3880019-(3)

PROJECT EVALUATION SUMMARY

(Submit to MO/PAV after each project evaluation) PD-AAD-150-A1

1. Mission or AID/W Office Name USAID/Bangladesh	2. Project Number 388-0019 13p
3. Project Title Small Scale Irrigation I	

4. Key project dates (fiscal years) a. Project Agreement Signed 9/14/76	b. Final Obligation 9/14/76	c. Final input delivered 3/31/79	5. Total U.S. funding life of project $ 14,000,000
6. Evaluation number as listed in Eval. Schedule	7. Period covered by this evaluation From: Sept. 76 (Month/year) To: June 1977 (Month/year)		8. Date of this Evaluation Review July 8, 1977 Month/Day/Year

9. Action Decisions Reached at Evaluation Review, inlcding items needing further study (Note--This list does not constitute an action request to AID/W. Use telegrams, airgrams, SPARS, etc., for action)	10. Officer or Unit responsible for follow-up	11. Date action to be completed
Continue discussions with BDG and AID/W on project revisions as set forth in attached paper.	PDD/AGR	Oct. 1977
Consider sales by private nationwide dealers as an option in the revised project.	PDD/AGR	Oct. 1977

12. Signatures:

Project Officer	Mission or AID/W Office Director
Emory Howard	
Emory Howard, Chief, AGR	Joseph S. Toner, DIR
Date: August 12, 1977	Date:

13. SUMMARY - Summarize in about 200 words the current project situation, mentioning progress in relation to design, prospects of achieving purpose, major problems encountered, etc.

During the first year of this project almost no progress was made toward the target of selling 240,000 handpumps. It had been assumed that the supply of pipes would be sufficient to take care of an expected large demand for handpumps. However, there have been no new pipes of 1.5 inch diameter arriving in the Bangladesh market during the entire project period to date. Therefore sufficient numbers of complete pumps sets have not been available and prices for the new sets on the market have increased significantly. As a result, less than 3,000 have been sold under the project. Discussions began with the BDG as early as last December to try to remedy the situation but essentially the first selling season was lost and the project revisions being considered now are meant to apply to subsequent years.

In addition to the lack of pipe, the project was further hindered by not having one BDG agency that was responsible for implementing the project and also the government had no mechanism of accounting for borrowed funds channeled to the private sector for purchase of raw materials. The government has no effective control once they've gone to the private sector. An additional problem is that the private manufacturers are not willing to order quantities of raw materials or build up large stockpiles of pump sets in the absence of firm orders.

If these problems can be resolved the target of 240,000 pumps can probably be reached witha two year extension of the project.

14. EVALUATION METHODOLOGY - Describe the methods used for this evaluation, i.e. was it a regular or special evaluation? was it in accordance with the Evaluation Plan in the PP with respect to timing, study design, scope methodology and issues? What kinds of data were used and how were they collected and analyzed? Identify agencies and key individuals participating and contributing.

This was a regular annual evaluation. It was delayed about three months from the originally scheduled date because it was felt that pump sales might continue beyond the normal period for winter crops because of the prolonged dry season and because it was hoped that the pipe supply

situation would improve. Due to the failure of the sales program the scope of the evaluation was more limited than envisioned in the evaluation plan of the PP. It dealt mainly with analysing the reasons for failure and devising revisions that will lead to a successful project.

Data on implementation at the local level were gathered through field visits with each BKB Branch Manager. Although BDG representatives did not participate in the review meeting, Mission personnel consulted with officials from the Planning Commission, IRDP, the Government Cooperatives, BADC, UNICEF, IBRD, DPHE, BSEC, and the Ministries of Finance and Industries.

15. Documents to be revised to reflect decisions noted page 1 (other side:)

[X] Project Paper (PP) [X] Logical Framework [X] CPI Network

[X] Financial Plan [ ] PIO/T [ ] PIO/C [ ] PIO/P

[X] Project Agreement [ ] Other

[ ] This evaluation brought out ideas for a new project -- a Project Identification Document (PID) will follow.

16. Evaluation findings about EXTERNAL FACTORS - Identify and discuss major changes in project setting which have an impact on the project. Examine continuing validity of assumptions.

There have been no changes in the project setting. Except for the assumption that local foundries would be able to satisfy demand, the assumptions for the project have not been tested. We have learned that specific provision must be made for import of raw materials, manufacturing, and avilability of pump sets.

17. Evaluation findings about GOAL/SUBGOAL - For the reader's convenience, quote the approved sector or other goal, (and subgoal, where relevant) to which the project contributes. Then describe status by citing evidence available to date from specified indicators and by mentioning progress of other projects (whether or not U.S.) which contribute to same goal. Discuss causes--can progress toward goal be attributed to project, why shortfalls?

