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WATER MANAGEMENT SYNTHESIS II (WMS II) PROJECT
(936-4127)

MID-TERM EVALUATION

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**MID-TERM EXTERNAL EVALUATION OF THE
WATER MANAGEMENT SYNTHESIS II (WMS-II) PROJECT**

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TERMS AND ACRONYMS

ADPM	AID Deputy Project Manager, located in the Office of Rural and Institutional Development of the Bureau of Science and Technology.
AID	The U.S. Agency for International Development
APM	AID Project Manager, located in the Bureau for Science and Technology, Office of Agriculture, Division of Renewable and Natural Resources
APMT	AID Project Management Team, including the APM, the ADPM, the designated representatives of those regional bureaus making major contributions to the core funding
"Buy-Ins"	AID mission-funded overseas technical assistance, including training
CID	Consortium for International Development, headquartered at Tucson, Arizona
Contractee	AID
Contractor	CID
CPMT	Contractor Project Management Team, consisting of the three UPDs and chaired by the EPD, and including a CID Executive Office representative.
CSU	Colorado State University, Ft. Collins, Colorado
CU	Cornell University, Ithaca, New York
EOPS	End of Project Status (Indicators)
EPD	Executive Project Director, located at CID, as designated under the new project management plan of August 1984. The EPD took up his duties in November 1984 and is the employee of the project, <u>not</u> CID

GRA	Graduate Assistant
JPMT	Joint Project Management Team, consisting of all members of the CPMT and the APMT and is chaired jointly by the EPD and the APM. The JPMT jointly discusses annual work plans, long range programs and strategies, policy issues, implementation procedures, and reviews problems and monitors project performance.
LDC	Less Developed Country
PI	Principal Investigator
PID	Project Implementation Document
PP or PROP	Project Paper
R&D	Research and Development
SOW	Statement (or Scope) of Work
Special Studies Component	Includes diagnostic analysis, project analysis, monitoring, and research studies, as defined in the Project Paper (dated 8/22/82)
Sub-Contractor(s)	The three participating universities through CID, being CU, CSU and USU
Technical Assistance Component	Includes roster, assignments, and evaluations, focused on AID missions, as defined in the WMS-II Project Paper (dated 8/22/82)
Technology Transfer Component	Includes networking, newsletters, seminars, guides and handbooks, strategy papers, and library, as defined in the Project Paper (dated 8/22/82)
Training Component	Includes diagnostic analysis, new courses, evaluations, trainer courses, audio visual modules, formal training, and other training, as defined in the WMS-II Project Paper (dated 8/22/82)

"University-
Initiated Activities" In particular, core-funded special studies (including diagnostic analysis, project analysis, monitoring, and research studies), but also including some aspects and activities under Technology Transfer and Training (see the WMS-II Project Paper, dated 8/2/82).

UPD University Project Director (one each at CU, CSU, and USU)

USU Utah State University, Logan, Utah

WMS-I Water Management Synthesis Project No. 1, contract dated September 29, 1978

WMS-II Water Management Synthesis Project No. 2, contract dated September 29, 1982

EXECUTIVE SUMMARY

PROBLEM AND OVERVIEW

WMS-II is designed to improve water management practices in developing countries to increase the economic efficiency of irrigation water use for agriculture production.

U.S. ASSISTANCE

Characteristics of the Project

This project is jointly managed by the Science & Technology (S&T) Bureau Offices of Agriculture and of Rural and Institutional Development.

A unique characteristic is its combination of rich technical expertise from three sub-contracting universities--Cornell University, Colorado State University, and Utah State University, associated through the Consortium for International Development (the contractor). The project spans irrigation concerns from main water distribution systems to the individual irrigating farmer, and the various linkages therein. It addresses engineering, agronomic, and social science concerns.

General Project Information

Project No: 936-4127

Estimated Contract Cost: \$19,646,000

Effective Dates: 9/30/82 - 9/29/87

Coverage: Central project, servicing AID Missions and LDC governments in Asia and Near East, Latin America and the Caribbean, and Africa.

Goal: Improve the technical efficiency and consequently the productivity and economic performance of irrigated agriculture.

Purpose: Assist LDC governments to improve their institutional capabilities in irrigation system development and operation.

Concepts & Strategies: The project responds to the assistance needs of AID missions and host countries through the technical assistance "buy-in" mechanism. The project also has a set of core-funded activities (special studies, training and technology transfer) to establish an operational framework within which assistance requests are serviced. The core activities also ensure (1) the

generation of new or improved water management techniques, through the conduct of field studies, diagnostic analysis, testing, etc., and (2) the synthesis of these results into a cohesive program to aid institution strengthening and contribute to improved irrigation water management.

PURPOSE OF THE EVALUATION

Previous Evaluations

Two previous in-house evaluations were conducted at the mission level following years 1 and 2, and an AID management and administrative evaluation was conducted in the project's 10th month.

Present Evaluation

This mid-term, external evaluation, which has been comprehensive in nature, has focused on two major purposes, viz:

- To assess progress to date and review plans for the remainder of the contract period (i.e., effectiveness); and
- To offer guidance and recommendations for improving current and possible follow-on water management activities.

ASSESSMENT OF PERFORMANCE AND EFFECTIVENESS

Overall

Judged by the timeliness, quality and quantity of outputs, the overall results to date of WMS-II have been very commendable. Shortcomings relate more to what has been left undone, rather than poor performance.

Overseas Activities (Technical Assistance)

Performance on the "buy-in" portion of the contract (approximately 25% of total funding) has been outstanding as evidenced by client satisfaction and increasing demand.

University-Initiated Activities

The outputs or products of core-funded activities have been generally of high quality but, given the absence of a jointly agreed-upon overall strategy, a life-of-the-project work plan, and realistic and specific EOPS indicators, it is difficult to

relate accomplishments to the major end-results expected at project termination (i.e., effectiveness), particularly regarding synthesis. Progress has been less than optimal in research (special studies) and networking (technology transfer) and the absence to date of a newsletter and similar publications is symptomatic of continuing management problems.

Management

While performance per se has been satisfactory or better overall, the management of this complicated and innovative project involving CID, three sub-contracting universities, AID field missions and several AID/W offices and bureaus, particularly regarding the core-funded activities (approximately 75% of total funding), has had serious difficulties. While considerable improvement has taken place under the aegis of a new project management plan in 1984, there is room for further improvement.

MAJOR OBSERVATIONS AND CONCLUSIONS

As indicated in the above assessment of performance and effectiveness, the Evaluation Team concluded that WMS-II is a very good project with a number of accomplishments already to its credit and the potential for much more. While found in more detail in the main report, some of the more important observations contributing to this basic conclusion include:

- An increasing demand for services as verified by the unexpected early closing-in on the "buy-in" ceiling.
- Evident client satisfaction, at least insofar as AID Missions are concerned, with only minor problems in providing services in an adequate and timely manner.
- The production of a number of quality products through core-funded activities, e.g., the EQUAVIR video materials package, the Diagnostic Analysis materials and training workshops, the African Irrigation Overview, the Rehabilitative Simulation Game, etc.
- A concerted effort by CID, its subcontractors and AID to improve project management through the approval of a "new management plan" and appointment for Executive Project Director located in CID.

Given this recognition by the Evaluation Team of the continuing importance of this project and the major achievements already produced, and in terms of our mandate to offer guidance and recommendations for improving current and possible follow-on

water management activities, the remainder of this executive presentation will focus on existing strengths and weaknesses, the problems now being encountered, and the rationale for subsequent team recommendations.

The Players

CID

- While CID played a leading part in developing the commendable new management plan, its performance as the "prime contractor" in providing effective leadership to and coordination of the three subcontracting universities has been hampered by from the beginning by several factors, viz: (i) project planning and contract documents that did not adequately address management, lines of authority, responsibilities for planning, and relationships among sub-contractors; (ii) unrealistic expectations on the part of AID; (iii) the reluctance of universities to surrender "sovereignty" to an outside organization however close in name or association; and (iv) the vague and changing nature of CID's role in project management as expressed by its Board of Trustees. In these circumstances, and given similar problems on the AID side, the leadership and coordinating mechanisms recently created, i.e., the CPMT and JPMT, are critical to project success.
- When the new Executive Director of CID has worked out a role acceptable to its Board of Trustees, AID will need to review what type of CID involvement it desires in follow-on water management activities, if any.

The Universities

- All three universities involved are strong achievers with long and deep-rooted international commitments, outstanding faculties, promising students and they produce quality products. The ability to produce, however, has been adversely affected, some more than others and in almost direct proportion to their dependence on "soft money", by the propensity of all parties to manage at the short-term and lowest levels of inputs-activities.
- Despite their achievement-oriented international commitment, individually and collectively they find it difficult to move across departmental and college lines and even more difficult to look outward (in this case, beyond themselves to other CID members, non-CID affiliated universities and to the private sector).

- AID expectations in this respect have been over--ambitious given the structure of the project and contract, funds available, the budget categories provided, and the institutional nature of land-grant universities.
- Nevertheless, given the increasing and changing demand for services expected in Africa and elsewhere, the subcontractors will need continuous external pressure (i.e., from AID) to develop further, expand and maintain the interdisciplinary approach required in this project.

AID

- The AID Project Management Team (APMT), in attempting to carry out its responsibilities, has been inundated with the work load and priority required for mission buy-ins, performing at times functions which have traditionally been carried out by regional bureaus and/or field missions.
- This work load, combined with the significant time and effort required in an effective "collaborative" effort to plan and produce project outputs in this complicated type of project involving high "transaction costs", requires a style of management based on the concept of "management by objectives".
- The agency is aware of the importance of water management in Africa and its special requirements and has initiated a number of exploratory activities within WMS-II.

Technical Problems

- The subcontractors have agreed to a convenient division of work but they have not yet cooperated effectively in strategizing, together and with their AID partner, for achievement of the project purpose nor in developing joint activities leading to further elaboration and synthesis of the water management systems concept and methodology.
- There is a surprising absence, at this stage of the project, of a fully developed conceptual framework for a systems approach to water management and a low priority assigned to producing such. A continuing stratigizing process as the basis for problem analysis, identification of gaps, and selecting priorities for program development and work planning is urgently needed and its existence should be a pre-condition for any WMS-III or similar follow-on project(s).

- As to "synthesis" per se, which currently includes the system components of main system (conveyance), on-farm (small farmer) use of the water delivered, and the interface between them, there are other components needed to complete the model, particularly in dealing with small and complementary irrigation systems such as will be needed in much of Africa and the uplands of Asia. Examples include water harvesting, ground water development and drainage.

Management Problems

- A modus operandi involving close management control at the input and sub-activity level appears to be the unintended result of several factors including: (i) a lack of time during an accelerated contract negotiation process to specify clearly the management requirements (e.g., annual progress reports) and expected project results (outputs in substantive terms); (ii) a change in leadership from WMS-I; (iii) the day-to-day priority given to the procurement of "buy-ins" for USAID mission requirements; and (iv) insufficient senior management guidance.
- The "hands on" style of management currently being practiced by the APMT, as reflected in the imposition of onerous and often inappropriate management requirements (e.g., quarterly reports, line item pre-approvals, overly detailed expenditure data), has contributed to an atmosphere of confusion and mistrust which characterized the first two years of project operations and, to some extent, still exists.
- To a noteworthy extent, the confusion or dissatisfaction with assigned roles and commensurate authorities and responsibilities, particularly on the CID and universities side, has been improved by the development of the "new management plan" adopted last year and the appointment of a highly qualified Executive Project Director (EPD), located in CID.
- The tenor of communications between all parties still needs improvement and, in core-funded activities (i.e., special studies and technology transfer) a collaborative mode between AID, CID and the universities should be adopted.
- The JPMT now needs to shift its attention to strategizing and multi-year planning to produce significant and relevant project end results which will contribute to

synthesis and successful achievement of the project purpose. This should serve as the basis for a system of project "management-by-results" with the APMT assuming the more traditional and appropriate oversight role and with the contractor responsible for implementation.

New Requirements

- The shift to a new style of management as recommended will require on the part of AID, inter alia: (i) consolidation of project management within one office; (ii) developing a more effective mechanism for achieving in-house consensus; (iii) relieving the APMT from most of the backstopping and administrative routine involved in mission "buy-ins"; and, last but perhaps most important, (iv) adequate budget and interbureau support for participation as parties in a collaborative mode (e.g., timely attendance at CMPT and other meetings concerning strategy, program development and work planning, etc., at appropriate professional and/or management levels).
- On the part of the universities, it will require a new resolve to: (i) making the new management structure work; (ii) extending its efforts to increase inter and intra-university involvement in WMS-II; and (iii) cooperating closely with AID as a partner in strategizing and planning for synthesis and establishing the basis for a more collaborative and effective style of management.

RECOMMENDATIONS

The evaluation team, after completion of its site visits, had the feeling that all parties were more than willing to place the problems and obstacles of the past behind them and move forward in this very important area. With this spirit in mind, the team developed a number of recommendations for consideration by all parties. They are intended to facilitate a review of this report by the senior management of AID, CID and the sub-contracting universities and subsequent decision-making and follow-up. A summarized version follows:

Technical Content

1. The JMPT should immediately initiate the process of strategizing for water management synthesis on a multi-year basis. For the remainder of the current project, efforts under the existing division of work should continue but increased efforts are needed in research and technology transfer, including networking.

2. A progress report for external audiences and a newsletter should be distributed without delay. Responsibility for publications should be decentralized and a system developed to assure they reach their intended audiences.

Management

3. AID senior management should consider:
 - a. Changing the APMT management style for core-funded activities to a more collaborative and result-oriented mode.
 - b. Continuing S&T's guidance and facilitative role in technical assistance but encouraging the regional bureaus to assume their normal backstopping and administrative role for field mission projects.
 - c. Consolidating complete project management responsibility in one office, i.e., S&T/Agriculture.
 - d. Developing a more effective system for achieving in-house consensus where inter-agency participation is appropriate or necessary.
4. AID should organize and provide the leadership for its substantive contributions to the strategizing process for water management synthesis. At the same time, CID and its sub-contractor need to involve the APMT as early as possible in major programming initiatives and changes while making more concerted efforts for coordination and joint activities in core-funded programs leading to synthesis.
5. Action should be taken, as enumerated in the full report, by amending the contract and/or other appropriate instruments, to effect the changes suggested.

Africa Requirements

6. While attempts should be made to reallocate and expand the human resources available within WMS-II to meet the expected needs in Africa, AID should also develop alternative means outside, parallel and/or complementary to the project in order to provide the quantity and quality of expertise projected.

Follows-on Activity on Project(s)

7. In any follow-on activity or project, the scope of work should be enlarged to include attention to ground water development, water harvesting, drainage and salinity system components and priority sociological, economic and cultural factors.
8. In such an event, technical assistance should be handled by a task-order or similar arrangement with a parallel instrument for core-funded activities, preferably a cooperative agreement, which is essential for systems development and achieving water management synthesis in the LDCs.
9. Understanding the importance of the problem being addressed by this project, the increasing demand for its services, the need for additional synthesis and systems development, performance to date, and the investments already made by AID and the cooperating universities, the evaluation team recommends that this, project redesigned as necessary, be extended to cover the full 10 year span as originally planned.

BASIC PROJECT IDENTIFICATION DATA

1. Country: Multicountry/U.S.
 2. Project Title: Water Management Synthesis II (WMS-II)
 3. Project Number (Grant and Loan where applicable):
936-4127
 4. Project Dates: FY 82 - 86 (preceeded by WMS-I to 3/83)
 - a. First Project Agreement:
 - b. Final Obligation:
 - c. Project Activity Completion Date (PACD): 9/30/87
 5. Project Funding:
 - a. AID Bilateral Funding (Loan or Grant): \$20,000,000
 - b. Other Major Donors:
 - c. Host Country Counterpart Funds: Unknown
- TOTAL
6. Mode of Implementation (specify contractual arrangements and numbers): Contract #DAN 4127-C-00-2086-00 (Cost Reimbursable)
 7. Project Design (AID and Contractor):
 8. Responsible AID officials:
 - a. Mission Director(s): Anson Berthrand, Director S&T/AGR
 - b. Project Officer(s): Worth Fitzgerald, S&T/AGR/RNR
 9. Previous Evaluation and Reviews (include title, type, and date): WMS-II Report on Mission Evaluation, AID/ST Management, July 1984
 10. Cost of Present Evaluation:
 - a. Direct Hire: Unknown
 - b. Contract: \$60,924 obligated
 - c. Other: NA

TOTAL

I. INTRODUCTION

A. Purpose of the Evaluation

Given the extensive expectations laid out in the evaluation statement of work (see Annex I) and the subsequent issue statement provided the team by AID/S&T (see Annex V), the evaluation team interpreted the purpose of this mid-term evaluation of the Water Management Synthesis II (WMS-II) project as being primarily two fold, viz: (1) to assess progress to date and review plans for the remainder of the contract period, in terms of probable achievement of the project purpose, i.e. effectiveness; and (2) to offer guidance and recommendations for improving current and possible follow-on water management activities. See Annex II, "Methodology Employed in Evaluation".

