

PD-ABD-530

391-0467

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
AGRICULTURAL AND RURAL DEVELOPMENT DIVISION
ISLAMABAD - PAKISTAN

IRRIGATION SYSTEMS MANAGEMENT PROJECT
ATTACHMENT TO
FIRST EVALUATION REPORT

MARCH 1980



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dated March 10, 1985

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The Contracting Officer,
PDM/PCO, USAID,
Islamabad.

Subject:- SERVICES IN CONNECTION WITH FIRST EVALUATION OF
IRRIGATION SYSTEMS MANAGEMENT PROJECT (391-0467)
UNDER CONTRACT NO. 391-0467-0-00-5026-00 DATED
FEBRUARY 3, 1985.

Dear Sir,

In pursuance of our subject-identified Contract, we have jointly inspected the selected schemes of ISM Project with the Team Leader Mr.C.Blair Allen, in all the four Provinces of Pakistan, had discussions with the concerned PID Officers, supervisory consultants, long-term consultants and almost all the other connected organizations and helped the Team Leader in preparing and submitting the joint Evaluation Report. However, pursuant to Article-'C' of the Contract, we feel privileged to enclose herewith a separate report by NDC which is an attachment to the Main Report as mentioned in para relating to "Rehabilitation Scheme Observations", under Section-IV captioned " The Pakistan Context - Evaluation Base".

In order to avoid duplication/repetition and avoidable bulk of this Report, discussion on items already covered in the Joint Report have been omitted.

It will be pertinent to point out that we were invited to sign the Contract on February 3, 1985 and immediately thereafter we were required by the Team Leader to accompany him to the field visits starting from the next day morning (time 06.00 hours). In this way we had to study various documents given to us, concurrently with the conducting of the tour and recording of the observations. These activities continued almost un-interrupted upto February 21, 1985. It may, therefore, be kindly appreciated that we have tried to give our best which was humanly possible for such a vast coverage in such a short time. Therefore, resultant omissions and commissions, if any, are regretted.

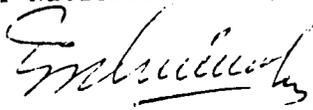
We hope that in future occasions, sufficient time will be given to study the Project, make necessary plans for field observations and then write the report. It is further desired that a proper format for the Evaluation Reports may be evolved and issued for future guidance.

(contd.)

We hope this submission will fulfill your requirements.

Assuring you of our best services and cooperation at all times,
we remain,

Yours faithfully,
for National Development Consultants (Regd)


(Engr. S. N. H. Mashhadi)
Managing Partner

Enclosures: 5 sets of Attachment each comprising:

- i) Text - 7 pages
- ii) Appendix-A - 4 pages
- iii) Appendix-B - 8 pages
- iv) Appendix-C - 14 pages
- v) Appendix-D - 6 pages
- vi) Appendix-E - 5 pages

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- C

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IRRIGATION SYSTEMS MANAGEMENT PROJECT

FIRST EVALUATION REPORT

(ATTACHMENT)

1.0 OBJECTIVE

The objective of the contract(s) is to strengthen the capabilities of the federal and provincial Government of Pakistan institutions which are involved in the planning, design and maintenance of irrigation systems to support irrigated agriculture.

2.0 INTRODUCTION

The Pakistan Indus Irrigation system is the largest contiguous irrigation system in the world. The total length of the canal system is about 58,500 kilometers (km) with watercourses, farm channels and field ditches running another 1.6 million km. Total length of surface drains is over 14,000 km. However, conditions of these canals and drains have deteriorated due to lack of adequate maintenance.

The seven-year AID-financed Irrigation Systems Management (ISM) Project, which will be co-financed by AID and the World Bank (IBRD) through its International Development Association (IDA) affiliate under the Irrigation Systems Rehabilitation (ISR) Project, is designed to assist the Government of Pakistan (GOP) and the four Provincial Irrigation Departments (PIDs) to rehabilitate currently deteriorated surface canals and drains, and to improve federal and provincial capability to plan, design, research, operate and maintain the country's irrigation systems so that reliable and equitable water supplies are available to the irrigated agriculture sector.

This project is closely linked to the IBRD's \$40 million ISR project. While the IBRD project focuses almost exclusively on rehabilitation works, the A.I.D. project addresses, in addition, water and institutional policies and practices through reform, directed planning and research programs, and action programs to implement policy reforms. The A.I.D. project also takes the first steps toward the long-term goal of integrating water, land, and farmer resources, known as the Command Water Management (CWM) concept.

Both A.I.D. and IBRD financing will be administered in a parallel manner for rehabilitation of civil works in a ratio of about one-third to two-thirds respectively. IBRD will fully fund the services of a local Supervisory Consultant firm for overseeing the progress of all rehabilitation activities and partially finance the services of a local evaluation/ research organization. A.I.D. will share in the financing of the services of the local evaluation/ research organization and will fully fund all the expatriate technical assistance, training, earthmoving and workshop equipment and spare parts as well as hydraulic measurement and research equipment, all required to achieve project objectives. Most of the equipment to be financed by A.I.D. will be provided under the A.I.D. - financed Agricultural Commodities and Equipment Program (391-0468) AID and IDA financing have been provided on terms aimed at ensuring that adequate financing of the operation and maintenance (O&M) costs of the irrigation systems are available to prevent the deterioration of rehabilitated canals and drains as experienced in the past.

3.0 THE AID-FINANCED ISM PROJECT

The AID project consists of four distinct but complementary and interrelated components as follows: (1) rehabilitation works; (2) institutional improvement involving management and technical skill development; (3) planning, policy implementation, and research; and (4) command water management (CWM). For the fourth component, feasibility studies are underway to assist AID and the GOP to design a pilot activity which AID proposes to fund through an amendment to the existing ISM project. The sub-paragraphs below provide a brief description of each of the project's components.

3.1 Rehabilitation Works

The objectives of this component are to assist the GOP, in cooperation with the IDA project, to; (a) rehabilitate and maintain an estimated 14,000 km of canals and about 3,500 km of surface drains; and, (b) strengthen its human and physical resources and management operations to plan and design civil works activities and effectively operate and maintain the entire irrigation system.

3.2 Institutional Improvement: Management and Technical Skill Development

Institutional improvement will take place at both the provincial irrigation departments (PIDs) and federal levels. In order to increase the capability of the PIDs to operate and maintain the entire system, the following activities are planned; (a) new earthmoving and workshop equipment and spare parts will be provided to increase existing machinery stocks; (b) PID maintenance workshops will be upgraded; (c) improved canal control systems will be developed and institutionalized to enable the PIDs to manage and operate machinery efficiently for preventive maintenance of civil works; (d) canal design capacity will be improved to reduce continuing maintenance demands; (e) substantial management training will be provided for PID personnel; and, (i) a Management Information System (MIS) will be developed and institutionalized to generate information needed for management control and decision-making. In order to increase the capability of federal level bodies, namely, the Ministry of Water and Power and the Water and Power Development Authority (WAPDA), to coordinate both water policies and storage supplies, the following activities will occur: (a) the establishment of a Federal Coordinating Cell (FCC) to ensure effective implementation, coordination, and supervision of the project; (b) the establishment of a Central Procurement Office (CPO) to order spare parts routinely and to serve as an expeditious channel for emergency orders; and, (c) the expansion and application of a water management computer modelling system in WAPDA to monitor total water supplies and scheduled distribution.

