.50 spm	USU	Secretary
Ken Boutwell	1.00 ppm	USU	Instructional Media Specialist
Karl Smart	0.27 gpm	USU Grad Student	Instructional Media Specialist

5. NEPAL - Workshop on Small-Scale Irrigation

Status: In Preparation                      Lead University: Cornell University

Scope of Work: A workshop to be held in Nepal in August reviewing Nepalese experiences with small-scale irrigation development and examining prospects for future small-scale development in Nepal based on Nepalese and other experiences. Both Randolph Barker and Gilbert Levine were active in preparatory activities.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Randolph Barker	0.30 ppm	Cornell	Agricultural Econs.
Gilbert Levine	0.10 ppm	Cornell	Engineer

6. SENIOR OFFICERS WORKSHOP

Status: May 1983                      Lead University: Utah State University

Scope of Work: The purpose of the Senior Officers Workshop is to research, plan and develop a workshop for senior officers in LDCs, which will orient such officers in the problems of planning and implementation of programs of improved water management. The workshop was originally postponed until the next fiscal year. India, however, expressed a strong interest in this activity, so D.F. Peterson was asked to start initial preparations of such a workshop, including a budget and work plan for a workshop in India.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Dean F. Peterson	0.13 ppm	Independent Consultant	Civil and Irrigation Engineer

## 7. SHORT TERM NON-DEGREE TRAINING

Status: Ongoing                      Lead University: Utah State University

Scope of Work: The International Irrigation Center (IIC) of USU provides international leadership in the training of LDC irrigation officials and technicians. Having a strong engineering and technical course program, the activity is designed to strengthen the social and agronomic content of the Center's courses in design and management issues of irrigation systems. This is being done through the development of course materials in economics, agronomy, anthropology, and sociology which will be tested and refined through preliminary trials in actual course presentations. During the reporting period, initial plans were developed for the design of the social science strengthening component. Social scientists were identified to write course materials, a manual for field plot techniques was developed by D. James, and H. Malano translated the design of sprinkler irrigation systems manual into Spanish.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Humberto Yap	1.00 ppm	USU	Irrigation Engineer
David James	1.17 ppm	USU	Soils Scientist
Hector Malano	1.00 gpm	USU Grad Student	Research Assistant

## 8. SRI LANKA

Status: Ongoing                      Lead University: Colorado State University

Scope of Work: Planning for diagnostic analysis workshop to be held in Sri Lanka starting on or about June 27, 1983.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Larry Nelson	1.50 ppm	CSU	Agronomist

9. GLOBAL - Workshop on Social Organization and Technical Aspects of Improving Irrigation Systems

Status: Ongoing      Lead University: Colorado State University

Scope of Work: This workshop is designed to reach a mixture of project managers, senior officials, and researchers in irrigation water management from the U.S. and developing countries. The workshop emphasizes integration of technical and social aspects of water management using a diagnostic analysis approach that contains a management orientation. Interdisciplinary concepts and policies for project improvements will receive explicit focus. The workshop for Summer, 1983 will be used to provide experience to the new WMS II project personnel, in addition to selected personnel from host countries. The personnel from host countries will be nominated and supported by AID Missions or other sources. Other benefits of this workshop will be inputs to the development of the workshop for senior officials, inputs to the need for improving irrigation project management including a formal training program, and inputs to monitoring and evaluation for project management needs.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
David Freeman	1.90 ppm	CSU	Sociology
Edwin Shinn	1.50 gpm	CSU Grad St.	Sociology
John Wilkins-Wells	1.50 gpm	CSU Grad St.	Sociology

10. GLOBAL - Videotape Modules

Status: Ongoing      Lead University: Colorado State University

Scope of Work: One of the project strategies for technology transfer involves developing videotape modules that will not only tell how something is done, but will also show it. Water management concepts will be explicated through video. For example, tapes will be developed taking concepts of main system

management and showing how improved management techniques would work in a particular situation. Tapes also will be developed to transfer training concepts such as might be needed in the diagnostic analysis, development of solutions or senior officials workshops.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Dan Lattimore	0.30 ppm	CSU	Technical Journalism

#### 11. GLOBAL - Survey and Strategy for Training

Status: Ongoing      Lead University: Colorado State University

Scope of Work: A number of applied training programs in water management or related areas are being offered around the world to those from developing countries. The advisability of collecting, evaluating, and using such training material and approaches will be examined. Also, use of other training centers will be explored. Major training centers such as Irri's Water Management Training Program will be studied carefully. In addition, effort will be made to develop a strategy for U.S. based training programs.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Albert Madsen	0.40 ppm	CSU	Economics

## 12. GLOBAL - Computer Applications

Status: Ongoing      Lead University: Colorado State University

Scope of Work: Calculators, microcomputers and main-frame computers together with the rapidly expanding availability of good software, make computer utilization an important part of the project. Interactive modules for water distribution and delivery will be for training and management purposes. CSU plans to adapt current computer technology to more efficient management of the project (such as bibliographic searches, direct transmission of project documents and the professional roster).

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Tom Sheng	3.00 ppm	CSU	Civil Engineering
Daniel Sunada	0.20 ppm	CSU	Civil Engineering
David Molden	1.50 gpm	CSU Grad St.	Civil Engineering

C. SPECIAL STUDIES

1. ACTION RESEARCH (RELATIVE TO MAIN SYSTEM MANAGEMENT)

Status: April/June, 1983    Lead University: Utah State University

Scope of Work: The action research activity is an integral part of the main system activity of USU. It will be used to carry out action research in specific LDCs in order to identify problems and constraints to the main system model, and provide an environment of real conditions to test and improve solutions. During the reporting period, work was done to identify countries in which these pilot tests could be done and to start the description of research activities to be carried out.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Andrew Keller	1.50 gpm	USU Grad Student	Irrigation Engineer

2. DEVELOPMENT OF SOCIAL PARAMETERS FOR AFRICAN PROGRAM

Status: October 1982-March 1983    Lead University: Utah State Univ.

