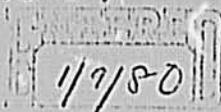


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CLASSIFICATION  
 PROJECT EVALUATION SUMMARY (PES) - PART I

Report Symbol U-447

1. PROJECT TITLE  ON-FARM WATER MANAGEMENT			2. PROJECT NUMBER 527-0170 ✓	3. MISSION/AID/W OFFICE USAID/Peru
5. KEY PROJECT IMPLEMENTATION DATES			4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY)	
A. First PRO-AG or Equivalent FY <u>78</u>	B. Final Obligation Expected FY <u>80</u>	C. Final Input Delivery FY <u>81</u>	<input checked="" type="checkbox"/> REGULAR EVALUATION <input type="checkbox"/> SPECIAL EVALUATION	
6. ESTIMATED PROJECT FUNDING			7. PERIOD COVERED BY EVALUATION	
A. Total \$ <u>707,000</u>			From (month/yr.) <u>12/29/77</u>	
B. U.S. \$ <u>497,000</u>			To (month/yr.) <u>7/1/79</u>	
			Date of Evaluation Review	

## B. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR

A. List decisions and/or unresolved issues; cite those items needing further study.  
 (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., airgram, SPAR, PIO, which will present detailed request.)

B. NAME OF OFFICER RESPONSIBLE FOR ACTION

C. DATE ACTION TO BE COMPLETED

See Item 21, Recommendations

## 9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS

<input type="checkbox"/> Project Paper	<input type="checkbox"/> Implementation Plan e.g., CPI Network	<input type="checkbox"/> Other (Specify) _____
<input type="checkbox"/> Financial Plan	<input checked="" type="checkbox"/> PIO/T	_____
<input type="checkbox"/> Logical Framework	<input type="checkbox"/> PIO/C	<input type="checkbox"/> Other (Specify) _____
<input type="checkbox"/> Project Agreement	<input type="checkbox"/> PIO/P	_____

## 10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT

A.	<input type="checkbox"/> Continue Project Without Change
B.	<input type="checkbox"/> Change Project Design and/or
	<input checked="" type="checkbox"/> Change Implementation Plan
C.	<input type="checkbox"/> Discontinue Project

## 11. PROJECT OFFICER AND HOST COUNTRY OR OTHER RANKING PARTICIPANTS AS APPROPRIATE (Names and Titles)

H. Robert Kramer, Evaluation Officer  
 Loren Schulze, Acting Chief Agriculture Division

## 12. Mission/AID/W Office Director Approval

Signature	
Typed Name	Leonard Yaeger
Date	December 10, 1979

## PROJECT EVALUATION SUMMARY

### On-Farm Water Management Project No. 0170

#### 13. Summary

Agricultural production in Peru is severely constrained by the limited amount of accessible arable land resulting in large part from scarce and uncontrolled water supplies. This project is aimed at improving the incomes and nutritional status of the small farmer through the creation and demonstration of alternative water/land use systems for increasing productivity on small farms. Utah State University is implementing the project for AID under a contract signed in May 1978 through which USU is providing the full time services of an Irrigation Engineer (36 months) and an Agronomist (24 months). The first project agreement was signed December 29, 1977, and the second was signed on March 30, 1979.

Most project activities have been carried out in accordance with targets established in the project Work Plan. To the extent that delays have occurred (see Inputs, Outputs) these can be attributed to the following problems: (1) a delay in the establishment of one of three project demonstration-research sites, the Cañete Experimental Station, until late 1978 resulting from difficulties in negotiating contractual arrangements with the technical institute which previously occupied the site; (2) the transfer of the project from the Dirección General de Aguas (DGA) to the Instituto Nacional de Investigaciones Agropecuarias (INIA) which has not as yet been formalized, creating funding problems since the GOP counterpart funding has been delayed until the formal transfer is made; (3) both the quality and quantity of GOP counterpart personnel has been deficient, impeding the successful implementation of such activities as farmer field trials and the preparation of technical reports and bulletins; and (4) lack of GOP funds and mobility has hampered the programming of field trials. The inability to date of the GOP to provide requisite counterpart funding is having a deleterious effect on all AID-financed projects.