3.3 Planning, Policy Implementation, and Research

The objectives of this component are to: (a) strengthen the capacity of the PIDs to engage in the planning process for future projects in the water sector and to continue, with WAPDA, the transformation of policy guidelines into action programs; and, (b) strengthen existing critical research programs in areas of water management both within and outside the Indus System.

3.4 Command Water Management

Once operational, this component is intended as a pilot effort to

integrate the management of irrigation water at all levels within canal commands. The objectives of this effort are to: (a) substantially increase agricultural production in selected pilot areas through improved water management; (b) develop water management techniques and programs which can be replicated throughout the country; (c) reduce inequities in actual water deliveries at all levels; and, (d) build within the provincial agencies (i.e. Irrigation and Agriculture Departments and WAPDA) a continuing capability for planning, implementing, and operating integrated programs for irrigated agriculture.

This component shall not be considered for evaluation since its implementation is yet to be taken up.

4.0 OVERALL IMPLEMENTATION PROGRESS BY COMPONENTS OF THE PROJECT

Assessment of implementation against the components identified in para-3.0 are discussed hereunder on the lines suggested in the Scope of Work for the Evaluation Team.

4.1 Rehabilitation Works

- (a) The adequacy of institutional arrangements, systems of operation and work plans.

The age-old system of working in the PIDs is gradually changing to the new system of working being inducted by USAID, prc/checchi and NESPAK. This transition will, however, take some time to achieve the objectives. People in the PIDs are gradually realising the usefulness of this new approach.

- (b) The performance in providing/utilizing project inputs, such as technical assistance, equipment for canal and drain rehabilitation, spare parts, workshop equipment, training of a cadre of engineers to effectively carry out irrigation systems rehabilitation, etc.

The performance regarding the supply of equipment for the canals and drains rehabilitation, spare parts and workshop equipment is quite in accordance with the schedule. The staff provided in the Project for technical assistance, training of a cadre of engineer to effectively carry out irrigation system rehabilitation etc., is ultimately on the job after passing through initial delays. Training of staff is already in hand. 27 engineers selected from the four PIDs have already completed 12 weeks course at Lahore and are currently undergoing another course at Hyderabad after which another course will be held at Peshawar. The progress on the in-service training seems to be quite satisfactory.

- (c) The institutional roles of, as well as level of coordination and working relationships among the Federal Project Review Board (FPRB), National Engineering Services of Pakistan (NESPAK), A.I.D., IBRD, WAPDA, WMRC, the Project Management Advisor, and the USAID-funded PRC/Checchi long-term technical assistance team.

Although all the organizations are working against a common goal still it is felt that there is need for improvement in the working relationships and level of coordination between the various agencies. More details are available in the Main Report.

(d) The progress made in commodity procurement activity.

All the PIDs had listed out their requirements regarding heavy machinery and workshop equipment. Almost all the machinery and equipment provided for the fiscal year 1983-84 and 1984-85 have been received and their details are attached as Appendix-A.

(e) The performance of Agricultural Commodities and Equipment (AC&E) Program as a means of providing equipment and training on that equipment to PIDs.

AC&E programme has helped a lot for the procurement of heavy machinery and workshop equipment. This programme was already in operation prior to the commencement of ISM Project and had crossed all the official formalities required to be overcome before the placement of orders on the foreign suppliers. Resultantly all the desired machinery and equipment was received by the PIDs as per their planning during the fiscal year 1983-84 and 1984-85.

(f) The status of workshop remodelling activities

There are only six workshops to be rehabilitated, one in NWFP at Peshawar, one in Baluchistan at Quetta, one in Sind at Jamshoro and three in the Punjab at Moghalpura (Lahore), Bhalwal and Multan. The status of their upgrading is shown in Appendix-B.

(g) The progress made in irrigation systems rehabilitation activities.

The status of implementation of 148 schemes during the first 18 months of the Project as on 31.12.1984 - as ascertained during the discussion with the 4 PIDs, NESPAK, prc/checcchi Inc. is as below:

	<u>NWFP</u>	<u>Baluchistan</u>	<u>Sind</u>	<u>Punjab</u>
1. Total No. of Schemes included in ISM Project (after incorporating the deletions).	9	3	88	48
2. No. of Schemes scheduled upto June, 1985.	8	3	42	24
3. Schemes prepared by PIDs and submitted to NESPAK.	10	2	65	32
4. No. of Schemes under review/ observation by NESPAK and PIDs.	4	2	59(*)	11
5. "PIL" Requested by NESPAK.	6	2	6	21
6. "PIL" issued by USAID.	6	2	5	12
7. Schemes under execution.	3	-	-	9
8. Schemes Completed.	3	-	5	-

(*) Most of them are back with the Department.

Details regarding the status of completion and observations pertaining to the schemes actually visited by the Evaluation Team are given in Appendix-C.

- (h) The implementation of fixed amount reimbursement system including an examination of the adequacy of reimbursement and inspection criteria.

It is covered in the Main Report.

- (i) The adequacy of host country counterparts to all long-term consultants

Owing to the procedural difficulties PIDs are not feeling easy to provide wholtime counterparts to all long-term consultants. There are certain bottlenecks which need to be overcome with the help of competent authority.

- (j) Progress in meeting operation and maintenance (O&M) budgeting requirements.

The century-old system of maintenance and budgeting needs radical changes. However, all the 4 PIDs are trying to get enhancement in their O&M costs and are hopeful that their endeavours will meet with success. This needs long procedure to be followed before getting sanction by the competent authority.

- (k) Progress made by the Government of Pakistan in establishing a Centralized Procurement Office (CPO) for the purpose of expeditious procurement of equipment and spare parts for PIDs.

Owing to certain formalities to be observed, the CPO has not been established as yet. It is learnt that the same has been deferred to the year 1985-86.

- 4.2 Pinpoint those Project activities that were scheduled to be initiated and/or completed during the first 18 months of the Project's implementation but have not been launched. Suggest changes in the project implementation plan to accommodate these activities, keeping in view the problems which resulted in their not being implemented on schedule.

During discussions with the PIDs it has revealed that almost the activities were launched against all the scheduled items regarding channels, Drains and Workshops. However, the establishment of Central Procurement Office (CPO) at Islamabad has been delayed and deferred to the fiscal year 1985-86 as explained in the Main Report.

- 4.3 Identify problems/constraints hindering project implementation

- 4.3.1 Rehabilitation Works

i) In accordance with the PIDs procedure, estimates of works are prepared by the Executive Engineers, then submitted to the Superintending Engineer, Chief Engineer, Provincial Project Coordinator, and then NESPAK and USAID. The same channel is crossed for their return to Executive Engineer. This is a very lengthy procedure and can be curtailed by eliminating the routine forwarding agencies and bringing down to the working levels.

ii) There exist virtually no standard design criteria to be followed by most of the PIDs. It creates difficulty in the preparation and checking of schemes.

iii) The Provincial Project Coordinators generally have a grouse of lack of staff and other facilities provided to their counterparts in the Department. Obviously they feel handicapped in working in the new environment to which they are not used to.

iv) Existing rules in PIDs do not bind a person to remain in design office or the field for tenures longer than three years at a time. Transfers are frequent and essential after completion of the tenure at one place. Further there is no incentive for the people to work in design offices as compared to their counterparts in the field.

v) Trained operators for heavy machinery and equipment are generally not available due to their migration to Middle East countries. If available, it is difficult to retain them at the present pay-scale in the PIDs. If newly recruited staff is trained at the cost of machinery even then it remains a problem to retain them. The problem is likely to become more acute on the coming in of Kalabagh Dam Project.

vi) There exists no system of inventory control for warehouses except at Central Stores Division, Irrigation, Moghalpura, Lahore. Non-existence of the system results in a mess and sometimes stores are identified which are already available in stock.