Scope of Work: The purpose of this activity is to develop the increased capacity of USU to provide assistance in African irrigation through the WMS II project, particularly in the area of social problems. This is done through the development of French language capacity and a typology, with annotated references, of the various interaction points where social aspects are the most important in irrigation development. To carry this out, during the reporting period research was conducted on irrigated cereal development and its social impact from Asian cases, topical materials relevant to African irrigation were outlined in draft form, and a preliminary bibliography was finalized.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Jon Moris	0.85 ppm	USU	Sociologist
John Bushman	0.36 gpm	USU Grad Student	Irrigation Engineer

### 3. INTERDISCIPLINARY MAIN SYSTEM MANAGEMENT AND REHABILITATION

Status: April/June, 1983    Lead University: Utah State University

Scope of Work: The main system management activity will generate knowledge about interdisciplinary management strategies for main systems. The area is complex because of the multitude of factors that must be taken into account in main systems management, including the management of extended and variable water supplies, conjunctive and re-use possibilities, energy scarcity, farmer equity and productivity issues, the relative location of the main and farm system interface, the possibilities for making systems more downstream (user) responsive, and the potential for realizing farmer initiated management decisions. During the reporting period initial preparations were begun by a graduate student for the development of the basic simulation model. An extensive first draft of the FY 84 work plan was developed and reviewed within the USU irrigation engineering department and by consultants. Meetings were held with CSU in order to integrate the efforts of this activity with related activities of that institution.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Naim Haie	2.00 gpm	USU	Irrigation Engineer
Gaylord Skogerboe	0.09 ppm	CSU	Irrigation Engineer

### 4. INTERDISCIPLINARY ON-FARM IRRIGATION SYSTEM SELECTION

Status: April/June, 1983    Lead University: Utah State University

Scope of Work: The purpose of this activity is to develop a state-of-the-art on-farm water irrigation system taxonomy with both physical and social descriptions and an interdisciplinary system selection methodology. During the reporting period, J. Keller and G. Dobbs continued to categorize both physical systems and social issues. Library research on social issues for the development of the taxonomy was carried out, utilizing the work of

J. Morris under the African Program of the WMS II project. Also, the activities were coordinated with the American Society of Civil Engineers, Irrigation and Drainage Division, On-Farm Irrigation Committee which is carrying out a program to develop physical criteria for hardware selection. Since the USU program is looking at the whole system for technology selection, it was felt that coordination of the two activities would be helpful to both programs.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Glen Dobbs	2.00 gpm	USU	Irrigation Engineer
Jack Keller	0.46 ppm	USU	Irrigation Engineer

5. GLOBAL - Comparative Analysis of Farmer Participation Experiences

Status: Ongoing                      Lead University: Cornell University

Scope of Work: Review and analysis of experiences which enhance the participation of farmers in programs of irrigation development. Special focus on experiences in Sri Lanka, the Philippines, and Indonesia, but with attention to experiences elsewhere. Project paper summarizing experiences and the literature and identifying programmatic implications is being prepared.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Norman Uphoff	0.50 ppm	Cornell	Political Science
Nancy St. Julien	3.00 gpm	CU Grad Student	City and Regional Planning
Bryan Bruns	1.50 gpm	CU Grad Student	Rural Sociology

## 6. GLOBAL - Irrigation Systems Management

Status: Ongoing      Lead University: Colorado State University

Scope of Work: The initiation of a major emphasis on developing and implementing a strategy for improving the management of irrigation systems. The study will include an interdisciplinary approach to water management with a farm focus integrated into main system management. Monitoring and evaluation for both improvement and management will be emphasized.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Albert Madsen	0.80 ppm	CSU	Economics
Robert Mohammed	0.67 gpm	CSU Grad St.	Agricultural Engineer
Kanda Paranakian	1.50 gpm	CSU Grad St.	Sociology

## 7. GLOBAL - Communication for Technology Transfer

Status: Ongoing      Lead University: Colorado State University

Scope of Work: The objectives of this study are to both evaluate present methods of communication within the project and to devise more effective communication for the project. The concentration will be on exploring, determining and explicitly defining the means of technology transfer for the ultimate users of WMS II information. Investigation will be made into socio-economic patterns, information flow and linkage patterns within the farming system, government organizations, and other agricultural support groups to determine the effectiveness of various communication channels and the best means to motivate and encourage farmers to develop and use better water management techniques.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
Oguz Nayman	1.10 ppm	CSU	Technical Journalism

8. GLOBAL - Small-scale Irrigation Systems Study

Status: Ongoing

Lead University: Cornell University

Scope of Work: A review of small-scale irrigation development issues and a comparative analysis of experiences in Asia, Africa and Latin America based on an extensive review of literature, field visits, and discussion with AID staff, and preparation of a concepts paper including recommendations for future AID actions on this topic. Project members E. Walter Coward, Jr., James Nickum, Barbara Lynch, Mike Walter, Susan Turnquist, and Ray Norman were active in the preparation of the concepts paper. In conjunction with a Utah State WMS II team, Mike Walter travelled to Peru to analyze the Peruvian irrigation sector. Barbara Lynch visited Peru in late June to look at the range and problems of small-scale irrigation projects in Andean countries, to identify possible field sites for special studies in FY-84, and to make contact with potential workshop participants. Luin Goldring, a Cornell graduate student, was hired for the period June 20 - August 12, 1983 to prepare a report on patterns of state intervention in Mexican small-scale irrigation systems and to gather documentary materials for the WMS II small-scale project.

Staffing:

PERSON	ACTIVITY TIME	AFFILIATION	SPECIALIZATION AREA
E. Walter Coward, Jr.	0.30 ppm	Cornell	Rural Sociology
Michael Walter	0.30 ppm	Cornell	Engineering
James Nickum	1.50 ppm	Cornell	Economics
Barbara Lynch	1.50 ppm	Cornell	Rural Sociology
Beth Rose	1.00 ppm	Cornell	Editor
Ray Norman	3.00 gpm	CU Grad Student	Agricultural Engineer
Susan Turnquist	3.00 gpm	CU Grad Student	Rural Sociology
Luin Goldring	0.10 gpm	CU Grad Student	Rural Sociology

Visitors:

PERSON	AFFILIATION	PURPOSE OF VISIT
Theresa Ware	USAID Office for Sahelian Development Planning in Bamako	Met with small-scale group to discuss issues, May 12-13, 1983
Dr. C. Gopinath	Center for Management in Agriculture of the Indian Institute of Management, Vastrapur	Met with faculty members to discuss pertinent issues May 12-13, 1983
Holly Sims	Graduate Student Univ. of California, Berkeley	Led two seminars "Canals and Tubewells in Pakistani Punjab Agriculture" and met with faculty for discussion