In performing its assigned duties, the evaluation team was impressed with the considerable accomplishments of the WMS-II project during the first half of the contract period. AID's selection of this subsector for major funding is consistent with its potential for important contributions to agriculture and enhanced farm productivity. The team noted the solidity and substance of the accomplishments in this project by all of the principal institutions involved. While clearly being a successful project to date, there are certain managerial and conceptual problems which require resolution before a new phase or follow-on project is considered. What has been done has been well done; in some areas, however, work remains to be initiated and in other areas, results remain to be realized. We want to stress at the outset, however, that there is every reason for AID and CID and the universities to be proud of the work to date and confident regarding future contributions.

It is assumed that the readers of this report have some background concerning WMS-II. For this reason plus a desire to keep the evaluation report within a reasonable size, purely background or supporting data is included in the appendices. A major exception are the formal CID and university replies to the AID issue paper which should be carefully reviewed by the interested parties.

B. Background to the Project

Both CSU and USU were previous recipients of 211(d) grants under the Foreign Assistance Act of the United States. These grants provided select institutions with funds for strengthening their resource capabilities to perform functions pursuant to the purposes of the Foreign Assistance Act in international development. Similarly, CUSUWASH (the first name for CID) was established at least partially by the urging of AID. There were two notable and immediate precedents in the history of WMS-II: (1) the previous WMS-I project involving Utah State University (USU/Logan, Utah) and Colorado State University (CSU/Ft. Collins, Colorado), and (2) research in rural development and small farmer organizations by investigators at Cornell University (CU/Ithaca, New York). These earlier projects were relatively small, employing appropriately simple management systems and informal styles, including strong "professional" leadership by the U.S. Agency for International Development (AID), and were somewhat exploratory in nature. It should be noted that at the end of the WMS-I project, in 1983, structure but not the substance of a systems approach to water management had been elaborated, out of which WMS-II was forged.

These research and development activities in water management problems in developing countries are and have been part of an important response to a strong need to which the United States can make significant contributions.

For purposes of combining the capabilities of these institutions, and the knowledge and technical capacity generated by prior work, the Consortium for International Development (CID/Tucson, Arizona) was selected and, given the large size of expected USAID mission buy-ins for technical assistance, justification was made to contract with it and three sub-contracting universities (USU, CSU and CU), on the basis of a "predominant capability".*

* Note that Cornell University is not a CID member institution, but that it was invited to join CSU and USU as a fully equal partner in the WMS-II venture because of its experience in rural development and small farmers.

During the negotiations for WMS-II there was a change of the principal players and a rush to conclude the contract to meet mission demands for technical assistance. In the development of the project paper, the instrument originally intended was a "Cooperative Agreement" between AID and CID. A last-minute decision was made to include a mix of contracting modes, i.e., technical assistance "buy-ins" by AID missions (a procurement mode), and so-called "university-initiated activities" (a collaborative mode). These events led to adopting a contract structure with limited time to consider its implications for the sub-contracting universities and the project.

II.

OBSERVATIONS

A. Consortium for International Development (CID)

There is an apparent gap between the current outlook of the CID Board of Trustees and AID's expectations as to CID's role (at least in a contractual sense). This may be partially due to CID's inability, prior to the appointment of an Executive Project Director (EPD) in its office, to correct or mediate effectively in the problems its sub-contractors were having with AID and among themselves. In this context, the team noted that CID is adding a "preferred" option of its being a sub-contractor for support services to a lead university as distinguished from its former role as contract "manager". The perception of the role of CID is shifting among the consortium members and the outcome of this process will not be clear, most likely, until this fall after a new Executive Director has taken hold.

There is, however, a strong positive factor to note, symbolized by the appointment of the EPD for WMS-II, i.e., CID's recognition that the project was worth the effort to save it, and concerted efforts have been made and are being made to do so within CID.

CID is a viable entity, based on its own strong institutional resources (the member institutions). It is an appropriate mechanism for the member universities to take part in developing country activities. It is not, however, the only mechanism open to the universities. They can and do, in fact, compete with their consortium for development contracts. It is also clear that while AID looks to CID as the contractor for WMS-II, with all its implications, the universities do not surrender any authority with ease and project management on all sides need to come to terms with this fact of life.

The team wishes to recognize formally the development at a new, computerized management information system developed for WMS-II at CID. While it is currently activity-input oriented, it is capable of expansion to include outputs and milestone achievements (i.e., progress indicators). We encourage its further development and expansion project-wide, beyond its current focus on financial reporting.

B. Participating Universities (CU, CSU, USU)

Commonalities

All of the universities are affected, some more adversely than others, by the propensity to manage at the short-term input-activity level. The impact is greater at CSU, and perhaps least so at CU. This problem is, in part, a function of the degree of university dependency on "soft money" (i.e., non-continuous funding). Each of the three universities has mechanisms to allow some of their project overhead to feed back to the participating departments which is highly commendable. This provides incentives for further faculty participation in project activities and can contribute to building intellectual capacity within each university.

All three institutions are strong achievers, with deep international commitments, outstanding faculties, promising students, and produce quality products. They each emphasize the desirability of faculty freedom with concomitant responsibility for results. Each university is fiercely independent, with a strong base for participation in the project.

While the interdisciplinary mix varies among the three campuses, the interdisciplinary mix across the entire project adequately reflects the requirements of a systems approach with the exception of skills in African subject matters. However, the commitment to the interdisciplinary approach is not so apparent in the missions and in the host country approaches--a point which the evaluation team became aware of only inferentially.

WMS-II staff at each university is supportive of the new management structure initiated by the prime contractor in August 1984. All participants, university project directors (UPDs), faculty, etc. report substantial improvement in management and operations since the appointment of the EPD in November 1984.

The universities have a common and understandable concern with the institution-building activities of the core-funded part of the contract. Their increasing reliance, however, on AID funding for

sustaining support of their international capabilities forces them (sometimes against their own better judgement) to give priority to technical assistance, i.e., making faculty available for short-term and ad hoc overseas assignments--usually as a member of a team.

The universities find themselves in a paradox. As participants in institution-building programs (beginning with 211(d) grants and continuing with Title XII strengthening grants and the current Memoranda of Understanding (MOU), BIFAD, Collaborative Research Support Programs (CRSPs), etc., all pursuant to authorities within the Foreign Assistance Act), they have significantly enlarged their international programs. These in turn have come to depend upon external support on a sustained basis. This reduces the University's flexibility to choose new projects and activities more in harmony with changing institutional needs or objectives and makes them more dependent.

All three universities utilize each other's expertise for fielding technical assistance teams and, to a lesser extent, in composing training teams; that is, there is an exchange of professional personnel. However, recourse to outside parties, including the private sector, has been spotty and AID's expectations in this area may be unrealistic. The interchange and interaction of professional personnel between universities for technology transfer and special studies has been even less impressive, perhaps as might be expected; universities and their departments are after all not government laboratories or private sector R&D units, operated on a pyramidal basis.

As land grant chartered institutions, each of the three sub-contracting universities is committed to teaching, research, and extension and is controlled by a board of trustees. AID project management has not always adequately recognized these differences, attempting to force a common approach with some less than ideal results. For example, each university has been required to vastly expand its accounting and reporting functions. The AID requirements for detailed financial and activity quarterly reporting force the universities to produce data, at considerable extra administrative cost, which are not always useful for internal

management purposes nor any other that the team could observe. All three universities reported some sub-project and activity costs as part of overall project administration (e.g., project related telephone calls and other "transaction" costs).

None of the three universities have fully exploited the opportunities for producing publications from the project but this has been aggravated, to some extent, by APMT requirements for prior approvals on almost everything. There is an undercurrent of resistance within each university to any form of overall centralized publication management. There is, however, a need for a centralized system with decentralized (university-based) functions.

While, in the team's findings, the APMT's concern with limited faculty involvement is not valid, there is a variation in the ability, if not the commitment, of each UPD to tap the existing available intellectual strengths of other departments. In part, where most serious, (i.e. CSU), this is a result of the short tether management style and the consequent inability of the UPD's to offer valid commitments to departments on a timely basis (e.g., commitments in the spring for time of faculty in following fall).

Differences

Cornell University has all of its core faculty salaried from continuous (hard) funding sources; i.e., they are not paid directly from WMS-II funding. CSU and USU are, by comparison, more dependent on funds from grants and contracts for faculty support.

While technical competence at the UPD level at each university is high, there is quite a variation at each institution in the political and interpersonal skills required to manage this complicated type of cooperative endeavor. This has been most obvious at CSU where the Campus Director was also acting as Project Director and became involved with debates and confrontations with AID staff and his counterparts at USU and CU. In this case, intervention by senior levels in the CSU structure, as well as by CID, were (as with AID) not particularly timely or effective.

University faculties have not been uniformly integrated into WMS-II. In some instances, particularly in USU, ancillary department involvement (e.g., from the social sciences, economics, and agronomy) has been too narrow to exploit fully the universitys' potential intellectual strengths. This causes the outputs of the university-initiated activities to be less than optimal. Obviously, the quality and quantity of their outputs would be improved if more people in ancillary and related disciplines were integrated in a more collegial and constructive fashion. In other cases, e.g., at CSU, involvement of department heads and faculty of proven reputation, was less than desired. In no case, however, did the team believe "junior" or unqualified staff were being used. Financial flexibility and delegation to UPDs would facilitate the process of inter-university faculty participation. The team was impressed, with recent efforts by all the universities to resolve this problem but more remains to be done.

Synthesis

The team was not made aware of the existence of a common concept of water management synthesis, nor of a strategy to achieve such a synthesis. Rather, there has been a convenient division of work load by the three major sub-contractors which they, themselves, believe to be a "strategy". The division of work has generally been achieved amicably and according to the intellectual strengths at each university, but there have been several cases of conflict over proprietorship, methodology, and style. While this is natural and to be expected between academic institutions, the ADPT's style of management and certain miscommunications have sometimes exacerbated problems that have arisen. A small contingent of faculty members, albeit highly competent, appear to carry on inter-university vendettas, and may need reining in by the UPD's in so far as participation in the project is concerned.

C. Agency for International Development (AID)

USAID deserves due credit for having correctly identified a major problem area facing LDCs and for initiating action to get substantive work underway

in a systems approach to irrigation management and technology. S&T, working closely with the regional bureaus (especially the Asia Bureau) has done an excellent job in assembling quality teams to meet mission needs and solve LDC problems. The manner in which it has organized and carried out its oversight responsibilities, regarding core-funded activities, however, has caused some confrontations which have unnecessarily retarded project accomplishments. There is an undesirable split in project management responsibility within the AID S&T Bureau, and some confusion and scrambling of roles among the regional bureaus.

The AID Project Management Team (APMT) was completely new in 1982 and apparently did not fully appreciate or understand the necessity or desirability of having an overlap between the institutional objectives of the "contracting" universities and AID program objectives. Its subsequent management style driven, perhaps, by the procurement mode for buy-ins, has been characterized by short-term input control, inappropriately and almost exclusively focused at the activity and sub-activity levels. This type of tight management has denied APMT the time and opportunity to give substantive and result-oriented direction to the project, weakened the collaborative nature of joint undertakings, and withheld the needed delegation of operational responsibility to the contractor and sub-contractors.

The APMT devotes the major share of its time to the technical assistance ("buy-in") part of the project, which involves approximately 25 percent of WMS II funding, a function which seems overcentralized in S&T, with two questionable results. First, given the heavy administrative workload involved, S&T does not have the time or resources to focus effectively on the substantive targeting of the research or core-funded components. Second, S&T is handling administrative and support functions for this project which more properly and normally belong with the regional bureaus.

By focussing its talents and limited resources on the "buy-in" technical assistance function, a focus not discouraged by the bureaus, an imbalance has

resulted. To some extent, this situation can be expected to change as the "buy-in" ceiling is rapidly approached. Nevertheless, AID should reconsider whether there is a real need for S&T to perform what are essentially regional bureau "backstopping" functions, although an S&T coordinating function for technical assistance will still be needed to link AID with the universities.

The effective involvement of executive level AID officials, as also observed on the university side, has been sporadic, difficult to trace, and not always successful. To some extent, and given the serious problems which arose early in the project concerning inter-university and AID-contractor relations, this was unavoidable, nevertheless, the APMT has not been given clear guidance and direction as to their responsibilities, preferred management style, etc. The bifurcation of responsibilities between S&T/Agriculture and S&T/Rural Development has obviously contributed to this situation.

It appears that the APMT management of this project has sought support and excessive guidance from the Contracts Office for its preferred management style--which seems to be predicated on reducing costs and institutional risk-aversion, rather than the prudent direction and expenditure of funds to achieve pre-determined project results. The result of the "management by inputs" style has sometimes led to an adversary relationship between AID and the project players. De facto (and to some extent de jure), the APMT is running the implementation of this project at the lowest level of activity with a dampening effect, particularly at CSU, on initiative and innovation. This style is unlikely to assist the contractor in producing the majority of the project outputs aimed at research, training, technology transfer, and institution building, and is only applicable to the technical assistance functions to the extent that missions are not prepared to delegate planning and operational responsibilities to CID or the sub-contracting universities.

While a new CID/university project management structure has been recently created, it has not touched the management problems within the AID/W structure itself. The AID management style appears

to have remained unchanged. Finally, it should be noted that for the current management style, available administrative support is not enough. Obviously, either a change in style or increase in support staff is required.

III. ASSESSMENT OF PERFORMANCE

The overall results of WMS-II to date, judged by the timeliness, quality, and quantity of outputs, are commendable. This holds true for both the overseas activities and those which are core-funded. The project's shortcomings relate more to what has been left undone, rather than to an insufficient or unacceptable technical performance. See Annex II for a statistical review of outputs. In reviewing the table, note that in some areas or categories of effort or results, the early years of the project would not be when major outputs would be expected. Thus, low percentage results, for example in guides/handbooks, would be normal for year three.

The overseas activities of the project involve the provision of technical assistance, including some training, largely financed by funds allocated by missions. This accounts for approximately 25% of the project budget.

The university-initiated core-funded activities (special studies research, technology transfer, and training) may be located on campus, or overseas, or both, but are aimed at investigation of problems inhibiting or limiting efficient use of irrigated water in the LDCs. It also involves institutional development, e.g., increasing a university's capabilities to work on LDC problems, and represents the bulk of the project funding.

A. Overseas Activities

While the evaluation team did not visit overseas sites, the various materials examined (see Annexes and Bibliography) would seem to reveal consistently high quality, responsiveness to mission requests, and timeliness of delivery, despite all of the problems in the system. In some cases where there has been criticism voiced in regard to quality (to the extent that this is correct) it often reflects the pressures for rapid delivery of services and insistence on participation only of senior and well-known professionals.

The team believes that the project has had a positive effect in the sense of producing AID project documentation (Project Identification Documents (PIDs), Project Papers (Props), etc.),

the usefulness of which is indirectly verified by client (USAID and LDC) satisfaction and increasing demand.

The impact of WMS-II on host country water management activities was reported to the team through the two field evaluation reports of the project (FY 83 and Project Mid-Term). In those cases involving host country agencies, the client satisfaction was reported to be consistently high. It should be pointed out, however, that no provision was made for the team to have made available to it, directly, the views of host country (LDC client) responsible officials or the targeted beneficiaries, i.e., small farmers. Members of the team did however meet Dr. Nakool Thongtanee of Thailand who was visiting at USU/Logan.

B. University Initiated Activities

While there have been significant university initiated activities on each campus, there is little evidence of an overall strategy to create and implement synthesis or of effective AID intellectual input to this process. Attempts to create a synthesis, through the special studies task force, collapsed during the interpersonal frictions prevalent in early project activity. Such a strategizing effort should include bringing into the mix outside experts, both national and international. To some degree this has occurred, but overall this is a weak aspect of the project. The universities should also tap AID, in order to get a picture of the issues and needs of how water synthesis fits within the larger strategies in agriculture, e.g., other water uses, food aid, resource management, forestry, aquaculture, environmental protection, etc. This is as much AID's responsibility to communicate and lead as it is the universities' responsibility to seek and suggest.

The term "university-initiated activities" is a misnomer since almost every detail must be first approved by the APMT. What is needed, in our view, is a set of collaborative endeavors with AID, as distinguished from either a top-down AID-directed effort or university-based solo undertakings. Nevertheless, output quality and quantity have been

generally high. Examples include, but are not limited to, the EQUAVIR video materials package, the Diagnostic Analysis materials and training workshops, the African Irrigation Overview, the Rehabilitation Simulation Game, farmer involvement workshops and video materials, etc.

Problems in special studies, however, do exist. For one, the requirement for detailed prior AID approval inhibits the exploratory and experimental activities normally required with research and development; for example, in studies of interface between farm and main systems, and studies of information flow and farmer communication systems. Even more seriously, there is an appearance of unwarranted interference from AID on technical research matters. There is too much second-guessing and emphasis on the means, activities, and sub-outputs at the university level rather than the expected results of the research, their relevance, and how they would be used by developing country clients. There has been an inadequate provision for, or acceptance of, experimental or innovative research.

On the other hand, the universities and CID, collectively and individually, have been remiss in failing to push for an integrated and coordinated strategy for core-funded activities as the basis for a result-oriented, multi-year work plan. This is particularly true regarding R&D.

While this project is noted for exploring water management issues beyond the juncture of engineering and agronomy (particularly in social sciences), ground water development, water harvesting, and drainage appear to have been slighted as major components of a systems approach. However, expanding the project scope at this time would require additional funding or a redirection of current activities, neither of which seems advisable.