4.3.2 Design Considerations

i) There is a need for the standardization of the designs before preparing the schemes for rehabilitation. In the absence of this, different PIDs prepare schemes according to different criteria and accordingly NESPAK has no standard guidelines for checking the schemes based on the same. For instance in NWFP, inspection of Suruzai Drain revealed that excavation is being done with $\frac{1}{2}$:1 side-slopes in an area where the water table is just at the ground surface. This is resulting in sloughing of side slopes and in turn choking the section and reducing the capacity of the drain.

Similarly in Punjab, the side-slopes of the Raiwind Drain (Kasur Distt.) specially in outfall reach RD 0-80 are being excavated with 1:1 side slope and big chunks of earth from the side slopes are falling back into the drain. So, if the outfall reach is choked immediately after completion of rehabilitation work, the objective of rehabilitation is likely to be jeopardized. Same applies to Ghazighat Drain (Muzaffargarh Distt.).

ii) Provision for compaction of the dowel only over an uncompacted canal/drain bank needs re-consideration to exercise economy. In fact compaction is needed only at places where the bank has to retain water inside or outside the canal/drain.

iii) In one of the drainage schemes, it was noticed that no permanent inlet structures were provided and the overland flow resulting from the rains is let into the drain by cutting the banks at certain points by the cultivators. This results in erosion of the soil and washing it back into the drain and choking its section.

iv) The Project outlines rehabilitation of the canal or drain system or a sub-system as a whole, according to the last-designed or present operating conditions whichever is greater. In cases where last designed parameters

are not to be followed there is need for proper design of the channel as a whole according to present conditions to be approved by the competent authority. This will further necessitate redesigning the outlets and this change can be carried out only after getting the revised L-section and Alteration form sanctioned. However, it has been noticed that in certain schemes only nominal or local repairs are being done and those, too, in different reaches of a single channel. For instance, providing stone pitching in two or three RDs in a channel length of 15 to 20 RDs cannot be termed as rehabilitation although such repairs are definitely improving the working efficiency of the channel to some extent.

v) In one of the drainage schemes it was noticed that the earth excavated from the bed was being placed immediately above the channel prism which is sure to be washed back into the channel. No inspection path along the drain was provided. So while fixing the design section in the schemes due considerations should be given to providing a proper berm and inspection path and designation of the spoil bank at a safe distance from the drain or canal prism.

vi) In order to accelerate the preparation, submission and approval of the schemes there is need for fixation of the proper design criteria in each province according to their prevalent practices and local conditions.

vii) After fixation of the design criteria proper guide-lines should be issued for the preparation, checking and execution of the schemes and the same should be meticulously followed at all levels so as to avoid unnecessary delays.

5.0 TIME FRAME OF THE EVALUATION AND THE SITES VISITED

Details pertaining to the itinerary of the visits of the Evaluation Team during the period from February 3, 1985 to March 6, 1985 are contained in Appendix-D.

6.0 LIST OF PERSONS CONTACTED AND INTERVIEWED DURING THE EVALUATION PROCESS.

During the process of visits, evaluation team contacted a good number of persons in all the four provinces. Their names, designations and possible contacts are embodied in Appendix-E.

PROGRESS MADE IN COMMODITY
PROCUREMENT ACTIVITY

USA ID/ARD/ ISLAMABAD/ PAKISTAN
ISM PROJECT
CONSTRUCTION EQUIPMENT RECEIVED DURING YEAR FY 1983-84 *

APPENDIX-A
(Sheet 1 of 4)

ITEM	DESCRIPTION	UNIT COST		TOTAL CIF		JURISDICTION PAKISTAN												DATE										
		CIF KAR	NO	COST	NO	PUNJAB			SIND			NWFP			BALUCHISTAN				INLAND TRANSPORTATION & WHARFAGE									
		DOLLARS		DOLLARS		DOLLARS	NO	COST	NO	COST	NO	COST	NO	COST	NO	COST	NO		COST	PUNJAB	SIND	NWFP	BALU.	RUPEES	RUPEES	RUPEES	RUPEES	
1.	Bulldozer 300/350HP																											
2.	Bulldozer 200HP																											
3.	Bulldozer 140HP	131,616.86	1	131,616.86				131,616.86																				
4.	Bulldozer 70HP																											
5.	Scraper 8/11CY																											
6.	Scraper 17/21CY																											
7.	Dragline 2.5CY	353,393.38	2	706,786.76	2	706,786.76																						
8.	Dragline 1.5CY	221,097.42	8	1,768,779.36	8	1,768,779.36																						
9.	Dragline .75CY W/CR.	168,669.11	7	1,180,683.77	6	1,012,014.66																						
10.	Backhoe .75CY Amph.																											
1.	Backhoe .75CY CR.MTD.	184,450.80	6	1,106,764.80	2	368,921.60																						
2.	Backhoe .75CY Wide TR																											
13.	Backhoe .50CY CR.MTD.																											
4.	Excavator T/BM CR.MT.	194,227.69	3	582,683.07	2	368,455.38																						
5.	Excavator T/BM RTM.																											
15.	Small Exc T/BM RT MTD																											
7.	Motor Grader 150HP																											
18.	Compactor Self Pro 6T	56,827.02	7	397,789.14	5	334,135.10																						
19.	Compactor Self Pro 11	8,765.65	30	262,969.50	15	131,484.75																						
0.	Compactor Hand Vib PL	4,157.35	110	457,308.50	36	149,664.60																						
21.	Dump Truck 10T	78,257.68	24	1,878,184.32	16	1,252,122.88																						
22.	Dump Truck 8T	44,709.76	8	357,678.08																								
3.	Fr. End Load 2.5CY RT.																											
4.	Fr. End Load 1.5CY RT.																											
15.	Fr. End Load/Backho RT																											
TOTAL			206	8,831,244.16	92	6,062,365.09	79	1,094,775.60	18	824,046.87	17	850,056.40	11,036.614	58,964	160,946	145,733												

Notes: *Pakistan FY.

APPROVED BY _____
CHECKED BY JRQ _____
SHEET 1 OF 2 (WANG #0738V)

USAID/ARD/ISLAMABAD/PAKISTAN
ISM PROJECT
CONSTRUCTION EQUIPMENT UNDER PROCUREMENT DURING YEAR FY 1984-85*

APPENDIX-A
(Sheet 4 of 4)