#### 14. Evaluation Methodology

This is the first formative evaluation to take place since the initiation of project activities. The Evaluation Officer, Project Manager, USU technical assistance team, National Planning Institute representative, and MinAg (DCA) personnel visited Cañete and Lima (La Molina) project sites in March 1979, to assess project performance. Subsequent meetings have been held between USAID and the USU team to discuss project implementation problems and solutions.

## 15. External Factors

There have been no modifications in GOP priorities which have had a significant impact on project implementation. The GOP still considers the agricultural sector as first priority and within the sector, the improvement of agricultural production and productivity. The assumption that the MinAg will continue its support of small farmer irrigation improvement and expansion remains valid. The only assumption whose validity is problematic and which is proving a real constraint to project success is the lack of timely provision of GOP budgetary and staff support. Although proceeds from the sale of Title I commodities have been budgeted by the GOP for use as counterpart, no funds have as yet been provided, seriously affecting the current implementation of project activities.

One change in project setting whose importance and effect on project implementation remains unclear although it is expected to be salutary is the creation of the National Institute of Agrarian Research (INIA) and, within this Office, of the Institute of Water and Soil Research. GOP project responsibilities are presently being transferred from the DGA to the new INIA.

## 16. Inputs

### USAID

1. Technical Assistance - Long-term: Irrigation Engineer and Agronomist. (See Item 21, Recommendations) Only one person/month of short-term T.A. has been contracted.

2. Commodities - All equipment has been procured in a timely fashion. Difficulties in delivery to the project site of commodities purchased in the U.S. are the result of a GOP mandate transferring customs clearance responsibility from USAID to the Ministry of Agriculture.

3. Participants - none identified to date.

### GOP

The project contribution of the Ministry of Agriculture/INIA includes both administrative and technical personnel (including full time counterpart technicians, project farm engineers, project farm technical agricultural assistants, permanent field workers for the Research/Demonstration Farms, land for the Research/Demonstration farm sites, agricultural machinery, vehicles, laboratory facilities, and office space with secretaries as required. Operating expenses for the operation of the Research/Demonstration Farms (seeds, fertilizer, insecticide, herbicide, fuel, etc.) and facilities and materials for bulletin publication are also expected to be provided by the MinAg.

The MinAg personnel inputs are summarized in Table I. Programmed staffing requirements are indicated as well as actual 1978 and current 1979 staffing patterns. In addition to the shortfall shown, the quality of the personnel assigned to the project has generally been weak, and some personnel, especially the agricultural engineers, have been inexperienced.

During 1978, most agricultural inputs (e.g. seed, fertilizer, chemicals, etc.) required for the implementation, management and termination of the field experiments were supplied on a timely basis. None of the required inputs have been received during 1979, and inputs have either been donated by other institutions or purchased with AID project funds.

The still unformalized transfer of the project from the DCA to INIA has created serious funding problems. The DGA was remiss in committing funds for the project, since it did not expect to be involved in project implementation after the first year of activities. Yet since the project had not been formally transferred to the INIA when the budgets were programmed, it could not commit funds for the project. INIA has in fact been dependent upon parent organizations for the transfer of funds and personnel. As a result of general economic austerity, these parent organizations have assigned only a minimal amount of personnel and funds. Nothing is presently budgeted for operation and maintenance of experiments and, as shown above, staffing levels do not reach requirements. Although PL 480 Title I proceeds have been budgeted by the GOP to partially cover counterpart requirements, these funds have not yet materialized.