Finally, the evaluation team visited with graduate students (U.S. and foreign) at the participating universities, all of whom are a credit to their respective institutions. They have the potential for more than repaying the project's investment (See for example, Annex III).

C. Management

As already noted, the overall management structure and practices for this project were not well-designed at the project's inception. Furthermore, they have regressively moved to the lowest common denominator of contracting modes, away from focusing on strategy and results, and away from appropriate delegation of authority with commensurate responsibility. Confusion and disagreement regarding management responsibilities and authorities, by both contracting parties, had a stifling effect on the project, particularly in its first two years, clogging its channels of communication, exacerbating personal and institutional tensions, eroding trust and confidence, and pre-empting many individuals' time and attention away from substance. The style of management has been too often one of confrontation over the use of resources at the input-activity level. This is due, principally and collectively, to a sequence of acts of commission by APMT, a lack of interpersonal skills by some of the key players, and the inability of CID to play an effective role as intermediary. The existing style is not only one of management-by-inputs and sub-activities, but in addition has been, in effect, focussed on short-term (hands-on) management control. Work plans, for example, have degenerated into compendia of details massaged by all parties at levels far below what is appropriate while at organizational levels far too high to be meaningful. In this project, the work planning process has become perverted--it is neither "planning" in the legitimate sense of the word, nor does it work.

The evaluation team notes that while some aspects of this style are changing for the better, particularly with the inception of the new management structure of August 1984, serious problems still remain. For example, the vagueness of some contract terms, has resulted in misunderstandings regarding the purpose, use and differences between quarterly and annual reports, workplans, and technical publications. This has further resulted, in turn, in unapproved or piecemeal approval of work plans, quarterly reports full of short-term detail, inability to produce and distribute newsletters, progress and annual reports, and a general confusion of responsibility

in regard to technical publications. These are very unfortunate aspects of an otherwise outstanding project.

The "technical directions letters" used by AID in managing the project have, by and large, provided neither technical guidance or useful direction. Rather, they typify the lack of trust, sometimes sub-consciously, which has grown up between the APMT and its WMS-II sub-contractors. Where they could have been helpful, these letters have been hindered by being aimed at the input-activity level and have taken on a regulatory tone. As such, they contribute to an inappropriate and excessive "hands-on" style. One UPD noted that the APMT really wanted to be working in the universities.

The new WMS-II management plan of August 1984, had the virtue of establishing an Executive Project Director (EPD) who is located in CID rather than one of the sub-contractors. While it solved one problem, by re-orienting and clarifying some lines of communication and responsibility among the sub-contractors, between the sub-contractors and the contractor, and between the contractor and AID, what it did not do was change the overall mode and style of project management. Nor did it avert the imposition of the subsequent nefarious Amendment 11 concerning contract legalization of management-by-activity. We were unable to ascertain that the inter-agency Management Advisory Committee was playing any role in providing guidance to the APMT, particularly regarding strategizing, setting priorities, etc. The new management plan gave specific structure and direction to the role of the Contractor Project Management Team (CPMT) and the Joint Project Management Team (JPMT); however, its assigned role in strategizing and planning has not yet been activated.

On the positive side, the personality and capability of the EPD (appointed in November 1984 under the new management plan) have already clearly contributed to reducing some of the confrontations, frictions, acrimony and tensions evident in the project prior to that time, particularly on the university side. Similarly, the APMT (presumably in some part due to this exercise), is conscious of the need for change in the AID management style.

*Realization of separate elements
to create a holistic whole*

Brief

IV. THE CRITICAL ISSUES

The evaluation team perceives two major issues which transcend all other questions raised about the performance of this project. These issues are project management and synthesis itself. The two are not discrete, but they feed each other and are closely related. We are mindful of AID's enumeration of six specific issues and believe most are covered herein within a more useful context.

A. The Synthesis Issue

This issue involves:

- The absence of a fully developed conceptual framework for a systems approach.
- The low priority assigned to producing a conceptual framework;
- ? ● A division of labor approach, rather than a synthesis of major systems components, for training, technology transfer, and special studies activities; and
- Limited external networking, publications and pooling of professional expertise.

The synoptic statements above refer to plans and strategies for managing irrigation water, a limiting resource in agricultural production. While linked to other larger questions, such as land use, technology, and public health, it is important to develop strategies for managing water in a holistic sense which includes attention, for example, to drainage, rehabilitation, construction and water use efficiency. Synthesis involves developing strategies which include systematic consideration of all of these problems their interactions, and the several viable approaches to their resolution in different cultures.

In managing water, this means giving attention to the conveyance system which delivers water to farms in the quantity and time required to permit efficient agricultural production. It includes providing attention to the political, social, agronomic, engineering, and economic contexts and interrelationships which contribute to or impede improved agricultural production.

To date there has been inadequate strategizing and planning to provide the project, AID and the concerned client countries with complete and integrated packages. There is, subsequently, no rational framework for making strategic decisions for the development of programs and workplans for the remaining life of this project or for follow-on activities.

There needs to be further conceptual development in order to strategize for larger needs, long-range planning and programming; and how the components fit. Questions of priority and of how to put the parts together and proceed--i.e., the who, how, when, where, and why of it--should then be answered. Strategizing is a conscious attempt to allocate effectively and efficiently human effort and resources through time and changing conditions.

Synthesizing includes a strong physical element, i.e., "hard copy", including, but not limited to, publications, new training modules, course syllabi, films, methodologies for rapid reconnaissance and diagnosis, computer programs (software), etc. These should be parts of the end results of a work program developed in the strategizing mode.

In strategizing and planning for synthesis there may be need for a facilitator--not necessarily a water resource specialist, but someone with vision and ability to structure and capture the thoughts, skills, and experiences of research specialists and project managers.

Strategizing should be a periodic and outward looking process, performed at least bi-annually. It also should be regionalized, as well as globalized if this appears feasible and useful. Africa, for example, needs special attention as increases in its food production become more dependent on main systems or supplemental irrigation. The uplands of Asia present similar problems as yet unmet. Lessons learned from other regions should be integrated into the African strategies.

Important questions which should be addressed now are:

- How should synthesis and strategizing for it be accomplished;

- What are the gaps and priority needs in water management synthesis, now and in the foreseeable future; and
- What are the appropriate strategies for responding to these needs?

B. The Project Management Issue

Handwritten notes: "Model" and "Strategy" with arrows pointing to the text.

On the CID/university side, the management issue involves:

- Initial amorphousness of CID's style, and the changing nature of its role and function;
- The desire of the universities to manage operations, and to be judged by results ("freedom and responsibility");
- Inherent university difficulties and constraints in providing result-oriented and multidisciplinary managerial leadership;
- The inherent difficulties of management between two totally dissimilar structures (AID and CID/universities) and between themselves; and
- A willingness of the universities to divide up the work, but a concomitant reluctance to work cooperatively on developing coordinated strategies and work plans for core-funded activities.

On the AID side, the management issue involves:

- An out-dated concept of the AID project manager's role resulting in the design and imposition of ineffective management systems;
- Need for an updated view of the roles to be played by CID and the universities and redistribution of appropriate responsibilities and authorities;
- A malalignment of functions by levels, offices, and bureaus within agency headquarters; and
- Inadequate administrative support in AID.

C. APMT's Statement of Issues

The evaluation team was supplied with an "issues statement" at the initial orientation conducted within the agency in Washington, D.C. (See Annex IV). This statement of six issues was very helpful to the team and obviously did reflect the concerns of the AID project management team. The issues were referenced when interviewing WMS-II staff and administrative personnel from the university campuses and CID headquarters. At our request, the three UPDs and the EPD provided written responses to these issues (see Annexes V-VIII). These are an important and integral part of this report and should be carefully reviewed by the reader.

The team's observations and recommendations on the six AID issues are imbedded in the various sections of our report, as appropriate. We suspect that the perception of issues by the APMT would be different now, after the evaluation which, if so, already represents a move forward. Therefore, we have opted not to respond to the AID issues paper, per se.

As for the commentaries by the UPDs and EPD, which reflects their views after intense dialogue with the Evaluation Team, usually in the presence of the EPD and AID Project Manager, we note the wide general agreement among them on matters of both substance and administrative practice. This is a strength as it reflects a new solidarity among the producing elements of the project venture. This unity on the selected issues portends a capability for the universities and CID and the EPD to continue to move ahead on the major issue now facing them--synthesizing water management research results and practices--with sympathetic AID leadership and support. Were the reverse to pertain, i.e., were there little agreement on these issues among the universities, CID, and the EPD, the chances of success in synthesizing would be much lowered. The project sponsors are fortunate in this respect.

V.

SUMMARY OF CONCLUSIONS

A. Synthesis

At the end of WMS-I, a fully developed concept of what was meant by "water management synthesis" did not exist. In the first two years of WMS-II, synthesis was defined to mean three components of a systematic approach to water management, with the objective of increasing food production. The three components are: ① main system, ② small farmer managed systems, and ③ the interface between them (i.e., the command area). This trifurcation has resulted in a convenient division of labor regarding the activities to be pursued by each of the three WMS-II universities, but insofar as the team noted, it has not yet led to a fully defined and viable concept for systematizing knowledge, principles, and practices in water management. There are other components or areas of focus needed to complete the "model" (in addition to the three cited above), particularly in dealing with small and complementary irrigation systems such as appears to be a major feature in Africa. Examples include water harvesting, ground water development, and drainage.

A derivative of this lacunae which, among other things, is reflected in the absence of an operational strategy, is a lack of direction and momentum in training and technology transfer. Current activities are essentially a continuation of pre-existing and on-going programs without the benefit of an overall or integrating orientation. Thus, for example, networking is not yet conceived as a method for getting things accomplished or extending capabilities, and technology transfer has been limited to occasional workshops and intermittent dissemination of publications. The net (of collaborators and institutions) will be no more effective than the amount of work put into it (through the efforts of those universities involved in this project).

It is also worth noting that the efforts of CSU to improve the site-specific relevance and methodological usefulness of Diagnostic Analysis activities has been severely curtailed by denying them the use of funds for pre-planning and evaluation with host country cooperators.

?
There is also a continued use of non-descript terms for describing certain work-based on an apparent ~~fear of upsetting prior understandings.~~ For example, almost all UPDs agreed that a more accurate title for the project is "Water Management Systems", analogous somewhat to the "Farming Systems Research" approach. (The "synthesis" process must, nonetheless, continue.) Another example is the use of the term "lessons learned" to describe research activity in developing a methodology for the analysis of main system problems.

The project and its supporters should bear in mind that systems development is a dynamic and evolving process and that the results of synthesis should be multiple in nature. While strategizing to achieve synthesis should involve the total network, the implementation of work programs on campus or elsewhere is the responsibility of each university, i.e., subcontractor.

B. Management

The management styles used throughout this project to date are neither uniform in nature or always appropriate. There are several reasons for this, including (1) inadequate specification of terms, conditions and requirements within the initial contract, (2) historical factors from which the project was developed, and (3) various institutional and personal proclivities. The resulting management inconsistencies and absence of effective senior level intervention generated and intensified considerable confusion and acrimony. In the face of these conditions, it is remarkable that achievements have been as good as they were and is a tribute to most of the participants.

Recent actions have been taken to improve significantly this situation--i.e., the new management plan of August 1984 with provision for an Executive Project Director (EPD) and the restructuring of the Contractor Project Management Team (CPMT) and the Joint Project Management Team (JPMT). While these new management actions show strong evidence of early success, several major project issues have not yet been addressed, particularly strategizing and better work planning.

During the evaluation exercise it became evident that the new management plan had not yet reached for the more lofty objectives set out. For example, the team has noted no continuous or significant effort to further develop the concept of water management synthesis. This is due, in part, to continuous focus on input-activity management and on the priority given to AID missions technical assistance "buy-ins". An apparent weakness of the new plan is that although it smooths out the mechanics of handling daily operational details (particularly technical assistance) it does not contribute, at least by itself, to focusing efforts on research strategy and priorities, publications flow, technology transfer, etc. In fact, the new management mode continues to pre-empt (although in a non-contentious way) the time and energy of key players from non-administrative project activities.

The recent improvements within the new management mode are, in a significant measure, the result of the wisdom of those involved in the selection of the EPD. The position is necessary but not sufficient to assure optimal project success. While the evaluation team sees considerable alleviation of and reduction in open hostilities since the inception of the new management plan, it also sees considerable room for further conflict resolution over the remaining two years of the project. In fact, this is a key requirement for project extension.

CID

As AID and its partners proceed to review, adopt, and implement in whole or in part the recommendations made in this report, CID (and the participating universities) will need to consider and adopt changed stances on a number of functions. The roles to be played by CID in conceptualizing (strategizing) on the one hand, and in operations coordination on the other, may require changes to the approved Management Plan and to the processes that derive therefrom. At this point in time, given the potential changes pending in CID's overall corporate orientation, it is difficult for the evaluation team to project the specifics. It does appear, however, that a major role for CID in financial and periodic reporting

and contract administration can be projected forward with assurance. We are less sanguine that CID will be best suited to act as the organizer for subsequent work on strategizing in the area of WMS-II synthesis and follow-on activities. In any event, it is likely that the EPD will and should continue to play a facilitative and coordinating role in mobilizing for overseas technical assistance, and in strengthening the work in research and technology transfer, including networking, and publications coordination.

For the remainder of the current contract, the de facto practices which have been evolved by CID through the EPD will probably suffice, but will likely need adjustment to reflect decisions and actions taken by AID pursuant to this report. CID must, however, work out with its own Board of Trustees a resolution of the matter as to its mission and roles before AID can meaningfully consider the involvement of CID, if any, in follow-on water management project(s).

Universities

The evaluation team notes that, within the constraints of the management problems of this project and resource availabilities, the universities have made efforts to, and have been moderately successful in, expanding the pool of expertise in substantive areas. It is our conclusion, nonetheless, that more can and should be done and the additional costs absorbed perhaps by a product surcharge on overseas technical assistance billed to "user" missions. Greater attention needs to be given by the UPDs, with support from upper levels within their universities, to seeking out and creating opportunities for new levels and areas of intra-university collaboration and, at the same time, to involve additional entities, private and academic, from both within and outside of the existing structure. Note that if the changes we have recommended elsewhere, in terms of overall management style and structure, are not implemented, the chances of increased and expanded inter- and intra-university and private outreach are slim.

While it is recognized that the involved universities have made serious efforts to expand the use of external resources (with the constraints imposed and particularly in the case of technical assistance), the normal day-to-day tendencies of university life and culture tend to be directed inward. Continuous facilitative action by AID and the EPD is therefore required to maintain an outward-looking perspective.

These comments apply particularly to two foci of the project--the needs of Africa, and the further development of the synthesis concept. In the case of Africa, it would appear that AID's Africa Bureau, together with CID and the universities, should concert efforts to identify and engage appropriate entities and individuals to contribute to the strategy and operational work in Africa. On the other hand, the recommended renewed and higher-level attention to synthesis needs to incorporate such aspects of water management as water harvesting, ground water development, and drainage (and new water management practices) even though these subject areas are not necessarily to be the objects of action (through training, technical assistance, and special studies) in WMS-II. Again, expertise needed should be involved wherever located.

The evaluation team also notes that through AID efforts and university commitments to international development, a capability has been built over the years (from early 211(d) grants to the current Memoranda of Understanding (MOU) programs) which needs to be sustained. AID must exercise care in not exploiting this fact for its immediate programmatic needs to the extent of pushing the universities toward being pure response entities. AID must pay proper attention to keeping university capabilities relevant to the changing problems of developing countries but within the classical mission of land grant institutions.

AID

It is a major conclusion of the evaluation team that the AID project management style operates on a very conservative basis primarily concerned with economy and "hands-on" control of all activities. This style was obviously conditioned by early

implementation problems. In any event, it has resulted in a management reporting and control system that has become onerous in the extreme, and only casually related to project effectiveness as related to core-funded activities.

The tenor of communication between all parties to the contract still needs improvement but the problem will not be solved by continuing the use of unilaterally drafted AID Technical Direction Letters which tend to mix operational details with administrative minutiae, tie the hands of the EPD/UPDS, and are viewed as autocratic. Operational details must be the responsibility of the contractor and sub-contractors, working in concert with all of the affected participants--from the farmer, upward through the LDC development agencies, professional colleagues and collaborators, and AID. In addition, the APMT has not always consulted in a timely manner with the contractors on major issues of mutual concern. Delays in decision-making and inadequate decision recording (with infrequent follow-up) also contribute to the communications problem.

As a result, APMT time is devoted to many functions normally the responsibility of others (e.g., auditors, accountants, and contract officers), while the usual and expected management functions of design and redesign, approving annual revisions of life-of-the-project workplans, monitoring progress, and planning evaluations within a substantive and result-oriented context have not received adequate attention.

C. Efficiency and Performance

Efficiency is a term used to describe the comparative costs of the work, tasks or activities involved in producing a pre-determined result. In the case of the WMS-II project, there have been (as previously noted) two major issues. The first concerns the preoccupation by the AID management team with the cost of implementation at the lowest level, e.g., cost of airline tickets, number of participants on teams, time allocations, etc. The team's conclusions regarding the over-concentration on inputs and control were based partly on its considered judgement that these were not

cost-effective concerns for the harassed project management team, and in fact that these concerns have contributed to ineffectiveness in resource direction with subsequent inefficiencies in core-funded activities.