D. ADMINISTRATIVE STAFF

<u>PERSON</u>	<u>ACTIVITY TIME</u>	<u>AFFILIATION</u>	<u>POSITION/SPECIALIZATION</u>
Dave Redgrave	1.80 ppm	CSU	Agronomist
Willis Shaner	1.50 ppm	CSU	Industrial Engineer
Janelle Armentrout	0.20 ppm	CSU	Secretary
Beverly Button	0.60 ppm	CSU	Accountant
Donald Kelly	1.10 ppm	CSU	Administrator
Marcia Trepka	1.50 ppm	CSU	Secretary
Sandra Wunch	2.70 ppm	CSU	Secretary
E. Walter Coward, Jr.	0.50 ppm	Cornell	Project Coordinator
Barbara D. Lynch	1.50 ppm	Cornell	Assistant Coordinator
Fua M. Hazelman	3.00 ppm	Cornell	Project Secretary
Betty Van Amburg	0.75 ppm	Cornell	Secretary to Coord.
Beth Rose	1.20 ppm	Cornell	Project Editor
Jack Keller	1.53 ppm	USU	Project Coordinator
Dean F. Peterson	0.45 ppm	Independent	Engineer
Bryant Smith	1.20 ppm	USU	Institutional Spec.
Allen LeBaron	0.13 ppm	USU	Resource Economist
Jon Moris	0.15 ppm	USU	Sociologist
Lorraine Walker	1.50 spm	USU	Accountant
Sandy Collins	3.00 spm	USU	Secretary
Suezan Gagnon	3.00 spm	USU	Secretary
Clair Taft	0.45 spm	USU	Technical Editor

E. OVERALL ADMINISTRATION

Overall project administration was involved in defining and improving procedures for the project. Project wide themes in Irrigation System Management and Community Managed Irrigation Systems were identified. Project wide teams for each theme are being developed. Planning and budgeting of activities were initiated for FY-84 from Mission requests. The person months of time and expenditures by line item for overall administration are given below.

Staffing:

NAME	QUARTERLY 4/1/83-6/30/83	CUMULATIVE As of 6/30/83
Professional		
Wayne Clyma	1.50 ppm	4.80 ppm
Support Staff		
Janelle Armentrout	1.40 ppm	3.60 ppm
Beverly Button	1.50 ppm	4.50 ppm
Donald Kelly	1.30 ppm	3.80 ppm

Overall Administration Expenditure Report as of June 30, 1983:

LINE ITEM	BUDGETED	EXPENDITURES		DIFFERENCE
		Quarterly 4/1/83-6/30/83	Cumulative As of 6/30/83	
Salaries & Benefits	\$ 66,694	\$ 19,205.52	\$ 52,240.07	\$ 14,453.93
Transportation & Per Diem	10,500	5,932.59	7,410.07	3,089.93
Other Direct Costs 15,852.94	17,800	1,346.83	1,947.06	
Equipment	\$ 7,750	0	0	7,750.00
Subtotal Direct Costs 41,146.80	102,744	26,484.94	61,597.20	
Univ. Indirect Costs	33,694	9,534.58	22,174.99	11,519.01
Subtotal Univ. Costs	136,438	\$ 36,019.52	\$ 83,772.19	\$ 52,665.81
CID G & A and DBA	9,499			
TOTAL	\$145,937			

F. SUMMARY

In summary, a review of the activity categories of technical assistance, training and technology, and special studies shows the following profile relative to institutional status and specialization areas represented.

Table A. Amount of Activity Time Relative to Organizational Affiliations

<u>AFFILIATIONS</u>	<u>ACTIVITY TIME</u>
Aquinas College	1.00 ppm
Colorado State University	19.39 ppm
Colorado State Graduate Students	6.67 gpm
Cornell University	9.25 ppm
Cornell Graduate Students	11.95 gpm
Frederikson, Kamine	0.50 ppm
Independent	5.03 ppm
Organization of American States	0.50 ppm
Rutgers	0.30 ppm
Utah State University	19.69 ppm
Utah State Graduate Students	8.64 gpm

Table B. Amount of Activity Time Relative to Academic Specialization Area

<u>SPECIALIZATION AREA</u>	<u>ACTIVITY TIME</u>
Agronomy	4.50 ppm
Agricultural Economics	0.60 ppm
Agricultural Engineering	11.27 ppm
Civil & Irrigation Engineering	0.13 ppm
Civil Engineering	4.70 ppm
Economics	4.70 ppm
Editor	1.00 ppm
Engineering	1.50 ppm
Geography	1.00 ppm
Institutional/Media Specialist	6.07 ppm
Irrigation Engineering	12.87 ppm
Law	2.45 ppm
Political Science	1.60 ppm
Public Administration	1.00 ppm
Pump Specialist	0.20 ppm
Regional Planning	4.25 ppm
Rural Sociology	7.50 ppm
Research Assistant	1.00 ppm
Resource Economics	0.80 ppm
Sociology	11.20 ppm
Soils Science	1.17 ppm
Spanish Translator	2.51 ppm
Technical Journalism	1.40 ppm

One important objective and activity of the WMS II project is that of increasing the quality and expanding the pool of U.S. expertise in water management. The lead universities are fulfilling this objective by involving professionals from other institutions in activities, employing persons who do not represent institutions but who are independent, and by incorporating graduate students whenever appropriate.

During the quarter ending June 30, 1983, Colorado State University's activity employment profile was as follows:

<u>Source of Personnel</u>	<u>Total Employment Time</u>
Colorado State University	17.80 ppm
CSU Graduate Students	6.67 gpm
Independent	4.50 ppm
University of Idaho	0.10 ppm

The Utah State University's activity employment profile was as follows:

<u>Source of Personnel</u>	<u>Total Employment Time</u>
Utah State University	15.90 ppm
USU Graduate Students	8.64 gpm
University of Utah	1.00 ppm
Independent	0.53 ppm
Frederikson, Kamine	0.50 ppm
Organization of Amer. States	0.50 ppm
AID	0.50 ppm
Cornell University	0.45 ppm
Colorado State University	0.09 ppm

The Cornell University's activity employment profile was as follows:

<u>Source of Personnel</u>	<u>Total Employment Time</u>
Cornell University	8.80 ppm
Cornell Graduate Students	11.95 gpm
Aquinas College	1.00 ppm
Rutgers University	0.30 ppm

#### IV. ROSTER UPDATE

One of the WMS II activities is the establishment of a human resource file or professional roster of persons interested in water management work. The lead university for this activity is Colorado State University.