"Achieve self-sufficiency in foodgrain production in Bangladesh by 1980." Since very little progress has been made towards achieving the project purpose, contribution toward the goal is minimal. In the FY 1979 ABS the Mission has set its goal as food self-sufficiency by 1985. Therefore the logframe should be revised to reflect this change in the Mission's country goal.

18. Evaluation findings about PURPOSE - Quote the approved project purpose. Cite progress toward each End-of-Project Status (EOPS) condition. When can achievement be expected? Discuss causes of progress or shortfalls.

"Provide farmers with private ownership of small scale irrigation equipment." Less than 3,000 pumpsets have been sold under this project. The causes for this shortfall are:

1) shortage of pipe in-country not only curtailed production but also raised prices to the extent that the pumps were no longer an economical investment;

2) no BDG agency had the responsibility for implementing the project;

3) there is an absence of mechanism within the BDG for taking borrowed funds and channeling them to the private sector for purchase of raw materials, i.e., the government has no effective control once funds have gone to the private sector;

4) the private sector was not willing to use its own funds to build up a sufficient stockpile. The proposed revisions (attached) should remedy these difficulties for subsequent years but achievement of project purpose will be delayed by two years.

19. Evaluation findings about OUTPUTS and INPUTS - Note any particular success or difficulties. Comment on significant management experiences of host contractor, and donor organizations. Describe any necessary changes in schedule or in type and quantity of resources or outputs needed to achieve project purpose.

With the failure of the raw material supply system, it is considered that the project must specifically provide for the import of any raw materials that must be imported rather than assuming that this will be taken care of through the normal demand and supply networks.

20. Evaluation findings about UNPLANNED EFFECTS - Has project had any unexpected results or impact, such as changes in social structure, environment, technical or economic situation? Are these effects advantageous or not? Do they require any change in plans?

None.

21. CHANGES IN DESIGN or EXECUTION - Explain the rationale for any proposed modification in project design or execution which now appear advisable as a result of the preceding findings (items 16 to 20 above) and which were reflected in one or more of the action decisions listed on page 1 or noted in Item 15 on page 2.

The attached paper presents the basis for negotiating revisions in the project with the BDG. The BADC will become the implementing agency for the project, ensuring that the necessary raw materials are imported on time, that there is a sufficient supply of pumps, and that they are distributed through BADC channels. A major change in the project will result from the perceived need for a subsidy to the farmers for purchase of the pumps. The project was designed with the intent that the pumps would be a financially sound investment for small farmers. Price increases since the cost-benefit ratios were calculated however, have made it

necessary to sell the pumps at full cost but without duty and sales tax and without the extra cost involved in local manufacture of pipes. For the pumps to be affordable by the small farmers the BDG must either agree to waive the duty and sales tax, and allow import of pipes, or provide a subsidy.

While relying heavily on BADC for marketing of the pumps, the Mission will also look into the feasibility of channeling some through nationwide, private dealerships to ensure the widest possible distribution.

22. LESSONS LEARNED - What advice can you give a colleague about development strategy-- e.g., how to tackle a similar development problem or to manage a similar project in another country? What can be suggested for follow-on in this country? Similarly, do you have any suggestions about evaluation methodology?

Supply should not be assumed in a market where necessary import is restricted or difficult. In a public sector oriented economy assignment of implementation responsibility within the Government is essential. The role of the Government in dealing with Government - owned funds must be reflected in the procedure for implementation.

23. SPECIAL COMMENTS or REMARKS (For AID/W projects, assess likelihood that results of project will be utilized in LDC's).

None.

July 29, 1977

SMALL SCALE IRRIGATION PROJECT - I

Description and Objectives

The objective of the project will remain unchanged, i.e., to sell approximately 240,000 handpump sets, about half on credit and half for cash.

The principal implementing agency will be BADC to (1) import pig iron (through TCB), coke (through the Controller of Coal and pipe (directly), (2) order manufacture of pumpheads and strainers by the foundries, (3) store the materials and finished products, (4) sell pump sets from about five locations (Chittagong, Dacca, Jessore, Nature and Rangpur are under consideration), (5) maintain financial records, and (6) supervise the Consultant.

The Consultant will assist BADC in supervision of storage construction, preparation of specifications, training in quality control and project coordination.

BADC will be paid in full by the buyer for each pump set, whether it is sold on credit or as a cash sale (through bank draft). Purchase of pump sets from BADC will be by dealers, banks, cooperatives or other similar organizations at a price to be fixed by BADC. The sale price to individuals will also be established by BADC, taking all cost factors into account. Purchase will be for agricultural use. BKB and IRDP with new additions such as the commercial banks will provide credit for approximately half of the purchases by users.

General Budget Procedures

AID will disburse for raw materials through direct payment or Letter of Credit. For local manufacture and storage construction AID will provide an initial advance plus periodic ~~program~~ progress payments. All Consultant costs will be reimbursed by AID directly or under a Letter of Credit.