On the other hand, legitimate concern has been expressed as to the high cost to the project in terms of overhead and administration. In this area, the team agreed with the APMT that there was need for investigation and analysis. It is noted that overhead rates are set by the U.S. government and are a given factor. While the team did not have definitive data available, it appears that the overhead of the three universities and CID is not excessive when compared with available alternatives. In the team's opinion, the critical area to be analyzed involve administrative costs which include direct and indirect administrative costs, project management costs, program support costs, and "intellectual content management" costs. The latter categories represent the high transaction costs involved in dealing with three major universities through an intermediary contracting structure in the context of a complicated, multi-disciplinary and global approach.

The team concludes that under the circumstances these costs are neither extravagant or unnecessary. To the contrary, if "outreach" and networking activities are to increase, as recommended by the team, these transaction costs can be expected to increase, unless a different categorization of cost elements is adopted. In fact, some costs (e.g., some publications, communications regarding overseas assignments, and strategizing sessions) now charged to administration could more properly be considered as program costs. However, we are not prepared to recommend alternative structures for the future given the time constraints on this exercise.

As for the overseas technical assistance activities, including training, the team notes a high level of activity, strong and qualitative responses to mission requests, and generally a timely performance (despite a few complaints). If there has been any negative aspect, it has been insufficient attention to feeding back the overseas experiences into the synthesis process, perhaps

because no one felt responsible, as well as because of the absence of an effective publications dissemination process.

In the conduct of special studies, the work that has been done appears to be professional, technically sound, and potentially useful. There have been allegations that some special study proposals have been uninspiring; to the extent that that is true, we believe it to be because of the absence of the overall conception of where they were going, i.e., lack of strategy for synthesis. Further, we note in some instances that the APMT had expected detailed proposals before sufficient time and resources had been provided for exploratory development and the exploitation of opportunities when they appear. Similarly, the insistence on exclusive field research in special studies has limited the effective use of faculty and graduate students in the further development of synthesis. And, finally, special studies could be strengthened by a better structure for peer review and dissemination.

The function of technology transfer has hardly been approached, nor is the mechanism in place, including the necessary networking, in part because of AID's inability to date to sort out what is needed and, in part, due to the universities natural tendencies toward a proprietary bias. The evaluation team believes that urgent action is needed to determine, inter alia, the type of publications needed, the targeted audiences and to delegate responsibility for producing and dissemination to the maximum extent possible. Immediate steps should be taken to issue a periodic newsletter.

D. Effectiveness

In normal management parlance and in the context of the logical framework methodology used by AID, effectiveness relates to the success in achieving the project purpose, not to producing project outputs per se. The project purpose is:

To assist developing governments improve their institutional capabilities in the area of irrigation system development and operation, particularly with regard to better water management and a more efficient allocation, distribution and

use of water resources. (WMS-II Contract No. DAN-4127-C-00-2086-00, dated 9/30/82, Attachment A, P. 1).

In other words, an evaluation of effectiveness involves the validation of the project hypothesis or approach; that is, the expected results or outputs produced by the resources made available to project management will achieve the project purpose as measured in terms of some predetermined and objective End-of-Project-Status (EOPS) indicators. Since the project is at mid-term and there are no explicit and reasonable EOPS indicators provided in the Project Paper or contract, the approach to a preliminary assessment of effectiveness is limited to reviewing performance to date, critical problems encountered and proposed solutions, and projecting the effect of the work to be performed during the remaining project life. In any event, immediate action should be taken by the JMPT to develop reasonable and explicit EOPS indicators for WMS II.

E. Impact

Impact refers to the causal relationship between the achievement of the project purpose and the solution or amelioration of problems limiting more effective water management and increased agricultural production. Expected users of project outputs are government officials who are involved in the design, construction, operation and maintenance of irrigation systems, and donors. The ultimate end users or targeted beneficiaries are small farmers who rely on the results of WMS-II to improve agricultural production and the quality of rural life. There was little indirect and no direct information available to the team to assess whether appropriate capabilities have been created in the developing countries and are being used to solve water management problems.

While an evaluation of impact is premature at this stage, it is noted that very little information seems to be flowing to AID/Washington and to the subcontractors on the use of the services and products being provided, which is a necessary step in assessing impact. This is partially due to the fact that the bulk of the information so far available appears to come from AID missions, and not directly (that the evaluation team, at least,

has seen) from the host country agencies and farmers involved. The team believes that rather than glutting the system with quarterly activity reports, immediate attention must be given to systematizing a flow of feedback information for the purpose of program improvement. This will also be needed for an impact evaluation which should take place, at least on a preliminary basis, at the termination of WMS-II in 1987, especially if a follow-up project is to be sponsored which the team believes will be necessary.

F. Potential

The potential for increasing the world's food supply by improved irrigation development and management technology is very high, particularly in the uplands of Asia and in Africa. As the results of the WMS-II project are brought to bear on development programs at the regional and country levels, it will be increasingly important to link them to other key determinants such as the agronomic, economic, social and institutional, and infrastructural factors. This linking function is not the responsibility of the WMS-II project, per se, but these interrelationships must be kept in mind in the more expansive AID strategizing.

Given the potential contributions of improved water management, and also given the fact that AID has spent many millions of dollars over fifteen years or more to assist the sub-contracting universities and others to develop their capabilities to provide effective assistance in the developing countries, and given the commitment of the universities themselves to international development, it seems imperative for AID and the universities involved to sustain this viable relationship and to develop more effective instruments for utilizing these potentials.

VI. RECOMMENDATIONS

The following recommendations are action-oriented summaries based on the observations and conclusions discussed above. To translate these recommendations into reality will require a range of actions by all parties of interest. It should be recognized that, in some instances, these recommendations are included as a matter of record since, at least partially as a result of the evaluation exercise itself, some remedial actions have already been initiated.

A. Technical Content

It is recommended that:

Synthesis

1. The JPMT, in association with representatives from other relevant collaborating agencies, institutions, or individuals, immediately convene and initiate the process of strategizing to provide the basis for choosing priorities and developing output statements, output-oriented workplans and future programs. The workshop should be initiated with clear provision for a series of objectives, activities, and procedures, adequately funded over the period of time required for completion. This should be a periodic process, preferably preceding the yearly revision of workplans, but covering a multi-year or long-term time span. The strategy horizon should not be limited to the remaining contract period. While the principal outcome of this strategizing process would be the rationale for follow-on activities or a project(s), nonetheless this strategizing is called for under the present contract and new management plan.
2. For the remainder of the project life, current efforts under the cooperative group of activities should be continued--i.e., main systems, on-farm utilization of water, and their interface through the command control area concept. Also, the task force on special studies should be upgraded (to UPD level) and reinstated to continue efforts to create a strategy for, and further elaboration of, synthesis as a systems concept.

Publications

3. More priority and resources be allocated to publications (technical reports, books and professional papers, newsletters and brochures, video materials, computer software, etc.) including the printing of sufficient copies for distribution. A report on project progress for external audiences and dissemination of a newsletter should be given first priority.
4. The basic responsibility for review, approval, publishing and distribution be remanded to each of the three universities using their own standards. The university publications from this project must, however, include appropriate identification as publications of WMS-II, with appropriate numbering (e.g., by ISBN and WMS-II series), etc. If necessary, an AID disclaimer statement can be added to prevent undue delays and unnecessary approvals.
5. There be developed a system for distribution of project publications and documents nationally and internationally, to ensure this aspect of transfer takes place, especially to the collections in LDCs.

Networking

6. Joint action is needed for the further development of technology transfer activities, particularly concerning programmatic networks.

B. Management

Style and Organization

The most general and pervasive of our recommendations is that AID senior management adopt and direct the following precepts be used in the management of the WMS-II project (and any follow-on project(s)). Specifically, it is recommended that:

1. AID management decisions be taken at the highest level possible within the project framework (i.e., at the Goal, Purpose, and Output levels) and, where possible, in the collaborative mode usually associated with cooperative agreements.

This involves substantial changes in practice and appropriate delegations of authorities and responsibility for certain decision-making to CID or the EPD, the sub-contracting universities, the principal investigators (PIs), and others as appropriate, including field personnel. AID would continue its oversight and facilitative role.

2. The normal structure of the AID regional bureaus in performing their normal duties be utilized to handle overseas activities (technical assistance and/or training). That is, the S&T Bureau perform a guidance and facilitative role rather than, as now, a backstopping and administrative one.
3. The divided responsibilities for AID management and oversight, particularly in S&T, be eliminated by assigning all APMT staff directly to S&T/Agriculture.

Joint Efforts Required

Subsequent to agreement between AID, CID and the sub-contracting universities of a broad set of understandings, it is recommended that:

4. AID organize, initiate, provide the leadership for, and make a substantive contribution to the strategizing process for water management synthesis.
5. CID and its sub-contractors involve the APMT as early as possible in major programming initiatives and changes, while, at the same time, making more concerted efforts for coordination and joint activities in core-funded programs leading to synthesis.
6. That the JMPT adopt a more effective system of communication and recording of decisions.

Required Immediate Changes

7. To implement the above changes, where necessary it is recommended that the contract and/or other appropriate instruments be amended to reflect the concept of project management-by-results and to ensure contractor responsibility for both day-to-day implementation activities and expected results. Specific actions include:

- Rescind Amendment 11 to the contract;
- Change the Quarterly Report mechanism to provide for financial reporting only;
- Change annual work planning to cover the remaining life-of-the-project, with a result and event orientation, including progress indicators;
- Redefine "Annual Report" to contain information on progress in producing approved outputs;
- Eliminate pre- and subsequent approvals of activities included in an approved work plan;
- Establish a feedback system on field operations to improve project management and contribute to synthesis;
- Establish explicit EOPS indicators for WMS-II; and
- Redefine and separate administrative costs to accurately display transaction and program support costs, required in a complicated and innovative project of this type.

Buy-Ins

8. Given the fact that the technical assistance "buy-in" ceiling will soon be reached, the current AID uncertainty about its authorities to be exempt from, or to reduce, competition for technical assistance activities, and, in consideration of the team's recommendation regarding any follow-on activities, it is recommended that the technical assistance ("buy-in") portion of WMS-II be committed as soon as possible (i.e., on current demand), so that the APMT can devote more time to the design of a follow-on project to provide for future irrigation management aid to LDCs.

C. Africa Requirements

It is recommended that to the extent the project expands to meet the needs of African water management and irrigation development, attempts be

made to reallocate and expand the human resources available within the project to meet those needs. The principal burden, however, will be on the contracting agency (AID) to develop means outside, parallel and/or complementary to this project, to provide the quantity and quality of expertise projected to be needed. This should involve an increase in U.S. and international graduate students. This recommendation for enhancement of the African expertise should include building new linkages to African and other international institutions and continued support for appropriate and relevant regional training centers.

D. Follow-On Activities or Project(s)

In regard to the future of water management technology development as a follow-on to WMS-II activity, it is recommended that:

1. The technical assistance to missions function be established by a task order type contract(s).
2. Regardless of the contracting mode selected (e.g., predominant capability, competitive bid, or other) a parallel cooperative agreement is essential for continuity in core activities. This linkage is necessary to establish optimum systems development and to achieve water management synthesis in the LDCs.
3. For any follow-on activity, the scope of work should be enlarged to include attention to ground water development, water harvesting, and drainage and salinity issues, and to broaden social science inquiries to include, for example, the sociology of communications, conflict resolution and financial systems to cover maintenance and operations of water management structures, etc.

E. Need for Continuity and Understanding

The evaluation team wishes to reemphasize that the traditional land grant university links between teaching, research, and extension (i.e., training, special studies, and technical assistance in WMS parlance) should be maintained under whatever cooperative and contractual modes are established. Water management must continue to be given high

priority in international development; there is more work to be done over the next decade than in the past decade. Further, the synthesizing function of water management must not be limited by ceilings and the work load required for technical assistance "buy-ins" by AID missions. And, finally, that the investment in water management technology established through past university strengthening programs must be maintained. In short, we recommend that this project, redesigned as necessary, be extended to cover its full 10 year span as originally planned.

ANNEX I
STATEMENT OF WORK

Project Review Team
Mid-Term External Evaluation

I. Project: Water Management Synthesis II. (WMS II)

1. Project No.: 936-4127
2. Contract No.: DAN-4127-C-00-2086-00
3. Life of Project Funding: \$20 million
4. Project Duration: Five years (FY 1982-87)
5. AID Project Manager: Worth Fitzgerald, S&T/AGR/RNR
6. Contractor: Consortium for International Development (CID)

Principal Contact (Contract Matters): John Wooten, Deputy Executive Director, CID

Principal Contact (Program): Dr. Richard McConnen, Executive Project Director

Principal Entities and Contacts:

- Utah State University, Dr. Jack Keller, University Project Director
- Colorado State University, Dr. Wayne Clyma, University Project Director
- Cornell University, Dr. E. Walter Coward, University Project Director

7. Project Status: AID/W (core) funding obligations are on schedule. The level of buy-ins (add-ons) from Missions is above expectations. Generally, the project has a good reputation for service among the Missions it has assisted, and it is doing some interesting research. However, it has had numerous management problems, both at the Contractor level, and in Contractor-AID relations. These have had a negative impact on Project planning, led to questions about the financial management of the Project, and consumed a great deal of the limited time and energy of Project management on both the Contractor and AID sides.

II. Purpose of Evaluation

Both the Project Paper and the Contract under which it is being implemented call for an evaluation during year three, to gauge project performance to date, and to make recommendations for improvements over its remaining life. The purpose of the evaluation is therefore to:

1. Assess the progress being made toward achieving the project's stated objectives;
2. Ascertain how well the project outputs and objectives (contained in the Project Paper and Contract) reflect the priority needs of the Agency in the irrigation water management area;

3. Evaluate the project's operational effectiveness, examining both its organizational structure and its functioning on both the Contractor and AID side;
4. Recommend steps to improve project performance, including changes in organizational structure, management arrangements, operating procedures and/or adjustments in program focus, both long and short term;
5. Suggest lessons useful for guiding the development of a follow-on project.

III. Methodology of Evaluation

1. The team should develop a set of criteria based on the major questions asked in this Scope of Work, the Project Paper and Contract, and discussions with AID/Washington Project Management.
2. The sources of information that the team will rely on are primarily as follows:
 - a. Responses to questionnaires sent to Missions, supplemented by telephone interviews with key Mission officials as deemed necessary by the Team. This is the most important single source of data for the evaluation.
 - b. Documentation available in AID/Washington, and at the Contractor Universities, including the Project Paper, the Contract, WMS Reports, Annual Workplans, Quarterly Progress Reports, and Correspondence files.
 - c. Interviews during site visits to AID/Washington, the three major implementing university campuses, and CID headquarters.

IV. Major Questions

Following is a list of questions identifying the main issues which the evaluation team should address. This list is not intended to impose excessive rigidity on either the approach to be followed or the way in which the specific issues examined are framed. Where appropriate, the team should address differences in performance, both strengths and weaknesses, among the three major implementing universities..

A. Progress and Performance

1. Is the overall purpose of the project being fulfilled? Are the outputs called for in the Project Paper and the Contract being achieved relative to the following:
 - a. Technical assistance to Missions and host countries;
 - b. Training of host-country technicians and officials
 - c. Synthesis of lessons learned and the transfer of water management technology;

- d. Development of new water management practices, methodologies and knowledge, through action research and special studies;
 - e. Expanding the pool of available technical expertise in the water management area?
2. How do Project outputs compare with the estimated outputs shown in Table 1 of the Project Paper? Recognizing that the Project was intended to be somewhat flexible in this regard, assess the reasonableness of shifts that have occurred in actual outputs compared to the original estimates.
 3. Has the Project been useful to the Missions, and are its services in demand by them? Has the Project been able to supply the quantity and quality of services demanded?
 4. Based on a review of mission cables and other documentation, what is the quality of Project outputs in each category (Technical Assistance, Training/Technology Transfer, and Special Studies)? Which category of outputs, if any, have been most effective in contributing to Project purpose/goal achievement?
 5. Has the Project developed a coherent, integrated program focused on the key issues regarding improvement of irrigation water management? What are the Project's research priorities, and how well is it addressing them?
 6. Has the Project been successful in integrating both servicing Missions' more immediate field-support requirements, and achieving the longer term research and development (Science and Technology) objectives of the Agency in the irrigation water management area? Is there a synergistic relationship among these broad components of the Project, or is the relationship inherently neutral or contradictory, i.e. could or should separate projects address these areas equally well?
 7. Have the Missions noted any progress in their countries toward achieving the sector goal or sub-goal, and overall purpose, of the Project as a result of assistance provided by this Project (e.g. more water being used efficiently on farms, host country programs being conducted more effectively, etc.)?

B. Project Structure and Management

1. Is the present AID management mode, in which S&T manages the Project in collaboration with the Asia Bureau (and two Offices within S&T share the management responsibilities) effective? What changes or improvements, if any, would the team recommend?