In order to initiate the activity, a standard roster form was first developed. The form's purpose was to acquire relevant information in the areas of professional competence, education, U.S. work experience, overseas work experience, availability for overseas assignments, language competence, geographic preferences, as well as additional information. The form was then sent through AID and the Consortium for International Development systems. In addition, forms were sent to all persons who inquired about the project.

The solicited information was then stored on the microcomputer data base system for general usage by the project. Thus, the data is recorded, filed, retrievable, and able to be summarized. The information can be retrieved utilizing such variables as primary discipline, experience, languages, availability, as well as others.

As of June 30, 1983, approximately 150 persons were listed on the roster. A summary of entries is as follows:

Discipline: Engineering

TOTAL ROSTERED	AFFILIATION		
	UNIVERSITIES	GOVERNMENT	CONSULTING FIRM/INDEPENDENT
56	University of Idaho - 6	5	12
	University of Minn. - 2		
	University of Wyoming - 3		
	Michigan State Univ. - 1		
	Cornell University - 1		
	University of Arizona - 2		
	Colorado State Univ. - 16		
	Rutgers University - 1		
	Oregon State University - 1		
	Univ. of Moratuwa - 1		
	Bangladesh Agriculture Univ. - 1		
	K.U. Levven University - 1		
	Texas Tech University - 1		
	University of Arkansas - 1		
	Auburn University - 1		

DIFFERENT TITLES	PRIMARY DISCIPLINES
Research Associate-5	Irrigation & Waste Resource Engineering-1
Prof. & Extension Engr.-1	Agricultural Engineering - 14
Professor - 12	Agricultural & Irrig. Engineering - 14
Instructor - 1	Irrigation & Drainage - 2
Research Assistant - 2	Irrigation & Water Management - 2
Professor & Director - 1	Soil & Water Conservation - 1
Agricultural Engineer - 1	Engineering Construction - 1
Project Manager - 1	Soil & Water Engineering - 3
Res. Assoc./Lecturer-1	Civil Engineering - 4
Assoc. Professor - 5	Geotech. & Materials Engineering - 1
Geotech & Materials Engr-1	Water Resources Planning - 1
Professional Hydrologist-1	Water Management - 1
Assistant Professor-6	Hydraulics & Water Resources - 5
Director - 1	Groundwater Hydrology - 1
Res. Leader-Ag.Eng.-1	Water Resources - 2
Civil Engineer	Irrigation Engr. & Agricul. Mgmt. - 1
Lecturer - 1	Mechanical Engineering - 1
Consultant - 1	Water Use & Management - 1
Assistant Res. Prof.-1	Environmental Engineering - 1
GRA - 3	Watershed Management - 1
Head, Hydrology - 1	Irrigation Equipment - 1
Consulting Engineer - 1	Water Resources Management - 1
Budget Analyst - 1	Economic Development - 1
Assistant Chief - 1	Engineering-Econ. Planning - 1
Sr. Engineer - 1	Water System Engineering - 1
Supervisor - 1	Irrigation/Open Channel Flow - 1
	Structural Evaluation & Design - 1
	Water Quality Management - 1
	Irrigation Engineering - 2
<hr/>	
TERM. ACADEMIC DEGREE	
Ph.D. - 28	
M.S. - 20	
M.E. - 1	
B.S. - 7	

Discipline: Economics

TOTAL ROSTERED	AFFILIATION		
	UNIVERSITIES	GOVERNMENT	CONSULTING FIRM/INDEPENDENT
26	University of Hawaii - 2	1	4
	Penn State University - 1		
	University of Minn. - 5		
	University of Idaho - 2		
	Clemson University - 1		
	Cal State Poly Univ. - 1		
	University of Wyoming - 2		
	Oregon State University - 1		
	Colorado State University - 3		
	University of Wisconsin - 1		
	Delhi University - 1		
	University of Arizona - 1		

DIFFERENT TITLES	PRIMARY DISCIPLINES
Assistant Specialist - 1	Agricultural Economics - 14
Assistant Professor - 1	Economics - 1
Professor - 12	Urban & Regional Planning - 1
Associate Professor - 3	Agricultural & Resource Economics - 4
Agricultural Economist - 2	Resource Economics - 2
Economist - 1	Agricultural Production Economics - 1
Research Associate - 1	Water Resource Development - 1
Administrative Manager - 1	Business Administration/Legal Offices - 1
GRA - 1	Farm Management - 1
Consultant & Manager - 1	
Consultant - 1	
Research Officer - 1	

TERMINAL ACADEMIC DEGREE

Ph.D. - 20  
M.S. - 4  
On.D. - 1  
B.S. - 1

Discipline: Agronomy

TOTAL ROSTERED	AFFILIATION		
	UNIVERSITIES	GOVERNMENT	CONSULTING FIRM/INDEPENDENT
26	University of Minn. - 4 Iowa State University - 1 Colorado State University - 6 Metropolitan State Coll. - 1 University of Arizona - 2 Bangladesh Agriculture Univ. - 1 University of Idaho - 1 Oregon State University - 3	1	6

DIFFERENT TITLES	PRIMARY DISCIPLINES
Professor - 8	Soil Biochemistry - 1
Computer Advisor - 1	Soil Science - 8
Research Associate - 1	Agronomy - 4
Director - 1	Agricultural Ext. Education - 1
Agricultural Scientist - 1	Agricultural Science - 1
Professor & Director - 1	Soil Physical Chemistry - 1
Agronomist - 3	Plant Nutrition - 1
GRA - 1	Crop & Soil Science - 1
Assistant Professor - 1	Soil & Water Science - 1
Consultant - 1	Crop Production - 1
Research Agronomist - 1	Soil Microbiology - 1
Soil Scientist - 1	Crop Physiology - 1
Ext. Specialist - 1	Vegetable Production - 1
Head, Ag. & Ext. Educ. - 1	Agricultural Education - 1
Assoc. Professor - 1	Soil Physics - 1
Professor & Head - 1	Weed Science - 1
Research Scientist - 1	

TERMINAL ACADEMIC DEGREE

Ph.D. - 22  
M.S. - 3  
B.S. - 1

Discipline: Sociology and Others

TOTAL ROSTERED	AFFILIATION		
	UNIVERSITIES	GOVERNMENT	CONSULTING FIRM/INDEPENDENT
19	Colorado State University - 6	2	1
	University of Minn. - 3		
	University of Arizona - 4		
	Rural Dev. Academy (Bangladesh) - 1		
	University of Penn. - 1		
	Aquinas College - 1		