All items for the BADC budget will need to be provided as a Government loan to BADC in BADC's annual budgets in the years 1977-78 through 1980-81. The total BADC budget requirement will be approximately Tk 12.0 million (see project cost table following), of which an estimate Tk 7.0 million will be required for fiscal year 1977-78 with approximately one-third of the Tk 7.0 million balance in each of the succeeding three years.

Credit will be provided under the normal lending procedures of the banks.

Project Schedule

Sufficient storage facilities and materials will be in place by March-May 1978 to begin sales. Succeeding active sales seasons are contemplated for 1978-79, 1979-80 and 1980-81.

Changes in Documentation

It will be necessary to: (a) provide for a two year extension of the project period; (b) change the project disbursement conditions from a fixed amount reimbursement (FAR) basis to current payment in accordance with the above procedures; and (c) include Consultant services in the project description. These changes will be accomplished through issuance of a Project Implementation Letter (PIL) superseding the arrangements prescribed in the previous implementation Letters.

In addition, the Government of Bangladesh is requested to:

(1) waive the duty and sales tax on imported raw materials and finished products under this project, or provide an allocation to BADC to cover these costs; and

(2) allow the import of 1.5 inch diameter pipes for this project or provide an allocation to BADC to cover the additional costs of local manufacture.

Project Costs for 240,000 Tubewell Sets

(Assuming Waiver of Duty and Sales Tax and Import of Finished Pipes)

Summary (in thousands US dollars)

	Item	BDG	AID	TOTAL
1.	Pipes	-0-	6,192	6,192
2.	Pig Iron	-0-	2,670	2,670
3.	Coke	-0-	389	389
4.	Miscel. Parts and Manufacture	-0-	1,600	1,600
5.	Strainer Manufacture	-0-	739	739
6.	Pipe Sections for Strainers	-0-	688	688
7.	Land Purchase for Storage	124	-0-	124
8.	Internal Trans. of Raw Materials	180	-0-	180
9.	Internal Trans. of Finished Products	180	-0-	180
10.	Port Handling	151	-0-	151
11.	Utilities of Storage Areas	3	-0-	3
12.	Salaries of Storage Personnel	23	-0-	23

13.	Stationary for Storage Locations	6	-0-	6
14.	BADC Hq. Salaries	48	-0-	48
15.	Construction at Storage Locations	-0-	1,050	1,050
16.	U.S. Consultant	80	400	480
17.	Vehicles and Equipment	-0-	80	80
18.	Contingency	-0-	192	192
		800 1/	14,000	14,800

1/ Taka equivalent (in thousands): Tk 12,000 BADC budget. In addition Tk 115,200 (in thousands) will be provided in the usual course of bank lending for credit purchases.

Small Scale Irrigation Project - Project Costs for 240,000 Tubewell Sets

1. Pipes - 240,000 sets x 3 pipes per set x $8.60 per pipe C&F Chittagong equal $6,192,000.

2. Pig Iron - Per cost of $300/MT to produce 27 pumpheads, 8889 MT will be required at a cost of $2,670,000.

3. Coke - Per cost of $175/MT to produce 108 pumpheads, 2222 MT will be required at a cost of $339,000.

4. Miscellaneous Parts Plus Manufacturing of Pumpheads - The cost will be approximately Tk 100 per pumphead for a total of $1,600,000 equivalent.

5. Strainer Manufacture - Cost is approximately Tk 95 per strainer for the traditional method (using brass jacket and screen) and Tk 20 per strainer using the coir method. For project purposes an average cost of Tk 46 per strainer is assumed for a total cost of $739,000 equivalent.

6. Pipe Sections for Strainer - At one-third of a pipe per strainer x $8.60 per pipe the cost will be $736,000.

7. Land Purchase for Storage - 150,000 sq. ft. will be required or about 3.5 acres at an average estimated cost of Tk 530,000 per acre equals a total of $124,000 equivalent.

8. Internal Transport of Raw Materials - BADC's standard estimate is Tk 100/MT for transport from the port to any location in Bangladesh. The total MT involved is calculated as follows:

Pipes (at one kilo per RFT)	16,000 MT
Pig Iron	8,889 MT
Coke	2,222 MT
	27,111 MT

The total cost comes to $180,000 equivalent.

9. Internal Transport of Finished Products - The total tonnage will remain about the same as above (coke will be used up but miscellaneous parts will be added). Therefore, the same cost estimate is used at $180,000 equivalent.

10. Port Handling - BADC's estimate is Tk 84/MT giving a total cost of $151,000 equivalent.

11. Utilities at Storage Areas - BADC estimates Tk 250/Month x 36 months for each location times five locations for a total cost of $3,000 equivalent.