2. Is the present structure of the Project on the Contractor side, in which three Universities, under CID subcontracts, are responsible for project implementation, an effective and cost-efficient structure?
 - a. Is the revised Management Plan (included in the Contract) governing the Project implementation process working well?
 - b. Are satisfactory and mutually understood procedures for carrying out the Project being employed?
 - c. What changes, if any, would the team recommend in the Contractor's structure and procedures for the remainder of the Project?
3. Has there been effective communication, cooperation, and collaboration between the Contractor and AID Project Management?
 - a. Is the division of responsibility between AID Project management and Contractor management clear and appropriate?
 - b. Has the procedure for developing and operating under Annual Workplans been efficient and practical?
 - c. How effectively has the Project (AID and Contractor) responded to operational and management problems?
 - d. Is the reporting format (Quarterly and Annual Reports) developed for the Project adequate? Has sufficient information been provided by the Contractor to document and assess performance?
 - e. On all of the above questions, what recommendations would the team make for improvement?

C. Staffing and Technical Resources

1. Given the diverse and intermittent nature of many of the technical resource needs, have the Universities established and maintained an appropriate mix of regular (long-term) and project-related (non-tenured) staff?
2. Is the ratio of administrative and program support staff (in terms of person months) to technical staff appropriate and cost-effective?
3. Is the Project adequately increasing the quality and quantity of U.S. and LDC expertise in irrigation water management? What is being done to achieve this goal?

4. Are the incentives and procedures for accessing the following sources of technical personnel effective and efficient?

- Other departments/sections of the three participating universities;
- Other CID institutions;
- Non-CID universities and personnel;
- Private firms;
- Others (individuals, LDC personnel, etc.)

(Ascertain the approximate person months of services obtained from these sources in relation to person months of core individuals).

5. Is the division of work among the different universities made a) equitably, and b) in a manner consistent with Mission needs?

6. For all of the above questions, make recommendations, if any, for improvements.

D. Financial Resources and Arrangements, and Costs

1. Has the proportion of funds allocated among the major activity categories (technical assistance, training, technology transfer, and special studies) been the proper one, given the nature and magnitude of the problems and needs being addressed? Should this allocation be different over the Project's remaining life?

2. Is the practice of using Mission "buy-ins" to fund services provided directly to Missions a viable one? Has it proven easy to implement?

3. What are the total real costs of providing project services on a person-month basis? Are these costs reasonable? What measures, if any, could be taken by AID, the Contractor, or both to improve the cost-effectiveness of the Project?

E. Recommendations for the Future

1. Based on its findings, the team should make appropriate recommendations to improve the Project's performance and effectiveness during its remaining life, in the areas outlined above.

2. Based on its findings, the Team should also make broad recommendations to AID on lessons to be heeded in designing follow-on activities beyond WMS II. Lessons could fall in the areas of geographical focus, mixture of technical assistance, training, technology transfer, and research, additional areas which should be added, project structure and mode of operation, and monitoring and evaluation modalities.

V. Implementation Plan and Schedule

As noted above, the evaluation will be based primarily upon a review of the results of a questionnaire recently sent to Missions, telephone interviews with Mission officers, various background documents and reports, and interviews with key personnel on the AID and Contractor sides. No visits to Missions are planned, since the Team could not possibly visit even a sample of the 25 or so serviced during the first two and half years of the project. In addition, given the nature of the Project's work, there would be little in the way of tangible results to explore. Nevertheless the Team is encouraged to telephone and/or cable Mission personnel for further data that it needs.

The plan calls for the team to visit AID/Washington, the three major implementing universities, and CID headquarters, before returning to Washington for final debriefing and for preparation and presentation of their report. The following represents the proposed schedule, though it is subject to adjustment as necessary:

<u>Visit Site</u>	<u>Dates</u>
Washington, D.C.	May 13-17 (5 working days)
Fort Collins, CO (CSU)	May 21-22 (2 working days)
Logan, UT (USU)	May 23-24 (2 working days)
Break for Texas A&M Conference	May 26-30
Tucson, AZ (CID)	May 31-June 1 (2 days)
Ithaca, NY (CU)	June 3-4 (2 working days)
Washington, D.C.	June 5-13 (7 working days)

VI. Team Composition

The Team should collectively possess the background and expertise to address both the technical dimensions of the Project and its administrative/management aspects. Thus, a four-person Team is proposed, consisting of two members who are experienced in irrigation/water management (one with a technical/engineering background, and the other with sociological/institutional expertise); a management specialist; and a person knowledgeable about AID's needs, its structure, and operational procedures.

VII. Other Participants

1. Worth Fitzgerald, AID/S&T/AGR/RNR
2. Charles Antholt, AID/ASIA/TR/ARD
3. Eric Chetwynd, AID/S&T/RD/RRD
4. Douglas Merrey, S&T/RD/RRD
5. Tej Gill, S&T/AGR/RNR
6. Mark Svendsen, ASIA/TR/ARD
7. Representatives from CID, CSU, USU, CU

VIII. A.I.D. Illustrative Budget

1. Daily wages - Contractor	
110 days @ \$225/day X 2.5 (IQC Multiplier)	\$61,875
2. Travel and Per Diem	12,000
3. Other Costs (typing, reproduction, communication)	<u>3,000</u>
	\$76,875

IX. Funding Source and Contracting Arrangement

WMS II funds will be used to cover the cost of the evaluation. However, rather than securing these services through the Project itself, funds have been withheld and will be used to contract for them directly, through an IQC.

X. Reporting Requirements

1. The Report will contain the following sections:
 - a. Executive Summary (two pages, single spaced, including a statement of the purpose of both the Project and of the evaluation itself), using the format of the attached "Guidelines for Developing an Executive Summary";
 - b. Basic Project Identification Data Facesheet (see attached);
 - c. Statement of Conclusions (short and succinct with topics identified by subheadings) and recommendations (corresponding to conclusions, and worded to specify who, or which entity, should take the recommended action);
 - d. Body of report (which includes the information on which the conclusions and recommendations are based);
 - e. Appendices as necessary (including, minimally, the Evaluation Scope of Work and a description of the methodology used).

2. A draft of the report will be submitted three days before the debriefing for AID/Washington personnel, which will be scheduled during the final week of the evaluation in AID/Washington. Twenty (20) copies of the final version of the report will be submitted within a week of the end of the evaluation period. The team leader will be responsible for completion of the report in final form.

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ANNEX II

COMPLETION OF ACTIVITIES THROUGH FY 1984 1

Item	Cummulative Person Months Through FY 84	Total Person Months Planned	Percent Completed
A. Training			
1. Diagnostic Analysis	7	12	58
2. New Courses	1	5	20
3. Evaluations	1	10	10
4. Trainer courses	3	8	38
5. Audio visual modules	1	10	10
6. Formal training	3	8	38
7. Other Training	3	16	19
B. Technical Assistance			
1. Roster	0*	15*	0
2. Assignments	39	75	52
3. Evaluations	2	60	3
C. Special Studies			
1. Diagnostic Analysis	1	10	10
2. Project Analysis	2	10	20
3. Monitoring	0	20	0
4. Research Studies	9	10	90
D. Technology Transfer			
1. Network	4*	12*	33
2. Newsletter	1	15	7
3. Seminars	3	8	38
4. Guides/Handbooks	3	10	30
5. Strategy Papers	5	8	63
6. Library	3*	10*	30

* Person months allocated to a single event.

Supplied by EPD 6/12/85.

¹ At the end of FY 84 the project was two years through the five years life of the project. On the average, activities should be 40 percent completed, perhaps less where start-up time is a consideration.

ANNEX III

AN EXAMPLE OF GRADUATE STUDENT ACTIVITY IN WMS II AND ITS SPREAD EFFECTS

Ed Martin and Bob Yoder, graduate students in agricultural economics and agricultural engineering, respectively, were interviewed by Quenemoen and Messerschmidt at Cornell University. Martin and Yoder worked together as a team in Nepal, in 1982-1983, gathering data on irrigation water management for their dissertations. Their fieldwork was supported from various non-WMS II funding sources. Their graduate studies have proceeded under the guidance of WMS II core faculty at Cornell. Completion of the dissertations, after return from the field, has been funded, mostly, from WMS II funds. Martin and Yoder are two of nine students expected to complete their dissertations on irrigation-related topics at Cornell University in 1985.

Both students gathered field data from approximately 20 small farmer operated irrigation systems in the middle hills and valleys of Nepal. Some of the systems studied date back several hundred years, and were built and have been maintained by the farmers for the most part without outside technical assistance. Martin's dissertation analyzes management intensity of these systems related to amounts of available water, the complexity and amount of mobilization required to build systems and the water rights and systems of allocation among farmers. Yoder's dissertation analyzes system performance with respect to efficiency and equity of distribution along each watercourse, from head to tail, throughout each season.

While at Cornell, Yoder and Martin participated in the course entitled "Technical and Socio-Economic Aspects of Irrigation" which is team taught by Cornell WMS II core faculty (it dates to 1974). They appear to have excellent understanding of the complex social and technical inter-relationships involved in irrigation planning and management, and have already begun to make important contributions to the corpus of irrigation management knowledge internationally. Yoder and Martin reflect favorably on the quality of irrigation management training at Cornell and, by extension, the work of the WMS II project through the AID/CID contract.

The following "spread effects", reflecting Martin's and Yoder's work, and that of Cornell and WMS II generally, should be noted:

A. In Nepal:

- In Fall 1983, both Yoder and Martin were key participants in the organizational operation of the Water Management Workshop in Kathmandu, supported jointly by WMS II and USAID/Nepal. This workshop involved irrigation specialists and others from various ministries, departments and agencies of the Nepal government, as well as representatives of other Nepal government and donor-assisted agricultural and rural development projects in Nepal. Forty participants were expected; 120 showed up.
- In early 1985, Yoder worked with the Diagnostic Analysis training team in Nepal under the leadership, and in collaboration with, Colorado State University, and in association with the Government of Nepal (esp. Irrigation and Agricultural Departments) and USAID/Nepal.
- In 1985, Yoder will take a position setting up and running a satellite office of the International Irrigation Management Institute (IIMI) in Nepal. He expects to work closely with other organizations and agencies in Nepal, including the new International Centre for Integrated Mountain Development (ICIMOD).
- In 1984, Mr. Ujwal Pradhan, a former field research assistant to Yoder and Martin in Nepal, began graduate studies in rural sociology/irrigation at Cornell University, under the financial auspices of the Agricultural Development Council and the university. Mr. Pradhan is working closely with WMS II core faculty, and expects to return to Nepal following completion of his Ph.D dissertation at Cornell.

More broadly, these other spread effects should be noted at the international and national (e.g., Nepal) levels, and among USAID and other development donor agencies.

- Heightened awareness of the importance of small scale irrigation systems and issues, especially under upland/mountain conditions.
- Heightened awareness and interest in farmer involvement in irrigation management.

These sorts of spread effects are reflective of the wide net of activities and resources available at the participating institutions in the WMS II project, especially of the Cornell involvement. It should not be assumed that by focusing on two graduate students, that they alone are responsible--their examples are only illustrative of Cornell, CID, and WMS II project activities and outputs.

ANNEX IV

WATER MANAGEMENT SYNTHESIS II Midterm Evaluation May-June 1985

Evaluation of Issues

The purpose of the issue statements provided herein by AID, in addition to and within the context of a review of progress to date, is to guide the Evaluation Team to those subjects of most concern to AID and the Contractor (Consortium for International Development), and to which the team's attention is directed. The final team report is expected to include appropriate findings, conclusions, and recommendations related to these issues as well as those that may develop during the exercise. Appropriate documentation and briefings relevant to these issues will be provided to the team by AID/W, CID and by the participating institutions.

Issue Statements

1. Performance to date indicates that, with few exceptions, technical assistance in response to AID field mission requests is provided from within the participatory universities and, in some cases, from a narrow staff core therein. In view of concerns expressed with the timeliness and, to a lesser extent, the quality of Contractor responses, and the need to expand the U.S. core identified with the systems approach to water management, should more definitive efforts be made to expand the existing base, both within the participating universities as well as other interested institutions within and outside of CID?
2. Since the effective date of the Contract (September 30, 1982), out of total estimated expenditures (as of 9/30/85) of \$11.186 million, administrative costs incurred total \$2.519 million, and overhead costs amount to \$3.360 million or 52% of the direct costs. The question arises as to whether a more cost effective approach is possible, including (but not limited to) the advantages and disadvantages of any changes in the current Management Plan.
3. There is an apparent lack of sufficient progress in adequately identifying training needs and developing a program to meet these needs. Efforts to date have been narrow and limited, both in content and inter-institutional participation. In addition, field training in the diagnostic analysis of irrigations systems indicates problems concerning feedback and readjustment of program content to meet field requirements, and with the effectiveness of teaching techniques.
4. The "technology transfer" (university-initiated) activities were originally anticipated to be an important mechanism for "networking" and information dissemination, particularly regarding an informations system for participants in the network. The results to date appear to fall far short of those desired.
5. Despite the use of the contract mechanism, it is obvious that a collaborative relationship between AID, CID and the participating universities must exist for successful achievement of the project

purpose. In the case of Colorado State University, a number of problems exist from AID's standpoint which are symptomatic of an emerging impediment to the synergy hoped for by AID. They include:

- o The resource base being touched within CSU is narrow and at intermediate levels. Access to the total resource base of CSU (i.e., ag economics, engineering, agronomy, sociology) appears to be unnecessarily limited in terms of quantity and quality.
- o University-initiated proposals and activities are often vague, without sufficient substantive content, and confined to planning, necessitating AID intervention, all of which results in unnecessary delays, misunderstandings, and acrimony.
- o CSU is unresponsive or negative to AID leadership and guidance, relying on its own narrow interpretation of Contract terms.

6. Until recently, at least, CID leadership has been playing a passive role in strategizing, stimulating, coordinating and guiding inter-university cooperation. This mode has contributed to some of the following problems:

- o lack of follow-up on JPMT decisions,
- o inadequate reporting,
- o slowness in preparing adequate annual work plans for joint approval,
- o absence of effective inter-university participation on field teams, special studies, training programs, etc.
- o slow turn-around time on assignment of university staff to meet Mission requests,
- o apparent lack of standards on content and quality of materials prepared by the participating universities,
- o absence of an adequate strategy for research, i.e., "special studies."


CONSORTIUM FOR INTERNATIONAL DEVELOPMENT

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M E M O R A N D U M

June 11, 1985

TO: Dr. Charles Busch
 Team Leader
 WMS II Mid-Term Evaluation Team

FROM: R. J. McConnen *Dick M'C*
 Project Director
 WMS II

SUBJECT: Response on Behalf of CID to Issue Statements Provided
 by AID/Washington to the Evaluation Team

As you will recall, I discussed the AID Issue Statements with the Team on the 17th of May, 1985 in Washington, D.C. Also, the Team has been provided with a typed copy of the notes I had made in preparation for that discussion. Only two points made during the discussion are repeated herein, but we regard all of the points as both relevant and important. Two points are repeated for emphasis: (1) no representative of CID was involved in the writing of the Issue Statements, and the issues stated do not include all of the "subjects of most concern to...the Contractor (Consortium for International Development)" and (2) while the direct or implied issues in the Statements are recognized as being relevant, we believe that in some cases the manner in which the issues are presented is distorted and unlikely to contribute to the resolution of the underlying problems.

I will respond to each of the six issues listed in the Statements as a representative of CID. What follows is not an attempt to respond in detail to the issues, as I think the relevant details have been adequately dealt with during your visits to the WMS II Universities. My comments reflect the conclusions on these issues reached by the CID Executive Office.

1. Source of Technical Expertise and Expansion of the U.S. Core. The characterization in the Issue Statements with regard to Technical Expertise is reasonably accurate for the first year of the project, less accurate for the second year and has been corrected during the third year. We intend for this progression to continue. The U.S. core of such technical experts is being expanded. We feel that the issue, as stated, is inappropriate because AID apparently has not taken into account the trade-offs which exist between (a) staffing teams with highly qualified experts

and (b) expanding the U.S. base. This has, in some cases, led to decisions which have slowed progress in the expansion of the U.S. base. WMS II Contractor leadership has gained fuller appreciation of the fact that the quality of Contractor response depends not only on quality of each member of the team, but also on the way in which that team interacts and the leadership provided by the team leader. The WMS II CPMT intends to pay greater attention to team composition and leadership in the future.

2. Administration and Overhead Costs. CID shares AID's concern about finding more cost-effective approaches to administration and the provision of services which are provided via indirect costs. This effort needs to be continued. However, the AID management needs to have a greater understanding that (a) WMS II personnel perform many functions under the category of administration costs which are vital to the accomplishment of project objectives (e.g., networking, T.A. support, planning, etc.) and (b) AID directives and requests are responsible for a portion of administration costs which Contractor personnel do not believe are productive in terms of achieving overall project objectives.
3. Training Program. As stated to the Team earlier, WMS II does not believe we know enough about irrigation in each of the developing countries to develop a single training program. As a result, we have conducted a series of training programs. We agree with AID that improvements in training programs should be made. We believe that from the visits of the Evaluation Team to the WMS II participating Universities, you will have seen that we are actively (and we think successfully) trying to do just that. We do not agree that the efforts to date show "lack of sufficient progress." We believe, and formal evaluations have shown, that WMS II has developed effective training programs. Our objective is to continue to improve those programs.
4. Networking. We agree with AID that the networking results to date fall short of those we would like to achieve. We would add, however, that given (a) the high transaction costs of most networking activities, (b) AID's continued urging to use experienced technical personnel on TA teams and (c) the significant risks of failure with networking efforts, we have proceeded in a prudent manner. We need and want to do more networking; however, networking is not a free good. Increased attention will be given to networking.
5. Colorado State University. This issue has been discussed at length with the WMS II personnel and administration at CSU. We will not deal with them here except to say that it does not appear that AID has consistently dealt with CSU-based problems in an evenhanded way. Because of the

contentious nature of the relationship between selected individuals at CSU and AID/W, every effort must be made to generate reproduceable information about issues between the two parties. CID must play a much more active role in such situations.