DIFFERENT TITLES	PRIMARY DISCIPLINES
Comm. Dev. Specialist - 1	Sociology - 4
Sociologist - 2	Development Sociology - 1
Research Associate - 3	Journalism - 2
Professor - 3	Anthropology - 3
GTA - 3	Anthropology - 3
Asst. Professor - 1	Anthropology/Rural Sociology - 2
Professor & Acting Director-1	Mass Communication - 2
Program Director - 1	Technical Journalism - 1
Assoc. Professor - 2	Applied Social Science - 1
Consultant - 1	Social Anthropology - 1
	Geography - 1
	Administration - 1

TERMINAL ACADEMIC DEGREE
Ph.D. - 10
D.Phil. - 1
M.S. - 2
M.A. - 4
B.A. - 2

## V. FINANCIAL REPORT SUMMARY

Consortium for International Development  
 Water Management Synthesis II  
 Summary Financial Report with Budget Comparison  
 For the Period October 1, 1982 through June 30, 1983  
 Fiscal Year 1983  
 Preliminary

	Total F/Y 1983 Budget per Contract	Current Qtr. Period Expenditures	Cumulative Year-To-Date Expenditures	Unexpended Balance of Current Years Budget	Percent of Budget Unexpended
Salaries	\$1,070,000	\$311,587	\$558,651	\$511,349	48%
Benefits	240,750	54,963	98,348	142,402	59%
Travel & Per Diem	545,000	121,091	211,095	333,905	61%
Consultants	133,000	63,226	116,053	16,947	13%
Other Direct Costs	140,000	47,153	101,127	38,878	28%
Equipment	<u>140,000</u>	<u>11,034</u>	<u>33,286</u>	<u>58,424</u>	<u>64%</u>
Total Direct Costs	<u>2,220,460</u>	<u>609,054</u>	<u>1,118,555</u>	<u>1,101,905</u>	<u>50%</u>
Indirect Costs:					
University Indirect	762,095	202,715	353,523	408,572	53%
CID General & Administrative	<u>218,995</u>	<u>59,646</u>	<u>107,884</u>	<u>111,111</u>	<u>51%</u>
Total Indirect Costs	<u>981,090</u>	<u>262,361</u>	<u>461,407</u>	<u>519,683</u>	<u>53%</u>
Total Project Costs*	<u>\$3,201,550</u>	<u>\$871,415</u>	<u>\$1,579,962</u>	<u>\$1,621,588</u>	<u>51%</u>

\*Funding limitation \$2,550,000

Consortium for International Development

Water Management Synthesis II

Project Expenditure by University

Cumulative to Date

June 30, 1983

	Colorado State University	Utah State University	Cornell University	Consortium for International Development	Total Costs
Salaries	\$312,192	\$143,798	\$102,661		\$558,651
Fringe Benefits	41,342	34,689	22,317		98,348
Travel & Per Diem	111,787	63,167	23,109	13,032	211,095
Consultants		57,850		58,203	116,053
Other Direct Costs	67,029	19,711	9,934	4,448	101,122
Equipment	<u>27,482</u>	<u>          </u>	<u>5,804</u>	<u>          </u>	<u>33,286</u>
Total Direct Costs	<u>559,832</u>	<u>319,215</u>	<u>163,825</u>	<u>75,683</u>	<u>1118,555</u>
Indirect Costs					
University	173,239	111,726	68,558		353,523
CID G & A	<u>          </u>	<u>          </u>	<u>          </u>	<u>107,884</u>	<u>107,884</u>
Total Indirect Costs	<u>173,239</u>	<u>111,726</u>	<u>68,558</u>	<u>107,884</u>	<u>461,407</u>
Total Project Costs	<u>\$733,071</u>	<u>\$430,941</u>	<u>\$232,383</u>	<u>\$183,567</u>	<u>\$1,579,962</u>

## WATER MANAGEMENT SYNTHESIS II

CSU FINANCIAL REPORT - CUM AS OF JUNE 30, 1983

DESCRIPTION	SALARIES	BENEFITS	TRAVEL PER DIEM	CONSULTANT FEES	OTHER DIRECT	EQUIPMENT	INDIRECT COSTS	TOTAL DIRECT	ADM ALLOCATION	TOTAL ACTIVITY
UNIVERSITY SUPPORT ACTIVITIES CSU Administration 0-01-998-83	84142.35	13952.27	3933.58		32567.73	17623.61	47790.10	200009.64	-116799.61	83210.03
Unallocated 9260					43.50		15.66	59.16		59.16
TOTAL UNIV SUPPORT	84142.35 *****	13952.27 *****	3933.58 *****	0.00 *****	32611.23 *****	17623.61 *****	47805.76 *****	200068.80 *****	-116799.61 *****	83269.19 *****
TECHNICAL ASSISTANCE Bangladesh Scope of Work 1-02-006-82	4563.96	648.09	5750.41		75.25		3973.58	15011.29	3902.94	18914.23
Consultant Legal 1-03-029-82	2513.24	464.94	4135.00				2560.74	9673.92	2515.22	12189.14
Curricula Dev. 1-03-030-82	2866.01	276.48	720.00				1390.49	5252.98	1365.76	6618.74
Total Bangladesh	9943.21	1389.51	10605.41	0.00	75.25	0.00	7924.81	29938.19	7783.92	37722.11
Burma I & D Plans 1-02-010-83					7.92		2.85		2.80	13.57
Total Burma	0.00	0.00	0.00	0.00	7.92	0.00	2.85	10.77	2.80	13.57
India Water Mgmt. & Tr 1-02-020-82a	4569.70	845.40	6073.40				4135.86	15624.36	4062.33	19686.69
Dev of Solutions 1-02-024-82	21095.67	552.95	8192.05		298.44		7674.55	37813.66	9831.55	47645.21
Total India	25665.37	1398.35	14265.45	0.00	298.44	0.00	11810.41	53438.02	13893.88	67331.90
Indonesia Oad (TDY) 1-02-030-83	2577.42	476.83	5400.00		23.50		1868.39	10346.14	2689.99	13036.13
Total Indonesia	2577.42	476.83	5400.00	0.00	23.50	0.00	1868.39	10346.14	2689.99	13036.13
Pakistan WM (C&M) Meeting 1-02-029-83B	2143.48						771.66	2915.14	757.94	3673.08
Total Pakistan	2143.48	0.00	0.00	0.00	0.00	0.00	771.66	2915.14	757.94	3673.08
Senegal Paper Review 1-02-032-83	2399.87	443.97					1023.79	3867.63	1005.59	4873.22
Total Senegal	2399.87	443.97	0.00	0.00	0.00	0.00	1023.79	3867.63	1005.59	4873.22
TOTAL TECH. ASSIST.	42729.35 *****	3708.66 *****	30270.86 *****	0.00 *****	405.11 *****	0.00 *****	23401.91 *****	100515.89 *****	26134.12 *****	126650.01 *****