ITEM	DESCRIPTION	JURISDICTION PAKISTAN															
		UNIT COST		TOTAL CIF		PUNJAB		SIND		NWFP		BALUCHISTAN		INLAND TRANSPORTATION & WHARFAGE			
		CIF KAR	NO	COST	NO	COST	NO	COST	NO	COST	NO	COST	NO	COST	PUNJAB	SIND	NWFP
DOLLARS**		DOLLARS**		DOLLARS**		DOLLARS**		DOLLARS**		DOLLARS**		DOLLARS**	RS.***	PS.***	RS.***	RS.***	
26.	Low Bed Trailer	44	2	88			2	88									
27.	Low Bed Trail 50T WPM	316													10		
28.	Low Bed Trail 35T WPM	140															
29.	Flat Bed Truck 8T	40															
30.	Deep																
31.	General Purpose Truck																
32.	Water Truck 2500Gals	61	8	488			4	244			4	244		26			80
33.	Fuel Truck 2500Gals	61	4	244			4	244						26			
34.	Fuel Trailer 600Gals	9															
35.	Lube Truck	62	5	372			4	248			2	124		26			35
36.	Cable Tool Well Drill	435															
37.	Gen Set 50KW	22	4	88													
38.	Mob. Light Plant 10KW	13	4	52			4	52			4	88					15
39.	Mobile Crane 35T RI	218	1	218										4			
40.	Small Mobile Crane	218	1	218							1	218					40
41.	Wood Cutting Boat	25	3	75			3	75	1	218						50	
42.	Dredge Small 150HP	117												6			
Sheet 1 of 2		267		19,106	148	9,963	120	6,595	7	368	16	1,980					
This sheet		30		1,843		0	21	951	1	218	14	674	1,035	477	103	277	
TOTALS		317		20,949	148	9,963	141	7,546	8	786	30	2,654	1,035	575	153	467	

Notes: *Pakistan FY.

**All Equipment cost figures are in \$,000.

***All Transportation cost figures in Rs.000.

APPROVED BY _____
CHECKED BY JRO _____
SHEET 2 OF 2 (WANG #00377)

WORKSHOP REMODELLING ACTIVITIES
(REHABILITATION & UPGRADING)

N.W.F. PROVINCE

I- Number & Name of Scheme: ISRP-UN-20 Rehabilitation of Irrigation Workshop., Peshawar.

II- Estimated Cost Rs. 1.2 Mln

III-Observations after Inspection:

- Estimate for the Rehabilitation of the workshop building has been sanctioned, tenders received and are under the process of evaluation. Work will be started after selection of the contractor. Lowest tendered amount is Rs. 1.5 Mln and work is expected to be completed in a period of nine months after the award of the contract.
- It was informed by the PID representative that the over-head clearance for the bridge crane and the vertical hoist as provided in the drawings was not commensurate with the dimensions of the two-machines. They had reportedly informed the Pioneer Consultants and USAID office to take a note of this implication and provide necessary remedial measures in time.
- Presently there neither exists any proper drainage system for the workshop premises nor it has been provided in the sanctioned plans. However it was felt that provision of brick paving sloping towards a central covered drain should be provided to avoid slushy conditions in the compound during rains.
- Most of the workshop area is littered with junk casing pipes, old machinery and different types of condemned equipment. All these have to be removed to clear the area to enable the Contractor mobilize to undertake the rehabilitation of workshop building.
- It was informed that the department plans to transport all the new and old machinery and equipment to some other temporary premises and bring these back after completion of the rehabilitation work. Some of the machines and trailers are so big in size that they were brought in the existing workshop building with great difficulty. It may be considered if such transportation and re-transportation could be avoided to create a working atmosphere free of congestion and impediments in the work shop premises. All the old, surplus and inserviceable items need disposal or if needed the same should be housed in some additional building.
- Satisfaction was shown on the timely receipt of equipment and machinery on schedule.
- Equipment received is dumped in the workshop compound for want of space and some spare parts crates are lying in the dumper trucks in the open. This warrants for early rehabilitation of Workshop and installation of machinery so that these are brought under intended use and saved from further damages.
- Mr.Patten pre/checchi equipment specialist intimated that there is no proper system for record and inventory control of the equipment and spare parts. He is trying his best to introduce the improved methods.

Observations after Inspection (Contd)

- PID officers were of the opinion that sludge hammers provided with Bucyrus Eire percussion rig were of very poor quality and did not suit the local conditions. One of the hammers had broken during trial operation. The possibility of its transfer to some other province may be looked into where it could be usefully deployed.
- Deep concern was shown by PID representatives and Mr. Patten over the fact that provision and retention of staff for maintenance and operation of such a heavy machinery appears to be a difficult proposition. Under the existing service conditions it was not possible to recruit and retain experienced staff at meagre emoluments as compared to their counterparts in the private sectors. Generally low-paid and in-experienced operators had to be employed at the cost of the machinery.
- If young qualified sub-engineers or operators are trained for the specific machines, they are likely to run away after getting training for better prospects elsewhere. This needs consideration for the concerned authorities for creating special workshop cadre to induct people into such jobs.

BALUCHISTANWORKSHOPS

- I- No. & Name of Scheme: ISRP-UB-11 Rehabilitation of Quetta Workshop.
- II- Estimated Cost: Rs. 2.4 Mln.
- III- Observations after Inspection:
- Estimate for the rehabilitation of the Workshop is under action. In the original design of the building, provision for the seismic effect was omitted. So the drawings have been returned to the Consultants for making such provision.
 - Workshop was built about three years back with 2-inch flooring. Now this will be reconstructed as industrial flooring.
 - Regarding drainage of the Workshop area, some drains already exist and more shall be dug during rehabilitation process.
 - 10,000 gallons overhead reservoir shall also be constructed to provide dependable water supply to the Workshop.
 - Mr. Corpus, Equipment Management Advisor, informed that he is machine shop specialist and is also looking after management, warehouses and inventory control. He has prepared card index system for the existing equipment and is trying to bring everything to such a level where it can be usefully deployed.
 - Mr. Corpus informed that he had prepared the deployment schedule for the earthmoving machinery and it is working accordingly. This action was appreciated by the team members.
 - Regarding improvement of capability of the Workshop it was informed that after the rehabilitation of the Workshop it will be possible to overhaul the tractors therein.
 - It was informed that there is no factory in the country which can manufacture big rubber tyres for big trucks and compactors.
 - On enquiry by Mr. Allen, whether there will be trained staff to look after/supervise the operations of heavy machines after the departure of AID Advisors, it was stated by Mr. Corpus that initially one Assistant Engineer was attached to work with him wholetime and he had started picking up things in two months or so but he was transferred. Another gentleman had replaced him but he was a casual worker. So with such an arrangement, unless improved or amended, there is likelihood of great difficulty in maintaining such heavy machinery later on.
 - Regarding training of operators, it was informed that certain greasers have been trained to do this job. However, the Govt. is revising the pay-scales for giving incentive to the operators and this act might help in retaining the operators.

Observations after Inspection (Contd)

- Regarding renting out of the machinery to the contractors, it was informed that it is not directly given to the contractors, but the same is done through forced account.
- Generally there is one meeting in two months for discussing the problems and matters of common interest for all the four provinces and normally the requirements are routed through the Chief of the Party.
- Regarding his counterpart relationship, it was informed by Mr. Corpus, that he is wearing five hats and cannot devote enough time to this scheme.

SIND PROVINCE

I- No. and Name of Scheme: ISRP-US-48 Rehabilitation of Jamshoro Workshop.

II- Estimated Cost: Rs. 3.588 Mln.