Director Bertrand of AID and Executive Director Fischer of CID have met with key CSU administrators on WMS II at CSU. The CSU administrators have agreed that, if they are made aware of any problems with regard to inadequate achievement of project objectives, they have the responsibility to take appropriate action to ensure that project objectives are achieved in a satisfactory way. As is the case for all participating Universities, AID and CID have the responsibility to provide the appropriate University administrators with any information about failure to achieve project objectives and, in turn, the University administrators have the responsibility to evaluate the information and take appropriate action.

6. CID. There is agreement on the part of the CID Executive Office that the leadership provided to WMS II has been less active than preferred. While part of the explanation can be found in the non-assertive role taken by CID, part of the explanation must also be attributed to the fact that AID has clearly wanted to deal directly with the Universities on many issues and, in the process, bypassed CID. In addition, actions by AID often tended to exacerbate already existing differences among the Universities. Both CID and AID management should consciously act in ways which will enhance inter-University cooperation and establish a basis for dealing with AID's various units in a consistent manner. Because of the intensity of competitiveness which exists between some Universities, management personnel should ask the question, "How will my proposed action influence inter-university cooperation?". With a more assertive leadership effort by CID (an assertiveness which will still be well within the bounds consistent with the strong sense of independence appropriately espoused by both Universities and individual faculty members) and with a concerted effort by both CID and AID management personnel to encourage the resolution of differences between Universities, productive inter-university cooperation can be increased. However, there are other significant aspects of the problems listed under this Issue which need to be recognized.
 - a. JPMT Decisions: The principal reason for inadequate follow-up on JPMT decisions has been that too many decisions have not been properly recorded and, in the process, the differences existing between AID and WMS II have not been resolved. As a result, what is regarded as appropriate follow-up by one party has been regarded by another party as action which was contrary

to a JPMT decision. These differences have not always been resolved, and even when resolved, have too often not been resolved in an atmosphere of trust.

- b. Reporting: CID agrees that it should provide the reports needed for oversight and the management needed to achieve the objectives of the project. What needs to be resolved in a collaborative fashion is the purpose and appropriate content of such reports. CID feels the principal problem is primarily one of inappropriate reports; and if the reporting is inadequate, it is inadequate in terms of outputs and extravagant in terms of inputs.
- c. Workplan: CID agrees that the process of preparing the annual workplan has taken far too long. The number of iterations on the FY 1985 Workplan has reached 6 or 7, and WMS II still does not have formal approval of the Workplan. This situation must be corrected, but both AID and WMS II must accept the responsibility for the long delays and the heavy work burden which has been associated with this process in the past.
- d. Inter-University Participation: The record in the immediate past does not support the absence of effective inter-university participation in the last few years. We feel that anyone familiar with the difficulties of obtaining inter-university participation in activities of the type undertaken in WMS II could not help but be impressed by the record.
- e. Slow Turn-Around: We would like to see turn-around time decreased, but we realize that the very nature and purpose of Universities means that they cannot always respond with the same speed as a large (and expensive) private consulting firm. Given the nature of the University environment, WMS II's response time has been good because of the commitment and initiative of the UPDs, their assistants and support staff. This response time could be shortened if AID's planning and implementation practices permitted WMS II a better basis for anticipating needs. In the immediate past, there have been several cases where WMS II has gone to considerable effort to assemble TA teams on the basis of informal requests, and then been told at the last moment that the Mission has engaged a private consulting firm. Such actions within AID hardly encourages WMS II to use already burdened people to exert considerable effort to anticipate Mission needs so that we can lessen turn-around time.
- f. Quality of Materials: CID would like to see the quality of all project materials improved. However, such improvements will be expensive, and we feel that

the quality of most project materials has been high and ranges from acceptable to excellent. CID can counsel Universities, but not dictate quality standards. In addition, there is a very real trade-off between quality and timeliness of materials.

9. Research Strategy: CID agrees that WMS II would benefit from a more adequate strategy for research. It is apparent that the results of project activities have reached the stage where a greater effort to develop a more explicit research strategy could yield significant results. In addition, the CPMT realizes that we must develop a strategic approach to our work in Africa. We are in the process of developing a process which will help us achieve that objective.

The subjects raised by AID's Issue Statements are important, and they reflect problems associated with the WMS II project which must be solved if the project is to reach its full potential. This is a good project. It can be a better project. CID looks forward to working with AID in a collaborative manner so that the full potential of WMS II will be realized.

/rlb



Cornell University Irrigation Studies Group

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June 7, 1985

Mr. Charles Busch
 WMS II Evaluation Team
 c/o R. McConnen
 Executive Project Director
 Consortium for International Development
 5151 E. Broadway
 Tucson, AZ 85711

Dear Charlie:

I understand that you have requested that each of the universities provide a written response to the memo prepared by AID/W and submitted to your Evaluation Team as part of the midterm evaluation exercise. Since most of our ideas were communicated during the period that you spent on the Cornell campus, I don't think there will be any surprises in the following.

AID/W has continued to be concerned with the so-called administrative costs associated with the project--a concern that we share, since there is a direct relationship between the resources that we must spend on these activities and the resources available to perform "substantive" activities. The matter of overhead should, I believe, not receive further consideration. As you know quite well, we at the project level cannot influence this matter at Cornell. Decisions regarding overhead rates are made at a very different level in the system, moreover, they are developed with U.S. Government input. WMS-II has provided information to AID/W regarding our administrative costs and have shown how these costs are separated into several components, including support for specific project activities and the transaction costs of inter-university collaboration. I would like to see AID/W take a more affirmative approach to this matter and help to explain to others, if necessary, the "administrative" costs associated with a project of this type. Your team made a very useful point---how do these costs compare with the administrative costs of other projects?

Regarding the training issue, we at Cornell have been little involved in this component of the project largely because we are reluctant to engage in training activities until we believe we have sufficient experience and understanding about the topic to "train" others. We are now moving into some training activities in the context of Pakistan. My impression is that the training activities are more positive than the AID/W memo suggests. CSU, which has had the most explicit training activity---the so-called Diagnostic Analysis Training, has over the years of the project exhibited a

willingness to innovate and modify the format of that training to meet various country needs---as in Nepal and Sri Lanka. USU has used the project, in both direct and indirect ways, to significantly strengthen its International Irrigation Center---its vehicle for providing training for irrigation development.

There are a number of items raised in the last point of their memo on which I would like to comment. On several of the points we have a very different view. The project's response to Mission requests has generally been timely, and by most accounts, of high quality---their suggestion to the contrary is surprising. Where delays have occurred they sometimes have rejected our concern with mobilizing the best staff---which may require longer planning periods. On the matter of inter-university participation in activities, the record shows that all three universities have used a broad network of professionals in the technical assistance and technology transfer activities (see Appendix). We have done less of this in our special study activities, but this was a deliberate choice by the universities. We have operated on the principle that while research plans are presented and discussed in the CPMT forum; once approved they are implemented by the specific university responsible for the activity. We think that trying to form inter-university research teams for research implementation would be unwieldy and expensive.

From our point of view, the special study activities have not been without an "adequate strategy for research". In early project deliberations it was agreed that we would focus on several key themes: system management, farmer participation and small-scale irrigation development. While we expected most special studies to deal with one or more of these issues, we also would not rule out the good idea that fell outside these topics. I think the special study activities of the project are rather well articulated with these broad issues.

On the matter of the lack of standards of content and quality of materials prepared by the universities, I can only say that we at Cornell do not feel that we have produced any materials of poor quality. There are procedures in the project to have colleagues review materials prior to their publication. We think this is a sound procedure and consistent with general practices of peer review with ultimate responsibility to the author's.

I should also note that it is not clear to me what AID/W means by CID leadership in this last paragraph. I believe that CID leadership has been about right, in most cases. They have not attempted to be directive of the universities in planning and implementing project activities. On the other hand, they did play a useful role in helping us restructure project management when it became clear that changes were necessary. While at one level the project is a CID contract, at another level it is a university implemented program for which the universities must have "freedom with responsibility".

The other items, lack of follow-up on JPMT decisions, problems with reporting and with development of the annual workplan have been significant problems in the early stages of the project. I believe that the reason for these problems had to do with management inadequacies at several levels including both the universities and AID/W. With our restructuring of management and the appointment of Dick McConen, many of

these difficulties have been resolved or significantly improved. It would have been helpful for the AID/W memo to convey to you more of this sense of movement and progress.

Sincerely yours,

E. W. Coward, Jr. (BDL)

E. W. Coward, Jr.
University Project Director
Water Management Synthesis II

cc: Dick McConnen
Jack Keller
Wayne Clyna

APPENDIX: INTERUNIVERSITY COLLABORATION IN WMS-II ACTIVITIES

The following Cornell activities have been characterized by inter-university collaboration or by participation of staff and students from other universities:

- i. INDONESIA: Small Scale Irrigation Workshop (1-02-009-85)
- ii. WORLDWIDE: Recurrent Costs (1-02-062-85)
- iii. WORLDWIDE: Rehabilitation Game Simulation (2-12-048-85)
- iv. WORLDWIDE: Joint Current Research Seminar (2-12-050-85)
- v. BANGLADESH: Water Management Systems Project Paper and Water Management Systems Project Paper Completion (1-02-015-82)
- vi. INDIA: Hill Irrigation, Phases I and II (1-02-013-83; 1-02-074-84)
- vii. INDONESIA: Small-Scale O&M (1-02-011-84)
- viii. WORLDWIDE: Small-Scale Workshop (2-14-064-84)
- ix. WORLDWIDE: Participation Workshop (2-14-066-84)
- x. WORLDWIDE and HAITI: Summer Internship (2-11-020-83)
- xi. WORLDWIDE: Small-Scale Irrigation Special Study (3-04-111-84)

In addition, Cornell staff have participated or will participate in the following activities managed by either USU or CSU.

- i. NEPAL: DA Workshop Planning (2-02-003-84)
- ii. PAKISTAN: Curriculum Development (1-02-071-85)
- iii. CHAD: Irrigated Agriculture (1-02-073-85)
- iv. INDIA: Maharashtra IT&M (1-02-023-84)
- v. INDIA: Irrigation Sector Evaluation (1-02-021-84)
- vi. NEPAL: Small and Medium Scale Irrigation (1-02-102-84)
- vii. PERU: Plan MERIS (1-02-102-84)
- viii. BANGLADESH: BAU Collaboration (1-03-030-82)
- ix. CSU Summer Workshop (2-11-081-84)
- x. PERU: Expansion of Irrigation Systems (1-02-082-84)

COLORADO STATE UNIVERSITY
RESPONSE TO THE AID ISSUES STATEMENT

While time and circumstances have not allowed the CPMT to answer the general issues collectively, we will respond to the general issues from the CSU perspective.

The first comment is that these issues are strictly from AID/W management's perspective not as stated "...of most concern to AID and the Contractor..." This observation supports another perspective. First, this illustrates how AID/W implements its collaborative style. There was no collaboration in the "Issues Statement" nor in other instances such as the "Technical Directions" letters issued without collaboration as specified in the Contract. Second, this illustrates another frequent occurrence. AID/W statements are frequently without factual basis, i.e. the "Issues Statement" does not represent contractor concerns nor are many other statements in the issues factually based.

1. Most team members have come from one of the participatory universities. We think it is best under most circumstances to have the majority of team members from one of the WMSII lead universities. We like to think that we have developed a philosophy or approach to the tasks that would suffer without major input from the core group that has been involved. We wouldn't agree that that is a narrow group, though. CSU, for example, has used a total of 62 professionals in the two and one half years including 12 consultants, but not including those from other universities. This has been a capacity building approach from the standpoint of trying to add one or two team members to each team that has not had experience with us before. Requests for resources to add more people to build capability are often denied. Therefore, the capability developed to date has been largely accomplished without added resources. We don't want to be just another consulting firm and hire people off the street to do the work. We want to emphasize an approach to water management that can only be developed by a solid core of professionals who have a long term commitment.

We could cite many examples. One such example is hiring Dr. Brad Parlin to be the sociology trainer on a Sri Lanka DA workshop. He was a senior sociologist from Utah State but hadn't had any irrigation or overseas experience. He has now participated with us in a couple of activities.

Another example is a consulting firm that we hired (actually sub-contract with CID but managed through CSU) for an irrigation project evaluation. We managed the activity including orientation of the team, inserting one of our staff on the team, and continually working with the team leader. As a result of that activity, we have since used one of the consultants on another activity and will probably use one or more of the consultants again.

We have used staff from Utah State, Cornell, Arizona, and Utah in addition to the consultants.

We believe that our responses to mission requests are quite timely. There have been exceptions but for the most part teams have been put together within a reasonable and quite responsive time frame. While we would like a

longer lead time than we normally get, we have always tried to respond as quickly as is reasonable.

The team quality has overall been very high. Check the mission evaluations. They are quite good. I think the majority of team quality has been excellent. Some are better than others, and some circumstances may make it difficult to get the highest quality.

We have tried to get resources to expand the resource pool. It does take additional resources. We have received a little money to do that (such as the case of Brad Parlin). We also were able once to add a graduate student to a team, but for the most part, we have received neither encouragement, approval nor funds to expand the pool of expertise. We even have a very difficult time getting graduate student support for any of our activities. AID/Washington just will not provide that support even though we feel that is a major method for expanding the pool of expertise.

2. We note that AID/W states administration and overhead (based on a projection that is unsubstantiated) are 52 percent. Actually, the 22% administration figure is misleading. Each university has provided AID with a division of this expenditure. At CSU only 26% of that figure is purely administrative (meaning only about 6% pure administrative cost) costs. The other costs are part of intellectual content management/networking and services to subactivities. Further, the administrative expenses would be much less if excessive time were not spent responding to written communications from AID/W such as this "Issues Statement," numerous detailed letters, plus the infinitely detailed budgeting and reporting processes.

The overhead rate is 30%? In a project where the university/CID overhead is commonly at least 45 percent, what is suggested is that we should be commended for having such a low average. We have no control over this issue. This again illustrates the details of input management (search for ways to implement activities to reduce overhead) in a complicated and time consuming manner.

3. We have continually been rejected when we have proposed new training courses (for example, we have proposed a development of solutions workshop and a senior officials workshop that were not approved).

Almost all of our DA workshops have had a different twist. For example, the workshop in Bangladesh was probably the one we would consider a standard DA. The workshop in India was adapted to produce an interdisciplinary workplan for the improvement of the Dahod tank. The workshop in Sri Lanka was entirely a training exercise to train the 41 participants to carry on DA studies during the next two years. No technical report was required or done. The Nepal workshop was a DA study. In fact, Doug Merrey wrote Robby Laitos, the DA coordinator for that workshop, saying, "I was also pleased to learn that you were successful in adapting the DA workshop mode to the specific needs at hand,..." Mark Svendsen also said, "You should be commended for successfully adapting the basic DA approach to a challenging new set of circumstances." There have been times when one of the instructors at a DA workshop was not as effective as we would have liked, but in the whole, as I think the Creative Associates DA evaluation report says in the opening statement of the executive summary, "The Diagnostic Analysis Workshops provide a valuable means for delivering short-term training that encourages interdisciplinary inquiry into water management issues."

4. Technology transfer involves a variety of activities and in fact, cannot even be assigned to an activity some of the time. However, we have been blocked at CSU in getting approvals for a newsletter, brochures, the annual report, and concept papers. All of these certainly would have aided in the networking and information dissemination. We have been particularly thwarted in this area by non-approval of technology transfer types of activities.

5. We would make the following reply to the CSU statements in particular:

- a. "The resource base being touched within CSU is narrow and at intermediate levels. Access to the total resource base of CSU (i.e., ag. economics, engineering, agronomy, sociology) appears to be unnecessarily limited in terms of quantity and quality."

This is a charge that AID/Washington has been making since the project began, but it simply is not true. (See the attachment on WMS II person months.) We believe we have by far the widest access to faculty of any university in the project. Our use is well spread across disciplines and ranks. In fact, the rank used the most is full professor, both in terms of number of people used and in person months.

We think the quality of these people is also quite high. Why else would the missions be so complimentary?

- b. "University-initiated proposals and activities are often vague, without sufficient substantive content, and confined to planning, necessitating AID intervention, all of which results in unnecessary delays, misunderstandings, and acrimony."

The first part of this assertion we would challenge again as simply not true. It is true, however, that initially in FY83 when there were no guidelines provided by AID (either written or oral) that the proposals were quite brief. However, three different submissions were made in FY83 and each reflected changing oral requests. If you look at the FY84 and FY85 workplans, you can see that they are quite substantial. A comparative analysis of content across universities does not suggest significant deficiencies by CSU.

The activities are not confined to planning, but planning is necessitated as an integral part of many of the activities. You just can't hold a 5-week workshop in a host country or send graduate students to a country without substantial planning being involved.

We believe the last statement is the most revealing of all statements in the paper ("necessitating AID intervention"). This has been the crux of our management problems with AID...intervention at the input stage. We would like to be able to do the work we were contracted to do without continual interference from AID/Washington. This interference process has caused many unnecessary delays, misunderstandings, and acrimony.

