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PAGE 1

PROJECT APPRAISAL REPORT (PAR)

1. PROJECT NO. 120-115		2. PAR FOR PERIOD: June 30, 73 to Dec. 30, 74		3. COUNTRY Pakistan, Vietnam Southeast Asia		4. PAR SERIAL NO.	
5. PROJECT TITLE Optimum Utilization of Water for Agriculture Delivery and Removal Systems and Related Institutions (Efficient Use of Water-Conveyances)							
6. PROJECT DURATION: Began FY 1970		Ends FY 1974		7. DATE LATEST PROP		8. DATE LATEST PIP	
9. DATE PRIOR PAR		10. U.S. FUNDING		a. Cumulative Obligation Thru Prior FY: \$		b. Current FY Estimated Budget: \$	
				c. Estimated Budget to completion After Current FY: \$			
11. KEY ACTION AGENTS (Contractor, Participating Agency or Voluntary Agency)							
a. NAME Colorado State University				b. CONTRACT, PASA OR VOL. AG. NO. CSD 2460			

I. NEW ACTIONS PROPOSED AND REQUESTED AS A RESULT OF THIS EVALUATION

A. ACTION (X)			B. LIST OF ACTIONS	C. PROPOSED ACTION COMPLETION DATE
USAID	AID/W	HOST		
X			1. Accept the review team recommendations in full.	Jan. 15, 1975
X	X		2. Extend grant, as revised according to review team recommendations, for 2-year period	Mar. 31, 1975

D. REPLANNING REQUIRED: REVISED OR NEW: PROP PIP PRO AG FIO/T FIO/C S/P

E. DATE OF MISSION REVIEW

PROJECT MANAGER: TYPED NAME, SIGNED INITIALS AND DATE
D. L. Plucknett, TA/AGR *DLP 10 Feb 75*

MISSION DIRECTOR: TYPED NAME, SIGNED INITIALS AND DATE
Leon F. Hesser - *Leon F. Hesser 2/11/75*

Project Appraisal Report - Part III

NARRATIVE

Optimum Utilization of Water for Agriculture Delivery and Removal Systems and Related Institutions (Efficient Use of Water-Conveyances)
Colorado State University, AID/csd-2460

Undoubtedly Colorado State University has increased the competence in water delivery systems through the 211(d) grant. It is clear, however, that some of the activities of the grant in the past were spread rather widely across a number of disciplines and topics including; economics, anthropology, law, and sociology; and that, while these topics are of real importance in water management, the result of the interdisciplinary approach was more ephemeral than real. Complex, highly technical reports and theses can result from such vague, philosophical discussions of national or regional approaches to management of water, but solutions to real problems of real people can only be solved on the ground and at the level of the people involved. CSU now recognizes the need to focus on problems of water delivery in small irrigation systems (rarely on whole river basins) and on small farms in developing countries. This reorientation will be of benefit.

A neglected area in the grant activities was water removal (drainage). This was, in part, due to the fact that the Civil Engineering Department (who are delivery and structure-oriented) controlled the grant, while the Agricultural Engineering Department, who are interested in managing water at farm level (and are therefore interested in drainage) were not sufficiently involved in grant activities. This deficiency was noted by the review team, and CSU agreed to work to remedy the situation. It should be pointed out that the grant did assist in building up the Agricultural Engineering Department, an achievement of benefit both to AID and CSU.

CSU did not concentrate on the state-of-the-art in either water delivery or removal, except in their water management research in Pakistan. If such studies and analyses had been done, AID would have benefited greatly; for the real problems would have been identified and future directions clarified and indicated. CSU now sees the need to do this and emphasize such studies in their proposal for extension/revision.

Some very beneficial achievements of the grant in building CSU's competence in delivery systems included: an interdisciplinary seminar emphasizing social and institutional constraints in water management, increased library holdings, increased staff (both in number and involvement) working on water management, interdepartmental cooperation, new courses in water management and increased international consulting capacity.

CSU has considerable staff competence in water management; however, their understanding of LDC problems is not as deep and well-founded as TA/AGR would like. However, the emphasis in the future on state-of-the-art studies of water delivery and removal for small farms will help to deepen their understanding, and, thereby, their ability to respond to AID needs and requests.

Utilization of CSU competence to date has been quite good. They have responded readily and willingly to requests for assistance from AID and other agencies. They have become recognized as a center of excellence in water management.

TA/AGR fully accepts the Review Team's recommendations which were as follows:

1. Colorado State University should agree with Utah State University and the University of Arizona on a means or structure for coordinative and collaborative work at the technical level before submitting any formal proposal for extension. (This was agreed to and has been done.)
2. Colorado State University's proposal for extension should be the result of a joint approach with Utah State University and the University of Arizona which will (a) maintain a clearly defined and focussed attention to the major elements of the water chain, (b) provide flexibility for the effective use of each university's capabilities across the board on water management, and (c) will provide sufficient detail in the form of specific outputs. (This has been done. Grant Project Statements have been prepared on this basis.)
3. If CUSUSWASH is the mechanism of their choice, AID should vigorously support a positive and effective role for CUSUSWASH - both directly through contracts for services and indirectly as a coordinative mechanism - as the principal agent for dealing with the leading U.S. water institutions. (CUSUSWASH was wholeheartedly supported by CSU, USU and AU and restructuring of consortium programming has been institutionalized within CUCUSWASH to ensure more direct focus of grants and collaborative efforts to work on state-of-the-art studies and other response activities.)
4. The "primary" focus of the Colorado State University grant should continue to be concern with the delivery and removal components of the water chain but with increased emphasis on practices applicable to the small farmer and on drainage systems. A "secondary" focus on other elements of the water chain should also be included. (Accepted in full by CSU and written into their proposal for extension/revision of the grant.)
5. Grant funded activities should be planned to increase institutional response capabilities and facilitate utilization. This means more involvement of the agricultural engineers, agronomists and knowledge transfer (extension) experts and less attention (as compared to past activity) to non-technical factors. It also means more attention to water removal problems on a world-wide

basis and at the micro level. (CSU is working on this and has reflected this change in their new grant proposal.)

6. The principal effort financed by an extension should involve a major state-of-the-art study and assessment on water delivery and removal systems and practices--in cooperation with AID and sister institutions and in consideration of other water and soil problems. Such an assessment should conclude:

- . identification of simple systems which are easy to operate and maintain and best adapted to the varied conditions of LDCs.
- . based on the above, the introduction of cost/benefit analyses and social and political constraints in designing and selecting alternative approaches.
- . special attention to energy-saving practices and the inter-relationships between fertilizer use and water management.
- . development of research and training priorities.

(Dr. E. V. Richardson, the new Grant Director, has enthusiastically taken this recommendation and is working to implement it now during the closing period of the initial grant as well as planning for its implementation in the new revised format.)

7. In addition to the state-of-the-art effort and results, utilization activities should be supported including, but not necessarily limited to, the following:

- . designing, testing and providing training at lower levels and on-site in the LDCs.
- . talent banking responsibility - nationwide for water delivery and removal.
- . publication and distribution of manuals, handbooks, etc., on practices applicable in LDCs.
- . faculty and student exchange, joint advisory teams, joint research and sharing of training capacities with sister universities.
- . programmed linkages with selected international agricultural institutes and LDCs.

(Fully agreed to in principle with some activities in progress)