III- Observations after inspection:

- This Workshop was established in the year 1950 during the construction of Kotri Barrage. It was serving the purpose of a temporary field Workshop but now it will be up-graded to a standard Workshop under this rehabilitation programme.
- PID representative informed that standardization of machinery was not possible because it is imported from the country which affords credit, so machinery is imported from Germany, France, Japan, USA etc.
- Regarding inter-transfer of machinery between the four provinces, it was informed that title of ownership lies in the names of provinces, so under the present system it is not possible to transfer but, however, it can be done through CPO after evolving proper procedure.
- Nine firms have been pre-qualified for undertaking the construction job and it was hoped that tenders will be received by 5.3.1985 and decided within two weeks. Proposed completion period is six months.
- Executive Engineer concerned specially requested for getting the building of old power house which is standing in the close vicinity so that overhauling unit could be installed there. This building is lying without any use and belongs to WAPDA.
- Presently there is no proper drainage system in the Workshop area. During monsoon season, lot of difficulty is faced in the movement of machinery. However, this aspect has been looked into in the new layout plan.
- Much of the space is not available to house the machinery and the spare parts. Presently there is no system of inventory control. Mr. Rios Equipment Adviser prc/checchi informed that to start with he had introduced bin card system and has plans to work on master card system.
- The team leader questioned that other provinces may not agree to it. Mr. Rios informed that he will do it first in Sind and request others to visit and see if it could be useful for them also.
- Regarding scheduling of machinery it was informed that XENs of Channel Maintenance Divisions send their requirements to XEN incharge of Workshop who then prepares schedules for the deployment of the machines during the whole of year.
- Present capability of the Workshop is moderate and regulation gates upto certain sizes could also be manufactured. But after rehabilitation even overhauling of heavy machinery will be done.

Observations after Inspection (Contd)

- Pay scale of operators has been raised and it is hoped that they will stay on after getting training.
- Regarding supply of spares, it was informed that the same was done through Director of Industries who is a non-technical person. This system needs revision.

PUNJAB PROVINCE

- I- No. and Name of Scheme: ISRP-UP-52 Rehabilitation of Moghalpura Workshop
- II- Estimated Cost: Rs.5.188 Mln. - Revised to Rs.4.3 Mln.
- III- Observations after Inspection:
- Layout plan for rehabilitation has been approved. At the first instance estimate was prepared amounting to Rs. 5.188 million and tenders were also invited and the bid amount was Rs.5.2 Mln. This estimate was prepared by Pioneer Consultants based on non-scheduled rates. Later on it was desired to base the rates on schedule items and with this change the total amount of estimate works out to Rs. 4.3 million. Its sanction is awaited and further action towards construction will be taken accordingly. P.C.I. Proforma is also not yet approved.
 - It was informed that land required for extension is available and there will be no difficulty in the construction of additional buildings.
 - Regarding supply of machinery, it was informed that Workshop side is lagging behind whereas other equipment has been received satisfactorily.
 - Regarding heavy repairs it was informed that no funds existed to undertake such repairs. O&M costs cannot cope with such requirements. Resultantly the deterioration of the machinery continues and one day it becomes a junk.
 - Present capability of the Workshop is quite good. Facilities to overhaul light vehicles exist.
 - Heavy regulation gates can also be manufactured.
 - In Machine-shop, different types of spare parts can be turned.
 - With the installation of new machinery, capability will be increased. Overhauling of heavy machinery and their repair shall be carried out.
 - Regarding operators of heavy machinery, it was informed that hardly ten percent continue with the department after having been trained and others leave for Middle East. However, to meet this situation, assistant operator or greaser handles the machine at the cost of the machine. There is lot of difficulty in raising their pays. Case has been sent to the Government but approval is still awaited.
 - Regarding availability of spare parts it was informed that the same are purchased from XEN Stores Division on cash payment.
 - In Stores Division, the card index system is used and a huge store is being maintained accordingly. However, this system will further improved by resorting to computerized inventory control procedure for which there appears to be a state of readiness.

I- No. and Name of Scheme: ISRP-UP-54 Up-gradation of
PID Workshop, Multan.

II- Estimated Cost: Rs. 3.417 Mln.

III- Observations after Inspection:

- This Workshop was established 16 years back to cater for the needs of repairing irrigation tubewells installed under grow more food campaign. So its capability was limited.
- Regarding rehabilitation and up-grading of the Workshop it was informed that lay-out plan has been approved but construction could not be undertaken for want of approval of P.C.I Proforma. Construction period of six months has been proposed.
- For the present there was no proper arrangement for the drainage of the Workshop area but in the new plans this aspect has been given due consideration.
- Overhead Reservoir shall also be constructed to meet the future requirements of the Workshop.
- Roads approaching to the Workshop are quite narrow and pose lot of difficulty in the movement of heavy machinery. These will be widened so as to facilitate the transportation activities.
- Land required for extension and other alterations is available. Planning has been carried out in such a way that there will be no difficulty in the movement of machinery within the Workshop premises.
- Lot of junk was lying and PID representative informed that action is being taken to dispose them off.
- Regarding present capability, it was informed that re-winding of motors is being done to meet all the requirements. Impellers of pumps could also be cast and turned.
- Big gates for the Workshop entry could be manufactured.
- It was informed that with the installation of new machinery, capability of the Workshop will be increased manifold. It will be possible to overhaul light vehicles and repair heavy machinery like dozers, draglines, tractors etc.
- A new store shall be constructed for the spares coming in.
- For the present there is no proper inventory control of the stores. This is being improved by starting with the introduction of bin-cards.
- PID representative informed that he had requested Mr. Rusk, Party Chief pre/checchi for arranging training of the operators and the machinists etc. He hoped that trained people will not leave the service as there is not much opening in the private sector around Multan.

IRRIGATION SYSTEMS REHABILITATION ACTIVITIES

CANALS AND DRAINS

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N.W.F. PROVINCE

- I- No. & Name of Scheme: ISRP-UN-12 Mian Gujar Canal
- II- Design Data forming bases of Scheme:
- Head Discharge: 33 cusecs
 - Total Length : 36,000 ft.
 - Bed Width : 6.75 ft.
 - Full Supply Depth(F.S.D): 2.25 ft.
 - Side Slopes: (Pitching) 1:1
 - Longitudinal Slope: 1 in 1,500
 - Thickness of pitching : 1 ft.
- III- Estimated Cost of the Scheme: Rs. 0.5 Mln.
- IV- Extent of Rehabilitation and Items of Work: Providing Stone pitching in the reach RD 15,500 to 19,000 only. For this reach, items of work included, strengthening of banks, compaction of sub-grade, provision of 1.0 ft. thick dry stone pitching, concrete profile walls, a horizontal P.C.C. band six inches thick and P.C.C. coping at the top and bed remained un-lined.
- V- Status of Work on the Day of Inspection: Completed.
- VI- Effect of Rehabilitation: Breaches have been averted in the weak reaches taken up for rehabilitation and regular supplies ensured. After execution of the job, the Channel had run without any problem with full supply discharge for one year.
- VII- Observations:
- Rehabilitation work has been done in a small reach in the middle of the channel without considering the regime and efficiency of the channel as a whole. It was stated that strengthening of the banks and providing stone pitching in this reach has been done to avert breaches due to weak banks and danger of making holes by the burrowing animals.
 - Side slopes have been pitched in conformity with the last designed earthen section without allowing any consideration to the change in 'n' value and resulting change in the roughness factor of the channel section.
 - Part work done in this Channel can be regarded only as a repair work and not rehabilitation.