- c. "CSU is unresponsive or negative to AID leadership and guidance, relying on its own narrow interpretation of Contract terms."

We have felt we were contracted because we had a certain technical capability that AID didn't have. We have felt the guidance by the AID deputy directors especially has been uncalled for. They want to lead and guide our management to do what they want done. We felt that a contract gave both sides certain responsibilities to accomplish, but unfortunately the AID management has wanted to have major input into the university management of activities and to suggest (on threat of disapproval) what and how activities are done. We don't deny that we have been both unresponsive and negative to that kind of AID leadership.

CSU STAFF
WMS II PERSON MONTHS

<u>RANK</u>	<u>TOTAL PERSON MONTHS</u>
13 Professors	85.31 pm
9 Associate Professors	62.13 pm
7 Assistant Professors	61.08 pm
1 Post Doctoral	17.90 pm
1 Research Scientist	27.42 pm
6 Research Associates	68.19 pm
12 GRAs	60.18 pm
12 Consultants	26.55 pm
7 Support Staff	<u>130.15 pm</u>
69 TOTAL	538.91 pm

<u>DISCIPLINE</u>	<u>TOTAL PERSON MONTHS</u>
Agricultural & Chemical Engineering	103.54 pm
Civil Engineering	53.08 pm
Mechanical Engineering	7.82 pm
Agronomy	54.11 pm
Sociology	83.13 pm
Technical Journalism	70.00 pm
Economics	58.05 pm
Consultants	<u>26.55 pm</u>
TOTAL	456.28 APM

SPECIAL STUDIES PROGRAM AT COLORADO STATE UNIVERSITY

David M. Freeman
Coordinator

Objective

To establish an interdisciplinary program of study which will advance state of the art knowledge about organizational means (physical hardware and social software) to improve linkages between farm and main systems in large scale gravity flow irrigation systems and to employ results to serve project needs in training, technical assistance, and technology transfer.

Rationale

The extent to which farm water supply can be applied in accordance with biological requirements of crops is a function of socio-technical operations at three levels--main system, middle level local organizations, and farm systems. Farmers in irrigation systems around the world are faced with the common task of hitting a changing target--a crop root zone moisture deficit. In most large scale systems, upstream main systems were designed and managed with little regard to problems faced by farmers in securing local water control for crop production. Furthermore, original design criteria and present management have become inappropriate to new crop technologies and new management objectives. Main system managements cannot control critical factors determining rapidly shifting crop consumptive demands at the farm level, and farmers cannot control critical factors determining main system operations. Farmer control requirements must be melded with main system management requirements through provision of mid-level organizational rules and tools in the interface between farms and main systems.

Rules and tools in middle level units must emerge to disaggregate central supply tendencies of the main system into specific flows meeting particular requirements of individual farm units. We believe we know something about which variables importantly determine success and failure of such mid-level arrangements. We have developed a program of study to investigate these factors on a cross-cultural and interdisciplinary basis in Sri Lanka, Thailand, and possibly in Pakistan. We believe synthesis of experiences from all activities and the communication of these concepts are essential. This work must be done on campus.

Expected Outputs

We expect to have the following outputs from our special studies efforts:

- . Country specific case studies for mission purposes showing uses and limits of existing interface arrangements;
- . development of new concepts for organization and farmer participation;
- . development of new concepts for management at the field and throughout the system;

- implementation of new interface and management concepts for improved management of systems;
- summary analyses for agency administrators extracting lessons learned;
- referred publications in host country and American journals yielding scholarly analyses of the problems concepts and improvements;
- a workshop to disseminate knowledge gained to WMS II and host country personnel;
- concepts, procedures, and data for incorporation into host country and WMS II training materials.



Water Management Synthesis II Project

Department of Agricultural and Irrigation Engineering
 Utah State University Logan, Utah 84322
 (801) 750-2787

M E M O R A N D U M

TO: WMS II Mid-Term Evaluation Team
 FROM: Jack Keller *JK*
 DATE: June 10, 1985
 SUBJECT: Evaluation of Issues

The following is our response to the six evaluation issues presented in the May-June 1985 Issues Statement.

1. We have made a concerted effort to involve a broad range of faculty and students from on-campus, as is evident from the attached roster of WMS personnel. We have concentrated on developing team leadership capabilities and now have eight faculty who have served in this capacity with interdisciplinary teams. We have stressed the interdisciplinary nature of our assignments and hold a WMS II seminar every Wednesday afternoon as one means of developing skills and understanding necessary to take advantage of the various disciplines in working together to solve water management problems. In addition, these WMS II seminars form a means of exposing our graduate students as well as potential team members and leaders to the pragmatic interworkings of interdisciplinary teams.

As for our outreach on technical activities, the attached list presenting the professionals and graduate students who have worked on each of our various WMS activities is attached. This listing is grouped in the same order as is presented in our WMS Activity Review document which was submitted to the Review Team. I think you will find that there has been considerable outreach, especially in the Technical Assistance activities. Of course some of the on-campus activities such as the Ecuavir module program have by necessity been essentially Utah State oriented. You all know the difficulty in placing teams using various unknowns and still being expected to produce a high quality product.

2. There is absolutely nothing we can do about the amount of overhead Utah State charges on direct costs. Twenty percent of the overhead collected is returned to the generating unit, which in our case is the Agricultural and Irrigation Engineering Department. We have taken the overhead return and used it quite efficiently in areas which have

directly or indirectly supported the WMS project goals. For example, we bought the \$30,000 computer which was needed for the Main System Management modeling activities. We also invested our entire 20 percent share of overhead return from the Ecuavir program to purchase the necessary computer graphics and editing equipment. In addition, we have used some overhead money generated for the word processing and computer equipment needed for the Project's accounting system. Perhaps the most creative thing we did with the discretionary overhead return generated by WMS was to subsidize the International Irrigation Center (IIC), and this subsidy played a significant role in our ability to get the Center established.

As we have discussed with you in detail, not all of the money which is allocated to our administrative budget is used for what one would normally call overall University administration. The attached sheet gives a breakdown of the approximate proportion of this administrative budget which is used for overall University administration, intellectual networking and service to the subactivities. The services to subactivities include all necessary communications, preparation expenses, publication expenses and professional support services required on campus for carrying out both short-term and long-term technical assistance, as well as the Special Studies and Training activities.

3. We have been diligently involved in addressing and identifying training needs. For example, the Ecuavir modules present a new and innovative way to present the conceptual aspects of basic irrigation principals. We are going beyond these modules with a different type of presentation in the set of six Main System Management modules. The Senior Officers' Workshop in India was another innovative training mechanism in which we dealt with the decision and policy makers in India who were involved in making the resource allocations for water management activities. Our Lessons Learned/Rapid Appraisal activities are addressed to training professionals in the working of interdisciplinary teams and the processes involved with rapid appraisals.

The entire Plan MERIS Pilot Project is another innovative and extended training program. This is a multidisciplinary training exercise involving pragmatic in-field activities, research and demonstration which should have far-reaching effects in the development of irrigation systems in the Sierras of Peru. The Wednesday afternoon seminars discussed above are a means of training for professionals in the art of technology transfer. We use these seminars to communicate the various lessons learned from TA activities to the WMS group on campus and all other interested individuals.

Perhaps our largest non-traditional training activity is the International Irrigation Center. As we have already discussed with you,

the WMS projects played a significant indirect as well as direct role in the development of the Center. Presently we hold nine different training courses of from two to seven weeks each here on the Utah State campus. The courses are designed for professionals involved in various aspects of water management (see attached list). While they are technical in general, they also address the relevant social, institutional and economic issues. Over two hundred international participants have been involved in the courses presented during the past academic year. In addition, the Center has presented courses through WMS in Bolivia and India.

An area we have not adequately addressed, however, is that of analyzing the effectiveness of our various training activities. We do have some tentative plans in this regard, and as you have pointed out, realize that we should place more emphasis on this aspect.

4. We must admit that our networking activities, particularly on the University-initiated studies, have not progressed as we would have hoped. We did make some effort through the Irrigation System Management Task Force to achieve this, but were not diligent enough in our efforts.

We have had success with our networking efforts in England, France and Holland, and these have borne fruit in African activities. We are also involved with FAO and plan to be jointly sponsoring an expert consultancy dealing with water pricing policy next year and an African workshop this year.

Through our Main System Management Special Study activities we are beginning to generate a networking arrangement with professionals from Thailand, India, Sri Lanka and Morocco involved in systems operation and management.

5. No comment.

6. In terms of strategizing, stimulating and coordinating the Project, the leadership exerted by CID has been quite limited. During Jean Kearns' tenure as Deputy Project Director some effort was made in this regard. Since Dick McConnen has come on board, however, efforts in this regard have intensified greatly, although this is outside of CID. In addressing the specific issues listed under (6):

a. Dick McConnen does provide what we feel is the necessary follow-up.

b. Reporting has been somewhat inadequate recently. However, except for the last one or two CMPT and JMPT meetings, there have been minutes. We agree with the Committee that collectively we have not done an adequate job of reporting on Project activities to the

public and political universe surrounding us. We think we should dedicate more energy into putting our act together in this regard.

c. Preparing work plans has been a difficult issue for the Project. During the first year, as one would expect, there was considerable confusion. During the second year the three University's submitted work plans collectively were about double the available budget. In this case a significant part of the task of reducing the budgets to realistic levels was actually dumped on the AID management team. As we recall, at the JPMT meeting here in Logan, Cornell and USU, together with AID, worked over the necessary budget reductions. However, due to time constraints the meeting terminated before this was done with CSU (who had submitted a budget which was almost as large as was available for all three universities. During the third year, the CPMT did present a joint work plan to AID which was within budget. We at USU did get our work plan portion together and submitted on schedule to CSU, who at that time was responsible for assembling the joint work plan. However, due to several changes which were requested in laying out the budgets, there was a time lag in making the final submission.

d. We believe CID has done about what we could expect of them in terms of inter-university participation in field teams, Special Study and Training programs. We certainly were encouraged to do so, and in fact, have been criticized for our failure to do so from time to time.

e. Yes, there is a slow turnaround in assigning University's staff to the various Technical Assistance activities that come in during the year. The paper trail is rather long in order to maintain control; however, we do circumvent much of the time restraints through telephone communication once decisions have been made as to approvals, etc.

f. There is some lack of standards in terms of the content and quality of the various publications. Part of this stems from the fact that we have difficulty in coming to a consensus as to what constitutes sufficient quality for publications. We do not feel that there is so much trouble with content; however, we have not been as diligent as we might be in disciplining ourselves along these lines. If the intent is to get a standard product, one question might be whether this is really very important.

g. We have had a research strategy wherein we lined up our activities in the following manner. We considered Small-Scale/Community Managed Irrigation Systems as one area for study and Large-Scale Irrigation Systems Management as another area for study.

WMS Mid-Term Evaluation Team
June 10, 1985
Page Five

We have Task Forces for each of these areas; however, the Task Forces have been delinquent in carrying out their responsibilities for coordinating the various activities involved and developing useful networks. The Irrigation Systems Management Task Force has subdivided its thinking into three functional areas: (i) the system above the outlet; (ii) the system below the outlet; and (iii) the outlet itself, which you might call the interface areas. As we have already discussed with you, we believe this is a very reasonable approach to studying systems, and in fact we are following it. However, I must admit that we have not pursued the inner workings or the integration of these activities as well as we might. Our intention is to place additional energy into reviving our Task Force mission.

JK/1f

Attachments

Water Management Synthesis II Project

Department of Agricultural and Irrigation Engineering
Utah State University Logan, Utah 84322
(801) 750-2787

ROSTER OF WMS PERSONNEL

PROFESSIONALS:

Jack Keller	Department Head and Professor - AIE	6 ppm
Bryant Smith	Associate WMS II Project Director - AIE	12 ppm
Bruce Anderson	Professor Emeritus - AIE	3 ppm
Anwar Battikhi	Visiting Professor/Jordan - AIE	6 ppm
A. Alvin Bishop	Professor Emeritus - AIE	1 ppm
Tom Cronkite	Instructional Developer - AIE	12 ppm
David Daines	Associate Professor - AIE	4 ppm
Robert Hill	Professor - AIE	2 ppm
Dean F. Peterson	Professor Emeritus - AIE	3 ppm
Howard Peterson	Professor Emeritus - AIE	1 ppm
Gaylord Skogerboe	Research Professor - AIE & Dir. IIC	6 ppm
Glen Stringham	Professor - AIE	1 ppm
Kern Stutler	Associate Research Professor - AIE	6 ppm
Wynn Walker	Professor - AIE	4 ppm
Lyman Willardson	Professor - AIE	1 ppm
Humberto Yap-Salinas	Visiting Professor/Peru - AIE	1 ppm
Edwin C. Olsen III	Associate Professor - AIE	12 ppm
Bonita Reid	Instructional Art - AIE	12 ppm
Elaine Campanella	Instructional Art - AIE	12 ppm
Gary Merkley	Research Engineer - AIE	3 ppm
Jon Moris	Professor - Sociology	3 ppm
Derrick Thom	Professor - History & Geography	3 ppm
Allen LeBaron	Professor - Economics	3 ppm
David James	Professor - Soil Science	3 ppm
Brad Parlin	Associate Professor - Sociology	1 ppm
Mark Lusk	Assistant Professor - Sociology	1 ppm
Larry Bond	Associate Professor - Economics	1 ppm
William Farnsworth	Professor - Extension	1 ppm
Trevor Hughes	Water Resource Engineer - CE	1 ppm
Ross Robson	Associate Professor - Pol. Sci./Bus.	1 ppm
Brad Warnick	Graphics Designer - Graphics	3 ppm
Ken Boutwell	Instructional Supervisor - ITV	2 ppm

GRADUATE STUDENTS:

P. Zgheib	Lebanon - AIE	6.00 gpm
M. Sawant	India - AIE	6.00 gpm
B. Mulik	India - AIE	6.00 gpm
W. Lowry	U.S. - ITV	.75 gpm
S. von Borries	Bolivia	1.25 gpm
E. Rouse	U.S.	.50 gpm
S. Diaz	S. America	.11 gpm
J. Favre	France - EE	3.00 gpm
A. Keller	U.S. - AIE	6.00 gpm
W. Vlotman	Holland - AIE	6.00 gpm
K. Kawsard	Thailand - AIE	6.00 gpm
C. Pajsoontorn	Thailand - AIE	6.00 gpm
A. Jayasakaran	Sri Lanka - AIE	.50 gpm
R. Diven	U.S. - AIE	6.00 gpm
D. Robinson	U.S. - Economics	3.00 gpm
N. Haie	Iran - AIE	2.50 gpm
D. Hernandez	U.S. - Economics	1.00 gpm
N. Adams	U.S. - AIE	6.00 gpm
G. Dobbs	U.S. - AIE	6.00 gpm
H. Eisele	Switzerland - AIE	6.00 gpm
F. Gichuki	Kenya - AIE	8.00 gpm
J. Busman	U.S. - AIE	3.00 gpm
K. Smart	U.S. - Inst. Media	4.00 gpm
S. Douglas	U.S. - Inst. Media	.50 gpm
K. Grah	U.S. - Inst. Media	1.50 gpm

FY 85 USU ADMINISTRATIVE BUDGET

Code #0-02-997-85

ITEM	Overall Univ Admin.	Intellectual Mgt/Networking	SERVICES TO SUBACTIVITIES		Total Time	Expense
			Short-term & SS	Long-term field per.		
<u>Professional Staff</u>						
Jack Keller	1.50 PPM	1.50 PPM	0.50 PPM	0.50 PPM	4.0 PPM	
Bryant Smith	2.25 PPM	0.75 PPM	4.50 PPM	2.00 PPM	9.5 PPM	
Gaylord Skogerboe	0.50 PPM	----	0.50 PPM	----	1.0 PPM	
	<u>4.25 PPM</u>	<u>2.25 PPM</u>	<u>5.50 PPM</u>	<u>2.50 PPM</u>	<u>14.5 PPM</u>	\$ 72,138
<u>Support Staff</u>						
Secretary	4.00 SPM	----	7.00 SPM	1.00 SPM	12.0 SPM	
Production Typist	----	----	11.75 SPM	0.25 SPM	12.0 SPM	
Staff Accounting	6.00 SPM	----	0.50 SPM	1.50 SPM	8.0 SPM	
	<u>10.00 SPM</u>	<u>----</u>	<u>19.25 SPM</u>	<u>2.75 SPM</u>	<u>32.0 SPM</u>	\$ 48,000
Reserve Students	3.00 SPM	----	2.00 SPM	1.00 SPM	6.0 SPM	\$ 7,200
<u>Domestic Travel</u>						
	80%	20%				\$ 13,000
<u>Office Expenses</u>						
Word Processor Maintenance Contract						\$ 3,051
Supplies, phones, etc						\$ 20,900
<u>TOTAL DIRECT COSTS</u>						<u>\$164,289</u>
USU Overhead						\$ 52,572
CID G&A						\$ 16,265
<u>TOTAL INDIRECT COST</u>						<u>\$ 68,837</u>
<u>TOTAL BUDGET</u>						<u>\$233,126</u>