BEST AVAILABLE COPY

DESCRIPTION	SALARIES	BENEFITS	TRAVEL PER DIEM	CONSULTANT FEES	OTHER DIRECT	EQUIPMENT	INDIRECT COSTS	TOTAL DIRECT	ADM ALLOCATION	TOTAL ACTIVITY
<b>TRAINING &amp; TECH TRAN</b>										
Bangladesh										
DA Workshop 2-02-007-82	59331.73	7543.14	38925.56		10196.54	790.00	33967.43	150754.40	39196.15	189950.55
<b>Total Bangladesh</b>	<b>59331.73</b>	<b>7543.14</b>	<b>38925.56</b>	<b>0.00</b>	<b>10196.54</b>	<b>790.00</b>	<b>33967.43</b>	<b>150754.40</b>	<b>39196.15</b>	<b>189950.55</b>
India										
Publications 2-13-017-83					1533.37		552.01	2085.38	542.20	2627.58
Watercourse Hand 2-13-025-82	1494.44	276.47					637.53	2408.44	626.19	3034.63
Measurement Sys 2-07-026-82	4856.07		4804.55		39.20		2133.96	11833.78	3076.78	14910.56
<b>Total India</b>	<b>6350.51</b>	<b>276.47</b>	<b>4804.55</b>	<b>0.00</b>	<b>1572.57</b>	<b>0.00</b>	<b>3323.50</b>	<b>16327.60</b>	<b>4245.17</b>	<b>20572.77</b>
Sri Lanka										
DA Workshop 2-02-028-83	5600.75	782.51	25596.81		2708.00		8982.49	43670.56	11354.34	55024.90
<b>Total Sri Lanka</b>	<b>5600.75</b>	<b>782.51</b>	<b>25596.81</b>	<b>0.00</b>	<b>2708.00</b>	<b>0.00</b>	<b>8982.49</b>	<b>43670.56</b>	<b>11354.34</b>	<b>55024.90</b>
World Wide										
Brochures, Etc. 2-12-018-83	1427.78	264.14			183.91		675.30	2551.13	663.29	3214.42
Survey & Strat. 2-09-019-83	10289.14	1035.93	249.82		847.16		4166.97	16589.02	4313.15	20902.17
Videotape Modules 2-03-021-83	3836.04	709.66	42.79		355.96		1780.00	6724.45	1748.36	8472.81
Computer Appl. 2-10-022-83	14767.92	2019.82	94.50		5581.54	9068.45	7784.22	39316.45	10222.27	49538.72
Tech. & Soc Wksp 2-04-023-83	16116.72	2035.24	47.44		10349.04		10196.12	38744.56	10073.52	48818.08
<b>Total World Wide</b>	<b>46437.60</b>	<b>6064.79</b>	<b>434.55</b>	<b>0.00</b>	<b>17317.61</b>	<b>9068.45</b>	<b>24602.61</b>	<b>103925.61</b>	<b>27020.59</b>	<b>130946.20</b>
<b>TOTAL TRAINING &amp; TECHNOLOGY TRANSFER</b>	<b>117720.59</b>	<b>14666.91</b>	<b>69761.47</b>	<b>0.00</b>	<b>31794.72</b>	<b>9858.45</b>	<b>70876.03</b>	<b>314678.17</b>	<b>81816.25</b>	<b>396494.42</b>
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

WATER MANAGEMENT SYNTHESIS II

CSU FINANCIAL REPORT - CUM AS OF JUNE 30, 1983

DESCRIPTION	SALARIES	BENEFITS	TRAVEL PER DIEM	CONSULTANT FEES	OTHER DIRECT	EQUIPMENT	INDIRECT COSTS	TOTAL DIRECT	ADM ALLOCATION	TOTAL ACTIVITY
SPECIAL STUDIES										
World Wide										
Comm for Tech Tran										
3-04-024-83	10767.91	1899.56			120.99		4603.85	17392.31	4521.98	21914.29
Irrigation System										
3-04-025-83	11131.41	575.54	411.74		148.95		4375.68	16643.32	4327.26	20970.58
Total World Wide	<u>21899.32</u>	<u>2475.10</u>	<u>411.74</u>	<u>0.00</u>	<u>269.94</u>	<u>0.00</u>	<u>8979.53</u>	<u>34035.63</u>	<u>8849.24</u>	<u>42884.87</u>
TOTAL SPECIAL STUDIES	21899.32	2475.10	411.74	0.00	269.94	0.00	8979.53	34035.63	8849.24	42884.87
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
OVERALL ADMINISTRATION										
CSU Overall Adm.										
0-01-999-83	45700.96	6539.11	7410.07		1947.06		22174.99	83772.19		83772.19
TOTAL OVERALL ADM.	<u>45700.96</u>	<u>6539.11</u>	<u>7410.07</u>	<u>0.00</u>	<u>1947.06</u>	<u>0.00</u>	<u>22174.99</u>	<u>83772.19</u>	<u>0.00</u>	<u>83772.19</u>
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
TOTAL AS OF 6/30/83	312192.57	41342.05	111787.72	0.00	67028.06	27482.06	173238.22	733070.68	0.00	733070.68
	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####