N.W.F. PROVINCE

- I- No. & Name of Scheme: ISRP-UN-14 Sangu and Sheikhan Branches
- II- Design Data forming bases of Scheme:
- | | Sangu | Sheikhan |
|---|------------|-------------|
| - Head Discharge.Flood/Perennial | 150/10 cfs | 150/16 Cfs. |
| - Length of Channel | 12,500 ft. | 12,000 ft. |
| - Sangu takes-off from Left and Sheikhan takes off from right from horse-shoes bund type temporary weir on Bara River | | |
| - Bed width | 15 ft. | 15 ft. |
| - Full Supply Depth | 2.5 ft. | 2.5 ft. |
| - Longitudinal Slope | 1 in 500 | 1 in 500 |
- III- Estimated Cost of Scheme: Rs. 0.4 Mln(Both Sangu and Sheikhan)
- IV- Extent of Rehabilitation and Items of Work:
- Sangu Branch.Providing stone pitching on side slopes only in reach RD 7,000 to 8,250 vulnerable to breaches and tampering with supplies and diverting it to the adjoining flood channel.
 - Sheikhan Branch-Providing stone pitching on side slopes only in reach RD 3,250 to 4,250 which is vulnerable to frequent breaches.
- V- Status of Work on the Day of Inspection: Almost completed with the exception of PCC coping.
- VI- Effect of Rehabilitation: It is likely to avert breaches in the weak portion and ensure regular wa' supply in the channel.
- VII- Observations:
- Rehabilitation has been done in small local reaches without giving any consideration to the regime and other deficiencies in the branches as a whole. In both the branches the last designed earthen section has been stone lined without giving any consideration to the change in 'n' value and the roughness factor of the channel prism.

N.W.F. PROVINCE

- I- Number & Name of Scheme: ISRP-UN-19, Surizai Drain
- II- Design Data forming bases of Scheme:
- Outfall Discharge: 190 Cubic feet per second(Cfs).
 - Total Length: 22,500 feet(ft.)
 - Bed Width : 12 to 6.0 ft.
 - Full Capacity Depth: 3 to 2 ft.
(F.C.D.)
 - Side Slope : $\frac{1}{2} : 1$
 - Longitudinal Slope: varies between 1 in 500 and 1 in 115.
 - Manning's 'n': 0.025
- III- Estimated Cost of Scheme: Rs. 0.42 Million(Mln).
- IV- Extent of Rehabilitation and Items of Work: Excavation of the drain in its whole length i.e. 22,500 ft.
- V- Status of work on the day of Inspection. Completed.
- VI- Effect of Rehabilitation: It was informed that before the rehabilitation, the drain virtually did not exist except a shallow natural depression. With the implementation of the rehabilitation scheme, a proper man-made drain has been excavated and water table has gone down by five feet within a distance of about half a mile on either side. The area of about 4,000 feet served by this drain remained abandoned for the last ten years but was now seen reclaimed and mostly under plough. Green fields and crops were seen. People were very happy on this achievement.
- VII- Observations:
- Side slopes of $\frac{1}{2}:1$ were found to be too steep in a high water table area and the sub-soil water while seeping into the drain had already resulted in sloughing of side slopes back into the drain. This process is liable to decapacitate the drain in the near future and lessen the effect of reclamation already achieved.
 - Earth dug from the bed has been thrown immediately on the banks without providing any berm which is sure to wash back into the water-way and decrease its effectiveness.
 - No permanent inlet structures have been constructed at the sites where the over-land flow is likely to enter the drain. It was stated that the cultivators cut the banks, whenever required, at suitable places to drain the impounded water.
 - No patrol road has been provided along the drain due to non-availability of land which is very costly and owners are not willing to part with it.
 - No R.D. markers have been fixed along the drain.
 - The congressional mandated requirements for the display of signs at the site of work was not met with.

BALUCHISTAN PROVINCE

I- No. & Name of Scheme: ISRP-UB-7 Anambar Irrigation Scheme.

II- Estimated Cost of Scheme: Rs. 3.78 Mln

III- Observations

The Scheme could not be inspected due to the non-availability of the responsible PID personnel being pre-occupied in important meetings at Karachi, Lahore and Islamabad and travel restrictions to the isolated project sites in their absence.

SIND PROVINCE

- I- No. & Name of Scheme: ISRP-US-9 Nagan Dhoru Outfall Drain
- II- Design Data forming bases of Scheme:
- | | |
|-------------------|--------------|
| Length | 1,34,000 ft. |
| Outfall discharge | 896 Cfs |
- III- Estimated Cost of Scheme: Rs. 5.74 Mln
- IV- Extent of Rehabilitation and Items of Work:
- Bed clearance in reach RD. 0-38, raising of banks in reach RD 45-48, and provision of 17 masonry inlets and one cross-drainage structure.
- V- Status of Work on the Day of Inspection: Scheme has been submitted to NESPAK for further action.
- VI- Observations:
- Scheme was received back twice from NESPAK and once from USAID.
 - On query regarding the mode of excavation in the bed, it was informed that dredgers were proposed.
 - Although the completion date is 30.6.85 yet the XEN, Sujawal Drainage Division showed his fears regarding its timely completion due to delay in the sanction.
 - Outfall reach was found in a very deplorable condition and warrants for immediate action.

SIND PROVINCE

I- No. and Name of Scheme: ISRP-US-10, Sujawal Branch Drain.

II- Observations:

It could not be inspected although it was included in the
list of schemes to be visited.

SIND PROVINCE

- I- No. & Name of Scheme: ISRP-US-11 Bathoro Branch Drain and its system.
- II- Design Data forming bases of Scheme:
- Outfall discharge 314 Cfs.
 - Slope of Banks required Raising 2:1
 - Width of Inspection path: 15 ft.
 - Width of non-inspection path : 8 ft.
 - Length of Bathoro Drain : 107,000 ft.
- III- Estimated Cost of Scheme: Rs. 3.432 Mln
- IV- Extent of Rehabilitation and Items of Work: Rehabilitation work was done in reaches R.D. 28-37, 47-55 and 57-68. Raising and strengthening of banks to avoid spilling of water into the country side, and providing 15 masonry inlet structures.
- V- Status of Work on the Day of Inspection: Work has been completed.
- VI- Effect of Rehabilitation: The agricultural areas and property along the drain has been protected against perpetual flooding and consequential damages.
- VII- Observations:
- Rehabilitation work has been carried out in isolated reaches, instead of examining and providing necessary remedial measures in the system as a whole.
 - The earth work was carried out through local contractors using tractors, trailers and manual labour.
 - Regarding compaction of banks in filling reaches it was informed that the same was achieved through tractor wheels.
 - In reach R.D. 45 to 48 acute problem of weed growth was noticed although it existed to different extents in other reaches also.
 - AID signs were missing. It was, however, informed that the same were fixed while the work was in progress but later removed to the office.

SIND PROVINCE

- I- No. & Name of Scheme: ISRP-US-40 Mashaikh Hoti Distributary.
- II- Design Data forming bases of Scheme:
- Head Discharge: 192 Cfs
 - Width of Inspection path: 12 ft.
 - Width of non-inspection path: 5 ft.
 - Side slopes of banks: 1½: 1
 - Length of Channel 60,200 ft.
- III- Estimated Cost of Scheme: Rs. 2.77 Mln
- IV- Extent of Rehabilitation and Items of Work: Raising of both the banks from head to tail, earthwork from outside and raising of bridges. No work was involved within the channel prism.
- V- Status of Work on the Day of Inspection: Completed in 1983-84.
- VI- Effect of Rehabilitation: Safety of banks and running of full supply discharge throughout the year has been ensured alongwith increase in the cropped area and the yield.
- VII- Observations:
- Work has been carried out on the whole distributary and the schemes for the rehabilitation of off-taking minors have also been submitted. Thus requirements of SAR for taking up the sytem or a sub-system as a whole has been met with and objective of the ISM Project fulfilled.