New WMS II Core Funds \$ 233,126

INTERNATIONAL IRRIGATION CENTER

UMC 83-B, Utah State University

Logan, Utah 84322

Telephone: (801) 750-2800 Telex: 3789426 UTAHSTATE LOGN

1985 COURSES IN ENGLISH AND SPANISH

Course	Date	Place	Cost
WATERLOGGING, DRAINAGE AND SALINITY CONTROL	March 24-May 4 (6 weeks)	Logan, Utah; Grand Valley, CO; Wellton-Mohawk Irri. Dist., Arizona; Imperial Valley & U.S. Salinity Lab, California	\$3,575
IRRIGATION, DESIGN, EVALUATION AND SCHEDULING	May 12-June 29 (7 weeks)	Logan, Utah; San Luis Valley, Colorado	3,950
WORKSHOP ON PLANNING AND POLICY STRATEGIES FOR IMPROVING IRRIGATED AGRICULTURE	July 7-20 (2 weeks)	Logan, Utah; Colorado; Arizona; California	2,200
ON-FARM WATER MANAGEMENT	July 28-August 31 (5 weeks)	Logan, Utah	2,900
SOIL AND WATER CONSERVATION AND MANAGEMENT	Sept. 8-Oct. 12 (5 weeks)	Logan, Utah * ...	2,900
OPERATION AND MANAGEMENT OF IRRIGATION DISTRICTS	Oct. 6-Nov. 16 (6 weeks)	USA-Mexico	3,575
PUMPING FOR IRRIGATION AND DRAINAGE	Oct. 20-Nov. 16 (4 weeks)	Logan, Utah; Colorado; Arizona	2,375

CENTRO INTERNACIONAL DE RIEGOS

UMC 83-B, Utah State University

Logan, Utah 84322

Telefono: (801) 750-2800 Telex: 3789426 UTAHSTATE LOGN

FUTUROS CURSOS EN INGLES Y ESPAÑOL 1985

Curso	Fecha	Lugar	Costo
DRENAJE Y CONTROL DE SALINIDAD	Marzo 24-Mayo 4 (6 semanas)	Logan, Utah; Grand Valley, CO; Wellton-Mohawk Irri. Dist., Arizona; Imperial Valley & U.S. Salinity Lab, California	\$3,575
PROGRAMACION, DISEÑO Y EVALUACION DE RIEGO EN LA FINCA	Mayo 12-Junio 29 (7 semanas)	Logan, Utah; Valle de San Luis, Colorado	3,950
PLANEAMIENTO Y ESTRATEGIAS POLITICAS PARA MEJORAR LA AGRICULTURA BAJO RIEGO (SEMINARIO PARA ALTOS EJECUTIVOS)	Julio 7-20 (2 semanas)	Logan, Utah; Colorado; Arizona; California	2,200
MANEJO, EXPERIMENTACION Y TRANSFERENCIA DE LA TECNICA DEL RIEGO	Julio 28-Agosto 31 (5 semanas)	Logan, Utah	2,900
MANEJO, Y CONSERVACION DE AGUAS Y SUELOS	Sept. 8-Oct. 12 (5 semanas)	Logan, Utah *...	2,900
OPERACION Y MANEJO DE DISTRITOS DE RIEGO	Oct. 6-Nov. 16 (6 semanas)	USA-Mexico	3,575
BOMBEO PARA EL RIEGO Y DRENAJE	Oct. 20-Nov. 16 (4 semanas)	Logan, Utah; Colorado; Arizona	2,375

ANNEX IX
WMS LOGICAL FRAMEWORK

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

AMB 0020 00 (11-77)

Life of Project:
From FY 82 to FY 86
Total U.S. Funding \$ 20,000,000
Date Prepared: Jan 26, 1982

Project Title & Number: WATER MANAGEMENT SYNTHESIS II

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS																																																																																				
<p>Program or Sector Goal: The broader objective to which this project contributes: Increased food/agricultural production and higher levels of farm income for participating farms</p>	<p>Measures of Goal Achievement: Output/Income of participating farms increased by at least 25% by 3rd year after intervention</p>	<p>Evaluations Special Studies Project Records</p>	<p>Assumptions for achieving goal targets: (Reasonably) rational macro, sectorial, and sub-sectorial policies</p>																																																																																				
<p>Sub-Goal: Increased economic efficiency of irrigation water use</p>	<p>More water reaching, and being utilized by farms with same water input into systems; value of extra farm output more than cost of interventions.</p>	<p>Assessments, Evaluations Special Studies Project Monitoring</p>	<p>Project purpose achieved Appropriate producer price incentives maintained Adequate budgetary support</p>																																																																																				
<p>Project Purpose: Increased host country capabilities to plan and implement irrigation water management projects/programs</p>	<p>Conditions that will indicate purpose has been achieved: End of project status. Host country WM programs being conducted effectively and efficiently on a continuing basis</p>	<p>Project Assessments & Evaluations Monitoring</p>	<p>Assumptions for achieving purpose: Host country support of improved irrigation water management program</p>																																																																																				
<p>Outputs: 1. Diagnostic Analysis Course cond'd 2. New training courses developed 3. Other training courses evaluated 4. Course for trainers taught 5. Audio visual modules developed 6. Formal training of trainers 7. Other training courses conducted 8. Roster of professionals 9. TA assignments 10. Performance evaluations 11. Diagnostic analysis/appraisal 12. Project analysis 13. Technical project monitoring 14. Applied research studies 15. Technology transfer network 16. Newsletter 17. Seminars/workshops 18. Guides/handbooks 19. Strategy papers 20. Library</p>	<p>Magnitude of Outputs: 12 5 10 8 10 8 16 1 75 60 10 10 20 10 1 15 8 10 8 1</p>	<p>Project Records</p>	<p>Assumptions for achieving output: Contractor able to provide adequate quantity of quality personnel Demand for output exists Distribution of demand as among activities is correctly projected</p>																																																																																				
<p>Inputs:</p> <table border="1"> <thead> <tr> <th></th> <th>Total</th> <th>Yr. 1</th> <th>Yr. 2</th> <th>Yr. 3</th> <th>Yr. 4</th> <th>Yr. 5</th> </tr> </thead> <tbody> <tr> <td>Salaries</td> <td>8872</td> <td>1142</td> <td>1417</td> <td>1371</td> <td>1519</td> <td>1223</td> </tr> <tr> <td>Benefits</td> <td>993</td> <td>169</td> <td>210</td> <td>206</td> <td>222</td> <td>186</td> </tr> <tr> <td>Allowances</td> <td>299</td> <td>51</td> <td>65</td> <td>63</td> <td>65</td> <td>55</td> </tr> <tr> <td>Transportation</td> <td>1579</td> <td>230</td> <td>321</td> <td>340</td> <td>358</td> <td>322</td> </tr> <tr> <td>Per diem</td> <td>2055</td> <td>329</td> <td>441</td> <td>422</td> <td>436</td> <td>427</td> </tr> <tr> <td>Equipment</td> <td>64</td> <td>20</td> <td>19</td> <td>7</td> <td>4</td> <td>4</td> </tr> <tr> <td>Publications</td> <td>1084</td> <td>125</td> <td>236</td> <td>228</td> <td>226</td> <td>269</td> </tr> <tr> <td>Other costs</td> <td>1054</td> <td>194</td> <td>273</td> <td>197</td> <td>206</td> <td>104</td> </tr> <tr> <td>Overhead</td> <td>6200</td> <td>1022</td> <td>1318</td> <td>1266</td> <td>1364</td> <td>1270</td> </tr> <tr> <td>Total</td> <td>20000</td> <td>3300</td> <td>4300</td> <td>4100</td> <td>4400</td> <td>3900</td> </tr> <tr> <td>Person months</td> <td>1604</td> <td>326</td> <td>378</td> <td>342</td> <td>361</td> <td>277</td> </tr> </tbody> </table>		Total	Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Salaries	8872	1142	1417	1371	1519	1223	Benefits	993	169	210	206	222	186	Allowances	299	51	65	63	65	55	Transportation	1579	230	321	340	358	322	Per diem	2055	329	441	422	436	427	Equipment	64	20	19	7	4	4	Publications	1084	125	236	228	226	269	Other costs	1054	194	273	197	206	104	Overhead	6200	1022	1318	1266	1364	1270	Total	20000	3300	4300	4100	4400	3900	Person months	1604	326	378	342	361	277	<p>Implementation Target (Type and Quantity) (\$1000)</p>	<p>Project Records</p>	<p>Assumptions for providing inputs: Funding is forthcoming Contractor is able to provide personnel Demand for output exists</p>
	Total	Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5																																																																																	
Salaries	8872	1142	1417	1371	1519	1223																																																																																	
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Person months	1604	326	378	342	361	277																																																																																	

ANNEX X

BIBLIOGRAPHY OF DOCUMENTS CONSULTED

1. Water Management Synthesis II Project (936-4127), AID Project Paper dated 8/2/82, 44 pages and annexes
2. AID Cost Reimbursement
Contract No. DAN-4127-C-00-2086-00
Signed Fischer/Brady, et. al
Effective September 30, 1982 and amendments 1-11
3. Memorandum to selected USAIDs from Worth Fitzgerald (ST/AGR/RNR - WMS II Project Manager) Water Management Synthesis II Project Mid-Term Evaluation (undated, but about February 1985) and replies from USAIDs:

Amman, Jordan	Niger
Dominican Republic	Pakistan
Ecuador	Sri Lanka
Haiti	Tanzania
India	Thailand
Indonesia	Bangladesh
4. WMS II - Report on Mission Evaluation of WMS II (for) first year of operations (FY 83), prepared by AID/ST management dated July 1984, by Fitzgerald/Merrey/Haubert
5. Asia Bureau Options for a follow-on Irrigation Sector Support project dated April 18, 1985, by M. Svendsen of ASIA/TR/ARD
6. Current issues in Irrigation Management in Asia (Asia Bureau ADO) conference April 21-26, 1985 at Los Bonas, by M. Svendsen of ASIA/TR/ARD
7. Draft of "WMS II Involvement with AID Efforts to Increase the Effectiveness Use of Irrigation Resources in Africa: A Discussion Paper" dated April 3, 1985, by Dick McConnen
8. Memorandum: Scope of Work for African Water Management from Fitzgerald to McConnen dated May 3, 1985
9. African Irrigation Overview, Implications for Donors (Chapter VII), April 1985, Jon Moris and Derrick Thorn, USU
10. Statement of Work: Project Review Team Mid-Term External Evaluation dated April 3, 1985

11. CID: Water Management Synthesis II Workplan FY 84, revised November 1983
12. CID: Water Management Synthesis II Worplan FY 85, revised February 15, 1985
13. Water Management Synthesis II Quarterly Report for October 1, 1984 to December 31, 1984
14. Annual Report for 1984 (draft) and letter Clyma - Fitzgerald, dated May 3, 1984 and subsequent correspondence:

Clyma-Fitzgerald	Sept. 9, 1983
Fitzgerald-Clyma	October 25, 1983
Fitzgerald-Clyma	Jan. 30, 1984
Clyma-Fitzgerald	April 11, 1984
Fitzgerald-Clyma	April 23, 1984
Shuler-Fitzgerald	June 5, 1984
Keller-Fitzgerald	June 12, 1984
15. AID Mid-Term Evaluation Statement on "Evaluation of Issues" and "Issues Statement" (6), 2 pages, undated
16. Technical Directions Letters:

Fitzgerald-Kearns	July 18, 1983
Fitzgerald-Kearns	August 3, 1983
Fitzgerald-Kearns	August 22, 1983
Fitzgerald-Kearns	October 5, 1983
Kearns-Fitzgerald	October 17, 1983
Clyma-Kearns	April 13, 1984
Fitzgerald-Kearns	May 8, 1984
CMPT - JPMT	June 5, 1984
Kearns-Fitzgerald	July 3, 1984
Casteel-CID	October 29, 1984
17. CID Documents:

Memo: McConnen-Busch - Response on behalf of CID to issue statements by AID (15 above)

WMS II Management Plan, Memo of August 20, 1984

Central Management Budget 1986, Fischer to hedrick, May 22, 1983

Notes at discussion with evaluation, May 17, 1985, by McConnen

Subcontracts with CID = Format Annex I

Consortia Overview - paper dated March 1984, by Fischer

CMPT Agenda - May 20-22, 1985

Financial Report for Quarter ending March 31, 1985

18. Documents From Cornell University:

Response to AID/W Issues Statement, June 7, 1985, Lynch to Busch

Summary of Cornell Activities, 1983, 1984, 1985 for TA, TT/TR, SS, Updated - produced May 1985 for team

Outline of presentation by WMS II, May 22, 1985

Facts and Figures - Cornell University Brochure

Workshop on Research Priorities for Irrigation Management in Asia (Kandy Sri Lanka), January 6-11, 1985

19. Documents From CSU:

Letter: Clyma-Busch, June 7, 1985, forwarding comments on "AID Issues Statement"

List of WMS person-months by discipline by year

Chronology WMS II Significant Management Events

Notes used by Clyma in oral presentation to team

Paper: "Water, Water Everywhere" by Freeman - presented at Warrenton, VA, April 11, 1985

Memorandum from Lattimore to publications committee on "WMS II Contract Statements" regarding technology transfer, dated January 27, 1984

Newsletter Evaluation Survey

Communication Committee Recommendations, Lattimore to JPMT, dated February 4, 1985

Letter: Svendsen to Vimmerstedt on CSU accounting, dated May 30, 1985

Letter: Fischer-Bertrand WMS II Problems on the "AID Side" dated November 26, 1984

- Letter: Clyma-Kearns, dated July 5, 1984
- Letter: Lattimore-Fitzgerald, dated September 8, 1983
19. Letter: Skogerboe-McConnen, May 16, 1985
- Lattimore et. al - Fitzgerald, December 1, 1983
- Document, Water Management Synthesis II, Summary of Projects - 1983, 1984, 1985 TA, TR, TT, SS
- ARA WMS II staff listing
- Publication Inventory, February 1984 - February 1985
20. Documents From USU
- Memorandum: Keller to Team, "Evaluation of Issues", dated June 10, 1985
- Roster of WMS personnel
- List of SS, TA, TR, TT, activities for 1983, 1984, 1985, 1986, 1987
- FY 85 USU Administration Budget
- USU International Irrigation Center, 1985 - Courses in English and Spanish
- Irrigation Training Modules, 1985
- Memo: Biery to team, Report on FY 85 Workplan and Revisions, dated June 7, 1985
- Correspondence on SS, TA, by year showing personnel involved
- Letter: Fleuret-McConnen on Africa program, dated April 22, 1985
- USU Review of WMS II Activities (for team), dated June 5, 1985

ANNEX XI

EVALUATION TEAM SCHEDULE

May 15 Organization meeting at RONCO, 1629 K Street
Wednesday Orientation at AID/S&T, Rosslyn Plaza

May 16 Continued orientation at AID/S&T, Rosslyn Plaza
Thursday

May 17 Asia Bureau, New State Building
Friday USAID Directorate for Food & Agriculture, Rosslyn
 Plaza
 Executive Director of WMS II, Rosslyn Plaza

May 20 Africa Bureau, New State Building,
Monday Latin America Bureau, New State Building
 Director for Human Resources, Rosslyn Plaza
 Food Foundation, N.Y. (Chas. Busch only)

May 21 Meeting with AID personnel to discuss issues
Tuesday Travel to Ithaca, N.Y., Cornell University
 Social evening with CPMT Group and Core Staff

May 22 Breakfast with Assoc. Director, Int'l Agricultural
Wednesday Program
 CPMT Committee
 Cornell University Core Faculty

May 23 Cornell University Core Faculty
Thursday Graduate Students
 Water Management System Computer Game Simulation
 Office of Sponsored Programs, Cornell
 Team Coordination and Planning

May 30 Interview AID and BIFAD personnel in Washington, D.C.
Thursday

June 2 Travel to Fort Collins, CSU
Sunday Social gathering with CSU Advisory Committee

June 3 Meeting with CSU WMS II Advisory Committee
Monday Lunch with CSU Vice Presidents and Dept. Heads
 WMS II PD and EPD
 Reception at Student Center

June 4 Meeting with Director of International Programs
Tuesday Met with Department Heads
 Meeting with Vice President for Research
 Evaluation Team Discussion

June 5 Travel to Logan, USU
 Wednesday Dinner with USU Core Group

June 6 Meeting with Core Group, USU
 Thursday Viewed Video Modules
 Lunch with Dean, College of Engineering
 Met with USU Administrators
 Picnic with USU WMS II Graduate Students

June 7 Met with USU WMS II Core Group
 Friday Met with WMS II Administrative and Support Group
 Team Observation
 Travel to Salt Lake City

June 8 Travel to Tucson
 Saturday

June 9 Day off
 Sunday

June 10 Met with CID Executive Staff
 Monday Team Observation
 Dinner with CID Executive Staff

June 11 Team Writing in Tucson
 Tuesday

June 12 Team Writing in Tucson
 Wednesday

June 13 Team Writing in Tucson
 Thursday

June 14 Team Writing in Tucson
 Friday Ernst and Quenemoen Travel Home

June 15 Travel Home for Busch & Messerschmidt
 Saturday

June 16 Busch Travels to Washington
 Sunday

June 17 Draft Report delivered to RONCO for editing
 Monday

June 18 Busch confers with Fitzgerald on Draft Report
 Executive Summary

ANNEX XII

PERSONS CONTACTED

CID Observer

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