DESCRIPTION	SALARIES	BENEFITS	TRAVEL PER DIEM	CONSULTANT FEES	OTHER DIRECT	EQUIPMENT	INDIRECT COSTS	TOTAL DIRECT	ADM ALLOCATION	TOTAL ACTIVITY
UNIVERSITY SUPPORT ACTIVITIES										
USU Administration	50078.13	13352.14	5997.64	1212.50	3770.67		26043.88	100454.96	-100454.96	0.00
TOTAL UNIV SUPPORT	50078.13 *****	13352.14 *****	5997.64 *****	1212.50 *****	3770.67 *****	0.00 *****	26043.88 *****	100454.96 *****	-100454.96 *****	0.00 *****
TECHNICAL ASSISTANCE										
Dominican Republic										
PID										
1-02-010-82	3500.00	995.75	4513.69	5083.00	25.00		4941.10	19058.54	5793.80	24852.34
PP										
1-02-009-83	5826.27	1460.83	22364.03	27418.70	562.06		20171.16	77803.05	23672.13	101475.18
Total Dominican Rep.	9326.27	2456.58	26877.72	32501.70	587.06	0.00	25112.26	96861.59	29465.93	126327.52
Ecuador										
Project Paper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Ecuador	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
India										
Irrig. Tech & Mang	-0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Mngt & Train										
1-02-020-82b	0.00	0.00	4121.09	12367.50	92.00	0.00	5803.21	22383.80	6804.68	29188.48
Maharashtra Minor I										
1-02-023-82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Olsen (IDY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total India	0.00	0.00	4121.09	12367.50	92.00	0.00	5803.21	22383.80	6804.68	29188.48
Jordan										
Curr Development										
1-02-041-82	1873.30	517.02	1662.38				1418.45	5471.15	1663.23	7134.38
Irrig Sector Study										
1-04-040-82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Jordan	1873.30	517.02	1662.38	0.00	0.00	0.00	1418.45	5471.15	1663.23	7134.38
Mali										
Mali										
1-02-006-83	4769.92	1316.48	4845.93	0.00	320.68	0.00	3938.55	15191.56	4618.23	19809.79
Total Mali	4769.92	1316.48	4845.93	0.00	320.68	0.00	3938.55	15191.56	4618.23	19809.79
Pakistan										
Mayfield					53.50		18.73	72.23	21.96	94.19
Total Pakistan	0.00	0.00	0.00	0.00	53.50	0.00	18.73	72.23	21.96	94.19
Peru										
Irrig Sector Sur.										
1-04-027-82	15809.85	4363.51	6456.19	4641.00	424.77		11093.36	42788.68	13017.76	55806.44
Total Peru	15809.85	4363.51	6456.19	4641.00	424.77	0.00	11093.36	42788.68	13017.76	55806.44
TOTAL TECH. ASSIST.	31779.34 *****	8653.59 *****	43963.31 *****	49510.20 *****	1478.01 *****	0.00 *****	47384.56 *****	182769.01 *****	55591.79 *****	238360.80 *****

WATER MANAGEMENT SYNTHESIS II

UTAH STATE UNIVERSITY FINANCIAL PLAN - CUM AS OF JUNE 30, 1983

DESCRIPTION	SALARIES	BENEFITS	TRAVEL PER DIEM	CONSULTANT FEES	OTHER DIRECT	EQUIPMENT	INDIRECT COSTS	TOTAL DIRECT	ADM ALLOCATION	TOTAL ACTIVITY
TRAINING & TECH TRAN Ecuador Ecuavir	37241.57	7523.63	2300.73	6400.00	12869.16	0.00	23217.28	89552.37	27263.92	116816.29
Total Ecuador	<u>37241.57</u>	<u>7523.63</u>	<u>2300.73</u>	<u>6400.00</u>	<u>12869.16</u>	<u>0.00</u>	<u>23217.28</u>	<u>89552.37</u>	<u>27263.92</u>	<u>116816.29</u>
Sri Lanka Parlin 2-11-020-83			2674.36		24.50		944.60	3643.46	1107.61	4751.07
Total Sri Lanka	<u>0.00</u>	<u>0.00</u>	<u>2674.36</u>	<u>0.00</u>	<u>24.50</u>	<u>0.00</u>	<u>944.60</u>	<u>3643.46</u>	<u>1107.61</u>	<u>4751.07</u>
World Wide Sr. Officials Wksp 2-04-007-83a Start Up Workshop	4663.70	1306.83	4490.59	727.50			254.63	982.13	298.57	1280.70
Short Term Trng.	1213.96	335.05					542.15	2091.16	635.71	2726.87
Total World Wide	<u>5877.66</u>	<u>1641.88</u>	<u>4490.59</u>	<u>727.50</u>	<u>0.00</u>	<u>0.00</u>	<u>4458.17</u>	<u>17195.80</u>	<u>5237.52</u>	<u>22433.32</u>
TOTAL TRAINING & TECHNOLOGY TRANSFER	43119.23 *****	9165.51 *****	9465.68 *****	7127.50 *****	12893.66 *****	0.00 *****	28620.05 *****	110391.63 *****	33609.05 *****	144000.68 *****
SPECIAL STUDIES World Wide On-Farm Irrig. Sys	4873.30	517.02			11.98		1890.81	7293.11	2119.22	9412.33
Dev Social Para	8740.00	2308.72			0.13		3867.10	14915.95	4534.45	19450.40
Dev of Handbook	2508.41	692.32			51.51		1138.28	4390.52	1334.72	5725.24
Interdis. Main Sys	1200.00		3740.03		1504.70		2255.66	8700.39	2649.92	11350.31
Action Research	1500.00				0.50		525.18	2025.68	615.81	2641.49
Monitor Proj Tech							0.00			0.00
Total World Wide	<u>18821.71</u>	<u>3518.06</u>	<u>3740.03</u>	<u>0.00</u>	<u>1568.82</u>	<u>0.00</u>	<u>9677.03</u>	<u>37325.65</u>	<u>11254.12</u>	<u>48579.77</u>
TOTAL SPECIAL STUDIES	18821.71 *****	3518.06 *****	3740.03 *****	0.00 *****	1568.82 *****	0.00 *****	9677.03 *****	37325.65 *****	11254.12 *****	48579.77 *****
TOTAL AS OF 6/30/83	143798.41 #####	34689.30 #####	63166.66 #####	57850.20 #####	19711.16 #####	0.00 #####	111725.52 #####	430941.25 #####	0.00 #####	430941.25 #####