PUNJAB PROVINCE

- I- No. & Name of Scheme: ISRP-UP-23, Raiwind Drain
- II- Design Data forming bases of Scheme:
- Outfall discharge: 862 cfs
 - Total Length of drain: 167,000 ft.
 - Bed Width: 10 ft. to 41 ft.
 - Full Capacity Depth: 2 ft. to 6.5 ft.
 - Side slopes of drain: 1:1
 - Longitudinal Slope: 0.25 to 0.2 ft. per thousand
 - Width of Inspection Path: 12 ft.
- III- Estimated Cost of Scheme Rs. 6.48 Mln.
- IV- Extent of Rehabilitation and Items of Work:
- The drain is proposed to be rehabilitated in its entire length according to last designed bed and the side slope, levelling and grading of inspection path, providing a compacted dowel, construction of permanent masonry inlet structures and fixation of distance markers.
- V- Status of Work on the Day of Inspection:
- Work was in progress between RD 70-81 and moving up-stream.
- VI- Effect of Rehabilitation:
- It has effectively drained the big pond at the source and given lot of relief to the waterlogged areas on both sides of its length. Many farmers were seen ploughing the reclaimed land.
- VII- Observations
- Three draglines were working between R.D. 81 and 81+500. One was new procured through USAID and other two were old already with the department. Two draglines were standing idle between RD 70 & 71 because of poor maintenance and lack of spare parts.
 - Lot of sloughing could be seen from the sides of the drain between R.D. 70 and 81. The apparent reason is that the outfall reach, which is in deep cutting with prevalent high water table, the side slopes of 1:1 are too steep to resist the sub-soil water pressure and the heaving effect of the heavy surcharge of the spoil banks. No doubt the section is being restored to the last designed conditions but originally the drain was excavated in 50's to drain a wide cup-shaped depression near its source and the outfall reach essentially acted as a drainage cut. At that time water table was not so high and to save cost the department provided a side slope of 1:1. However, during the last 35 years water table has risen due to continued irrigation and running of drainage water from high water table area to the low

Observations

water table area. Resultantly the side slopes of 1:1 have become instable. If the present sloughing rate continues, it is likely that the outfall reach will soon get choked and nullify the very objective of draining the upper catchment. Hence reconsideration of the design criteria in such conditions is essential.

- Usefulness of a compacted dowel over an uncompacted inspection path was questioned. It was informed by the field staff that this was included despite the views of the department to the contrary. Earth work of the dowel can easily be provided by the dragline while dumping the excavated earth on the spoil. There appears to be no logic in borrowing the earth from the spoil for making the dowel. Such a compaction where any embankment is not in contact with water needs reconsideration.
- At certain locations excavated earth was being dumped on farmers land which was resulting in clamouring and claims for compensation.
- Spoil on banks is dumped in loose and uneven form and is prone to wash back to the drain bank and choke the toe drain provided for the drainage. This also needs consideration for future schemes.

P U N J A B PROVINCE

- I- No. & Name of Scheme: ISRP-UP-24 Buchar Khana and Ramkot Drain
- II- Design Data forming bases of Scheme:
- Outfall discharge : 155 cfs
 - Length of drain : 73,000 ft.
 - Bed width: 6 ft. to 17 ft.
 - Full capacity Depth: 2 ft. to 3.9 ft.
 - Side slopes of drain 1:1
 - Longitudinal slope 0.25 per thousand
 - Width of inspection path: 12 ft.
- III- Estimated Cost of Scheme: Rs.1.4 Mln.
- IV- Extent of Rehabilitation and Items of Work: The whole of drain is to be desilted and work according to the last designed section includes excavation of earth work from drain prism, construction of masonry inlets, making of 12 ft. wide inspection path with a dowel, fixation of RD markers.
- V- Status of Work on the Day of Inspection: In progress.
- VI- Effect of Rehabilitation: Under the present conditions, much of the area around the drain appears to be benefited by drainage of the high water table although during monsoon season it is reported to be heavily waterlogged. Signs of soil salinity in the form of accumulation of salts at the top could still be seen. However, the cultivators were seen bringing the abandoned land under plough.
- VII- Observations:
- It was observed that the longitudinal bed profile was irregular after the machine had excavated it and moved up ahead. Similarly side slopes also did not appear exactly 1:1. It was explained by the field staff that such un-evenness was within the tolerances with the work of dragline and was also due to the difference in the skill of the operator.
 - Reach between RD 0-40 was inspected and Ramkot drain was not inspected.
 - Preparation of the Scheme meets SAR requirements.

PUNJAB PROVINCE

- I- No. & Name of Scheme: ISRP-UP-38 Ghazi Ghat Main Drain.
- II- Design data forming bases of Scheme:
- Outfall discharge 435 cfs.
 - Total Length 1,34,000 ft.
 - Side slopes 2:1
 - Bed Slope 1 in 5,000
- III- Estimated Cost of Scheme: Rs. 3.32 Mln.
- IV- Extent of Rehabilitation and Items of Work: Rehabilitation work is to be done in the entire length and consists of bed clearance, construction of permanent masonry inlets.
- V- Status of Work on the Day of Inspection: In progress, started in September 84 and scheduled to be completed by June 30, 1985.
- VI- Effect of Rehabilitation: An area of 36,480 acres shall be benefited after the completion of the rehabilitation work.
- VII-Observations:
- Excavation was being done through five draglines whereas masonry work was entrusted to a local contractor. Three draglines were new procured through USAID and other two were already with the department.
 - The drain was originally designed in 1976 and is being rehabilitated accordingly.
 - Lot of side sloughing phenomenon was seen which reveals that side slope of 2:1 is steep.
 - Due to this sloughing there arises difference in the work done because the quantity completed originally and that at the time of measurement differs.

PUNJAB PROVINCE

- I- No. & Name of Scheme: ISRP-UP-39 Ghazi Ghat Branch Drain.
- II- Design data forming bases of Scheme:
- Total Length 58,400 ft.
- III- Estimated Cost of Scheme Rs.0.808 Mln.
- IV- Extent of Rehabilitation and Items of Work: It has to be rehabilitated in its entire length which includes bed clearance and construction of inlets.
- V- Status of Work on the Day of Inspection: Work has not yet been started although it was scheduled to be started in December 1984. S.E., Muzaffargarh circle informed that he was trying to get one more machine to work on this drain.
- VI- Effect of Rehabilitation: Appreciable area is going to be benefited after the completion of rehabilitation of scheme.
- VII- Observations:
- Only outfall was inspected which is at RD 55 of Ghazi Ghat Main Drain.

PUNJAB PROVINCE

I- No. & Name of Scheme: ISRP-IP-2 Muzaffargarh Canal.

II- Observations

This is an IDA funded scheme and fell on the way to Ghazi Ghat Main Drain. Reach between R.D. 177-206 was inspected. Work on strengthening of banks was in progress through contractor who was using donkeys and tractors, trailers for this purpose. It was noticed that acceptability to use the earth work machinery was not comparable to the availability.

I.S.M. PROJECT - 1ST EVALUATION

TIME FRAME OF THE EVALUATION AND THE SITES VISITED

Constitution of the Team: 1- Mr.C.Blair Allen - Team Leader USAID
2- Engr.S.N.H.Mashhadi- Management Adviser-NDC
3- Engr.M.A.H.Enver - Tech.Assistant-NDC

ISLAMABAD & N.W.F.P.