PERSONNEL INPUTS BY MOA

	<u>REQUIRED BY AGREEMENT</u>	<u>ACTUALLY ASSIGNED TO PROJECT</u>	
		<u>1978</u>	<u>1979</u>
<u>A. Agricultural Engineers</u>			
1. Central Office	2	1	1
2. La Molina	1	1	2 f
3. Huancayo	1	0	0
4. Cañete	<u>1</u>	<u>2 a</u>	<u>1 a</u>
	5	4	4
<u>B. Agronomist</u>			
1. Central Office	1	1	1

	REQUIRED BY AGREEMENT	ACTUALLY ASSIGNED TO PROJECT	
		1978	1979
<u>C. Technical Assistants</u>			
1. La Molina	1	1	1
2. Huancayo	1	1 b	1 b
3. Cañete	1	0	0
	<u>3</u>	<u>2</u>	<u>2</u>
<u>D. Field Workers</u>			
1. La Molina	2	2	2
2. Huancayo	2	2 c	0
3. Cañete	2	1 d	1 d
	<u>6</u>	<u>5</u>	<u>3</u>
<u>E. Bilingual Secretary</u>			
1. Central Office	1	1 e	1 e

- a. One of these is actually an agronomist.
- b. An Agronomist (excellent) receiving salary of Technical Assistant.
- c. A student receiving pay of two workers.
- d. A student.
- e. Not Bilingual.
- f. One is still a student (the one shown previously in Huancayo under letter (c) above).

17. Outputs

Programmed targets and actual progress are outlined in accompanying table.

a. The establishment and effective operation (with adequate staff and funds) of three INIA Research/Demonstration Farms to provide a basis for applied research and demonstration for application by small farmer beneficiary. Three sites have been established, at La Molina (Lima), Huancayo and Cañete. The Cañete site was not established until late 1978. Counterpart funding has been insufficient to insure the adequate staffing and materials required for optimal effective operation of the sites.

b. Water-fertilizer-production interaction studies for several principal crops. A minimum of 13 studies is anticipated during the life of project. These will provide the basic technical information necessary for project farmer field trial extension activities. Six interaction studies have been completed to date.

c. National Irrigation Water Requirement Technical Manual has been produced delineating water requirements by crop, month, and soil type for each major irrigation district in Peru.

d. The results of the interaction studies which are determined to yield the optimum crop production will be put into practice on the Research/Demonstration Farms. Approximately 186 demonstrations are programmed for the life of project; 65 have taken place to date.

e. Irrigation management field demonstration trials will be established on the plots of at least 54 local small farmers and agricultural cooperatives. The only field trials accomplished to date (3) have been done in Huancayo in collaboration with Plan Meris (Loan 059) personnel. Field trials have not been implemented at the other project subsites due to the lack of transportation, which has made it impossible for field personnel to undertake extension work and establish field trials. The MinAg has not assigned vehicles to the field stations.

f. Approximately 30 extension bulletins will be prepared covering all aspects of improved methods of managing irrigation water on the small farm. Eight extension bulletins have been completed to date. The shortfall is the result of the shortage and poor quality of personnel assigned by the MinAg to the project. When reports and bulletins are prepared, their publication by the MinAg is extremely slow.

g. Approximately 750-1,000 students, INIA technicians, field workers and farmers will receive some degree of training or concentration exposure at the three Research/Demonstration sites. Seven students are currently undertaking thesis research under the direction of the TA team and are visiting project subsites. In addition, groups of students use the La Molina facility to do laboratory exercises. Several students are similarly using the Huancayo facility. At all three locations there are impromptu visits of groups of people from various institutions who have heard about and are interested in the program. These are mostly farmers from surrounding cooperatives or groups of engineers from other MinAg offices, technical institutes or universities.

h. Alternative energy sources for moving water will be promoted and demonstrated wherever feasible. No work has been accomplished to date.

i. Training (U.S. or Third Country). None to date.