12. Salaries of Storage and Construction Personnel - For each of the five locations, one storekeeper, one assistant storekeeper and three guards for three years and one assistant engineer and one sectional officer for one year are needed. The total cost is estimated at $23,334 per BADC letter of July 7, 1977 plus 20 percent for salary increases equals $28,000 equivalent.

13. Stationery for Storage Locations - BADC estimates Tk 500 per location per month for a total cost of $6,000 equivalent.

14. BADC Headquarters Salary Costs - One Project Director of the rank of Superintendent Engineer, two executive engineers, two assistant engineers, one accountant, two lower division assistants, one stenographer, two typists and four peons are estimated as a minimum by BADC in addition to the Consultant. Salary and related costs are estimated at $40,000 per BADC letter of July 12, 1977 plus 20 percent for salary increases equals $48,000 equivalent.

15. Construction of Storage Locations - Half of the total 150,000 sq. ft. storage space will be pucca, covered and half will be hard surface open storage. Including ancillary buildings, approach roads and boundary walls, construction costs are estimated at $12 equivalent per sq. ft. for the covered storage and $2 equivalent per sq. ft. for the open storage. The total is estimated at $1,050,000 equivalent.

16. U.S. Consultant - The Consultant costs will include: (a) 12 work months of engineering assistance and construction supervision for the storage construction; (b) 24 work months for a mechanical engineer with special experience in foundry work. The total estimated cost including fixed fee is $400,000. In addition the Bangladesh Government will meet the costs of income tax on the Consultants' expatriate employees' salaries estimated at 65 percent of those salaries equalling a total of $80,000. Therefore the total costs in this category will be $480,000 equivalent.

17. Vehicles and Equipment - (a) Four vehicles (plus operation, fuel and maintenance), two for construction and two for monitoring and inspection, plus five to ten bicycles for the field locations; (b) office and other equipment, e.g., typewriters, calculating machines and a duplicating machine. The total estimated cost is $80,000.

18. Contingency - $192,000

Credit

It is estimated that one half of the pump sets will be sold through credit. An estimated average loan amount of $62 (or Tk 932) per tubewell gives a total estimated cost of credit or $7,440,000 equivalent.

Cost Per Tubewell Set

(Imported Pipe)
(In Taka)

	Base Cost	Import Duty	Sale Tax	Total
1. Head (Pig Iron, Coke, Miscel. Parts, and Manufacture)	291	17	23	331
2. Pipes (3)	387	135	104	626
3. Strainer (one third of a pipe and manufacture)	89	15	12	116
4. Transportation and Port Handling	32	-	-	32
5. Storage (Land Purchase, Utilities Stationery, Salaries, and Construction)	79	-	-	79
6. Consultant, Vehicles, and Equipment	35	-	-	35
7. Contingency	12	-	-	12
	925	167	139	1231

Notes:

A. The base costs in each case are directly derived from the project costs on page 2 and 3 above. (Divide by 240,000 pumps and multiply by Tk 15/$).

B. For Heads, import duty is taken at 10 percent of the landed costs of the pig iron and sales tax is taken at 7.5 percent of the duty paid value.

C. For pipes, the import duty is taken at 35 percent of the landed cost and sales tax is taken at 20 percent of the duty paid value.

D. The strainer cost was computed as follows:

	Base	Duty	Sale Tax	Total
One Third of a Pipe	43	15	12	70
Manufacture	46	-	-	46
	89	15	12	116

Cost Per Tubewell Set
(Local Pipe)
(In Taka)

	Base Cost	Import Duty	Sales Tax	Total
1. Head (Pig Iron, Coke, Miscel. Parts, and Manufacture)	291	17	23	331
2. Pipes (3)	591	91	228	910
3. Strainer (One Third of a Pipe and Manufacture)	112	9	25	146
4. Transportation and Port Handling	32	-	-	32
5. Storage (Land Purchase Utilities Stationery, Salaries and Construction)	79	-	-	79
6. Consultant, Vehicles and Equipment	35	-	-	35
7. Contingency	12	-	-	12
	1152	117	276	1545

Notes:

A. The base costs for items 1, 4, 5, 6 and 7 above are derived from the project costs on pages 2 and 3 above.

B. For Heads, import duty is taken at 10 percent of the landed cost of the pig iron and sales tax is taken at 7.5 percent of the duty paid value

C. For pipes, the total cost is derived from a retail price of Tk 15.13 per RFT x 60 feet. The base cost, the import duty and the sales tax are then taken at 65 percent, 10 percent and 25 percent, respectively, of the total based upon information taken from a letter from the Bangladesh Steel and Engineering Corporation dated January 21, 1977.

D. The strainer cost was computed as follows:

	Base	Duty	Sales Tax	Total
One Third of a Pipe	66	9	25	100
Manufacture	46	-	-	46
	112	9	25	146