## WATER MANAGEMENT SYNTHESIS II

## CORNELL UNIVERSITY FINANCIAL REPORT -- CUM AS OF JUNE 30, 1983

DESCRIPTION	SALARIES	BENEFITS	TRAVEL PER DIEM	CONSULTANT FEES	OTHER DIRECT	EQUIPMENT	INDIRECT COSTS	TOTAL DIRECT	ADM ALLOCATION	TOTAL ACTIVITY
UNIVERSITY SUPPORT ACTIVITIES CU Administration	32916.05	7716.54	1477.00		3448.09		18054.12	63611.80	-63611.80	0.00
TOTAL UNIV SUPPORT	<u>32916.05</u> *****	<u>7716.54</u> *****	<u>1477.00</u> *****	<u>0.00</u> *****	<u>3448.09</u> *****	<u>0.00</u> *****	<u>18054.12</u> *****	<u>63611.80</u> *****	<u>-63611.80</u> *****	<u>0.00</u> *****
TECHNICAL ASSISTANCE										
Bangladesh										
Water System PP 1-02-015-82	3751.41	919.10		3409.80	167.40		3613.02	11860.73	4452.83	16313.56
Identify RI Needs 1-03-028-82	8357.20	2047.51			36.52		4138.11	14579.34	5489.70	20069.04
BARC Monitoring 1-03-032-82								0.00		0.00
Total Bangladesh	<u>12108.61</u>	<u>2966.61</u>	<u>0.00</u>	<u>0.00</u>	<u>203.92</u>	<u>0.00</u>	<u>7751.13</u>	<u>26440.07</u>	<u>9942.53</u>	<u>36382.60</u>
India										
Hill Irrig Proj 1-02-013-83	13886.89	3402.29	496.40	33.49	242.64		7227.10	25288.81	9541.77	34830.58
Institutional Anal				131.41	185.67		156.32	473.40	190.83	664.23
Total India	<u>13886.89</u>	<u>3402.29</u>	<u>496.40</u>	<u>164.90</u>	<u>428.31</u>	<u>0.00</u>	<u>7383.42</u>	<u>25762.21</u>	<u>9732.60</u>	<u>35494.81</u>
Sri Lanka										
Asst. ARTI			7395.84	3715.75	198.54		5575.90	16886.03	6361.18	23247.21
Water Balance 1-02-012-82								0.00		0.00
Total Sri Lanka	<u>0.00</u>	<u>0.00</u>	<u>7395.84</u>	<u>0.00</u>	<u>198.54</u>	<u>0.00</u>	<u>5575.90</u>	<u>16886.03</u>	<u>6361.18</u>	<u>23247.21</u>
TOTAL TECH. ASSIST.	<u>25995.50</u> *****	<u>6368.90</u> *****	<u>7892.24</u> *****	<u>164.90</u> *****	<u>830.77</u> *****	<u>0.00</u> *****	<u>20710.45</u> *****	<u>69088.31</u> *****	<u>26036.31</u> *****	<u>95124.62</u> *****

BEST AVAILABLE COPY

WATER MANAGEMENT SYNTHESIS II

CORNELL UNIVERSITY FINANCIAL REPORT - CUM AS OF JUNE 30, 1983

DESCRIPTION	SALARIES	BENEFITS	TRAVEL PER DIEM	CONSULTANT FEES	OTHER DIRECT	EQUIPMENT	INDIRECT COSTS	TOTAL DIRECT	ADM ALLOCATION	TOTAL ACTIVITY
TRAINING & TECH TRAN										
Nepal										
Small-scale Wksp	7774.02	1904.63	245.23				3953.49	13877.37	5216.17	19093.54
Total Nepal	<u>7774.02</u>	<u>1904.63</u>	<u>245.23</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>3953.49</u>	<u>13877.37</u>	<u>5216.17</u>	<u>19093.54</u>
Philippines										
Video Production								0.00		0.00
Total Philippines	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
Sri Lanka										
Video Production								0.00		0.00
Total Sri Lanka	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
World Wide										
Start Up Workshop			2714.25	403.44			1537.03	4654.72	1781.13	6435.85
Total World Wide	<u>0.00</u>	<u>0.00</u>	<u>2714.25</u>	<u>403.44</u>	<u>0.00</u>	<u>0.00</u>	<u>1537.03</u>	<u>4654.72</u>	<u>1781.13</u>	<u>6435.85</u>
TOTAL TRAINING & TECHNOLOGY TRANSFER	<u>7774.02</u> *****	<u>1904.63</u> *****	<u>2959.48</u> *****	<u>0.00</u> *****	<u>0.00</u> *****	<u>0.00</u> *****	<u>5490.52</u> *****	<u>18532.09</u> *****	<u>6997.30</u> *****	<u>25529.39</u> *****
SPECIAL STUDIES										
Small-scale										
India	1047.12	256.53	3366.70				2176.02	6846.37	2544.47	9390.84
Mali					25.66		12.65	38.31	12.72	51.03
Niger					20.00		9.86	29.86	12.72	42.58
Peru	10645.19	2608.07					5248.08	18501.34	6997.30	25498.64
Philippines			245.24				120.91	366.15	139.95	506.10
Domestic	19105.37	3462.95	1209.16	1006.40	382.02		10231.21	35397.11	13358.48	48755.59
Total Small-scale	<u>30797.68</u>	<u>6327.55</u>	<u>4821.10</u>	<u>1006.40</u>	<u>427.68</u>	<u>0.00</u>	<u>17798.73</u>	<u>61179.14</u>	<u>23065.64</u>	<u>84244.78</u>
Participation										
Sri Lanka	4836.00		5911.59		987.15		5672.60	17407.34	6552.02	23959.36
Domestic	341.25		47.75	1233.14	110.26		832.08	2564.48	960.53	3525.01
Total Participation	<u>5177.25</u>	<u>0.00</u>	<u>5959.34</u>	<u>1233.14</u>	<u>1097.41</u>	<u>0.00</u>	<u>6504.68</u>	<u>19971.82</u>	<u>7512.55</u>	<u>27484.37</u>
TOTAL SPECIAL STUDIES	<u>35974.93</u> *****	<u>6327.55</u> *****	<u>10780.44</u> *****	<u>2239.54</u> *****	<u>1525.09</u> *****	<u>0.00</u> *****	<u>24303.41</u> *****	<u>81150.96</u> *****	<u>30578.19</u> *****	<u>111729.15</u> *****
TOTAL AS OF 6/30/83	<u>102660.50</u> *****	<u>22317.62</u> *****	<u>23109.16</u> *****	<u>2404.44</u> *****	<u>5803.95</u> *****	<u>0.00</u> *****	<u>68558.50</u> *****	<u>232383.16</u> *****	<u>0.00</u> *****	<u>232383.16</u> *****

BEST AVAILABLE COPY