PROJECT OUTPUTS

	<u>PROGRAMMED</u>	<u>COMPLETED</u>	<u>LIFE</u>
	<u>TO DATE</u>	<u>TO DATE</u>	<u>OF PROJECT</u>
A. <u>Demonstration Sites</u>			
1. La Molina	1	1	1
2. Huancayo	1	1	1
3. Cañete	<u>1</u>	<u>1</u>	<u>1</u>
	3	3	3
B. <u>Interaction Studies</u>			
1. La Molina	2	4	
2. Huancayo	2	2	
3. Cañete	<u>2</u>	<u>0</u>	
	6	6	18
C. Applied Research (Demonstration Studies)	NA	NA	204
D. <u>Applied Research Reports</u>			
1. La Molina	1	1	
2. Huancayo	1	1	
3. Cañete	<u>1</u>	<u>0</u>	
	3	2	9
E. <u>Extension Bulletins</u>	10	8	30
F. <u>National Irrigation Manual</u>	1	1	1
G. <u>Demonstrations</u>			
1. La Molina	20	30	
2. Huancayo	20	25	
3. Cañete	<u>20</u>	<u>10</u>	
	60	65	136
H. <u>Farmer Field Trials</u>			
1. La Molina	3 - 6	0	
2. Huancayo	3 - 6	3	
3. Cañete	<u>3 - 6</u>	<u>0</u>	
	9 - 18	3	54

	<u>PROGRAMMED</u>	<u>COMPLETED</u>	<u>LIFE OF PROJECT</u>
<u>I. Training (National)</u>			
1. La Molina	83 - 100	100	
2. Huancayo	84 - 100	200	
3. Cañete	83 - 100	90	
	<u>250 - 300</u>	<u>390</u>	<u>750 - 1,000</u>
<u>J. Training (U.S. or Third Country)</u>	2	0	6

18. Purpose

To improve on-farm water management practices among small farmers in order to increase production by developing and demonstrating the validity of alternative, improved on-farm water use management practices. This purpose is expected to be achieved through the performance and dissemination of research, creation of a network of farmer field demonstration trials and a national network of irrigation extension.

The project EOPS are (1) Research/Demonstration farms sites functioning with adequate budgets and staff; (2) Increases in efficiency of water use in project area; and (3) Average increase of crop yields in project areas. The only progress made to date in fulfilling the EOPS is the establishment of the project subsites, whose inadequate staff and funding from counterpart sources, as stated above, are proving a real constraint to the successful implementation of project outputs and to the subsequent accomplishment of the project's purpose.

While it is clear that valuable research is being performed in pursuit of project purpose and goals, the diffusion of this research through extension and demonstration, upon which the success of this project will ultimately be measured, is weak. To a large extent, this is a reflection of the extremely weak system of agricultural extension currently existent in Peru. In addition to research and the editing of bulletins, measures must be taken by both the GOP and USAID to insure that irrigation extension is included as a component of a new Agricultural Research, Extension and Education project presently being developed for USAID financing. Measures must also be taken to insure the continued collaboration with project personnel of USAID Loan 059, Sierra Water and Land Use, as well as other GOP and other donor financed irrigation projects directed at the small farmer.

19. Goal/Subgoal

Not pertinent at this time.

20. Beneficiaries

The ultimate beneficiaries are expected to be the target group of small farm families throughout Peru. The project will be especially relevant to the sierra regions where approximately 55% of the population is almost entirely dependent on agriculture for a livelihood and where most farm families own plots of two hectares or less. By permitting intensified exploitation of existing land resources through the improvement of on-farm water management/irrigation, the project is expected to contribute to relieving income constraints of the small farmer family target group.

21. Recommendations

The Agriculture and Rural Development Office must evaluate the performance of the USU TA in this project and offer recommendations on restructuring the USU Scope of Work.

The present Scope of Work requires that the USU specialist coordinate irrigation engineering services with other on-going DCA and USAID programs in agriculture/irrigation, as needed, and as time permits "provided that not more than 10% of the specialist's time is thus needed." Since this evaluation has demonstrated to the Mission that both the purpose and the results of the project to date have been limited, better use of the remaining TA, which will be funded at least until 4/30/81, may be provided by permitting the USU engineer to devote considerably more time to activities under Loan #059 (Plan Meris) as well as provide some technical input into the FY 80 Soil Conservation project.

In addition, immediate action must be taken to identify participants and training programs. If this is not forthcoming, the Mission will be forced to deobligate project funds budgeted for training.