Sr. No.	Date		V i s i t		Mode of Travel	Duties Performed or Purpose of Visit	Members participating in the visit
	Day	From hour	To hour				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
1.	Feb.02 Saturday	Lahore 21.00	Islamabad 22.30	By Air	To meet the team leader & signing of contract.	M/s.Mashhadi & Enver	
2.	Feb.03 Sunday	i)USAID Off. 08.30		By road USAID Veh.	Signing of the contract & discussion with M/s.Allen,Quary,Anania,Hakins,Nazir Ch. Asif Bhattee,Mashhadi & Enver.	--do-	
		ii)USAID Office 10.00	Office of CEA/CFFC & back.		Meeting which could not materialize due to the death of younger brother of Chaudhry Altaf Hussain -CEA.		
		iii)USAID Office 16.00			Office work & collection of material, data & publications reg.ISM Project & finalizing the programme for visit to Peshawar.		
3.	Feb.04 Monday	Islamabad 06.15	Peshawar 11.00	By road USAID Vehicle	Camp at Khyber Intercontinental		
			i.Peshawar		Called on USAID Office,Office of Secretary Irrigation & PHE Deptt.to contact Mr.Rab Nawaz Khan,Prov.Project Coordinator but he was busy with the Secretary.	M/s.Allen Mashhadi Enver & Asif Bhattee	
			ii. -do-		Visited Mr.Patten Office at Warsak Road & visited Irr.Workshop Bldg. & the USAID Equipment procured under ISM Project.		
4.	Feb.05 Tuesday	Peshawar 08.00	i.Off.of Mr.Patten	-do-	Discussion on IDA and USAID Machinery/Equipment.	M/s.Allen Mashhadi Enver,Asif Bhattee, A.B.Baloch	
			ii.Off. of XEN Peshawar Canal Divn.	-do-			
			iii.Suru Zai Drain.	-do-	Inspection of Suru Zai Drain on which rehabilitation works had been completed.	M/s.Hazratullah Fh Khalidul Baber,Ab Aziz (I&PHE)	

(D-1)

ISLAMABAD & N.W.F.P.

1)	Date		V i s i t		Mode of Travel	Duties Performed or Purpose of Visit	Members participating in the visit
	Day	From hour	To hour				
	(2)	(3)	(4)	(5)	(6)	(7)	
	Feb. 06 Wednesday	Khyber Intercon.	i) Off. of Provincial Coordinator & C.E. Irri.	By road USAID Vehicle	Discussions reg. ISM Project, Progress Problems and Suggestions.	M/s. Allen, Patten, Mashhadi, Enver, Bhattee, (USAID) Hazratullah Irri.	
			ii) Juay Sheikhan Syphon.	-do-	Inspection of On-going Works.	M/s. Allen, Patten, Zaid Sub. Engr.	
			iii) Sangu Sheikhan Canals.	-do-	Inspection of completed works and back to Peshawar.	M/s. Mashhadi, Enver, Bhattee, Hazratullah, Abdul Aziz.	
	Feb. 07 Thursday	-do-	i) Off. of Secretary I&PHED	-do-	Courtesy call on Secretary and discussions regarding progress on works under ISM Project.	M/s. Allen, Patten, Mashhadi, Enver, Bhattee, Rab Nawaz Baluch.	
		Peshawar 11.00	Islamabad 14.00	-do-	USAID Office	M/s. Allen, Patten, Mashhadi, Enver, Bhattee	
	Feb. 07 Thursday	Islamabad 18.00	Lahore 18.45	By Air	Back to Lahore	M/s. Mashhadi & Enver.	
	Feb. 08 Friday	Free					
	Feb. 09 Saturday	Lahore 07.00	Islamabad 08.00	By air PK-380		Mr. Enver	
					(D-2)		

BALUCHISTAN PROVINCE.

Sr. No.	Date Day	V i s i t		Mode of Travel.	Duties Performed or Purpose of Visit	Members participating in the visit
		From hour	To hour			
(1)	(2)	(3)	(4)	(5)	(6)	(7)
10.	Feb. 09 Saturday	Islamabad 09.15	Quetta 10.30	By air PK-351	Reached USAID Office at Quetta i) Discussions with Mr. Brown and Corps on Machinery & Equipment. ii) Visited Workshop.	M/s.Allen & Enver. --do-- --do--
11.	Feb. 10 Sunday	Quetta (Lourdes Hotel)	Free			
12.	Feb. 11 Monday	Quetta			i) Courtesy call on Secretary I&P ii) Discussions regarding ISM Project, Problems and Suggestions.	M/s.Allen Enver & Corpus

SIND PROVINCE.

Date	Visit		Mode of Travel.	Duties Performed or Purpose of Visit	Members participating in the visit
	From hour	To hour			
(2)	(3)	(4)	(5)	(6)	(7)
Feb. 11 Monday	Quetta 12.40	Karachi 16.00	By air PK-325	Reached USAID Office and stayed at Karachi.	M/s.Allen & Enver
Feb. 12 Tuesday	Karachi 07.00	Hyderabad 10.30	USAID Veh.	<ul style="list-style-type: none"> i) Discussions with S.E.Drainage Circle for firming up the programme regarding 13.2.1985. ii) Discussions with S.E. Mechanical Circle. iii) Discussions with XEN Lower Sind Irrigation Workshop and Kotri Region, Mr. Laslie Equipment Specialist. 	<ul style="list-style-type: none"> M/s.Allen, Ever & Anwar -do- -do-
Feb. 13 Wednesday	Camp at Hyderabad.			<ul style="list-style-type: none"> i) Discussions with S.E.Drainage Circle. ii) Inspection of RD.73,RD.22 Bathoro Drain. iii) Discussions with XEN Sajawal Drainage Division at Sajawal. iv) Inspection of RD. 105, RD.54, Nagan Dhoru Drain & back to Hyderabad. 	<ul style="list-style-type: none"> M/s.Allen, Enver & Anwar. -do- -do- -do-
Feb. 14 Thursday	Hyderabad		-do-	<ul style="list-style-type: none"> i) Discussions with S.E. Rohri Canal Circle. ii) XEN Halla Division iii) Inspection of Mashaikh Hoti Disty. RD 0 to 60 (Tail), Mell Minor RD 0 to 24. 	<ul style="list-style-type: none"> M/s.Allen, Enver & Anwar.
	Hyderabad 18.00	Karachi 21.00	-do-		-do-

(D-4)

PUNJAB PROVINCE

Sr. No.	Date		Visit		Mode of Travel.	Duties Performed or Purpose of Visit.	Members participating in the visit.
	Day		From hour	To hour			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
18.	Feb. 15 Friday	Karachi 14.00	Lahore 15.40	By air PK-304	Back to Lahore	M/s.Allen Enver	
	Feb. 16 Saturday	Camp at Lahore			i) Discussions with M/s. Willard H.Rusk & Tilton, Prc/Checchi. ii) Inspection of Moghalpura Irrigation Workshop. iii) Discussions with XEN Mechanical Workshop. iv) Discussions with Provincial Project Coordinator. v) Discussions with Director General ACOP, Wapda.	M/s.Ailen, Mashhadi, Enver, Qureshi (Rusk, Tilton-pr -do- -do- -do- -do-	
19.	Feb. 17 Sunday	Camp at Lahore			i) Inspection of Bucharkhana Drain. ii) Inspection of Raiwind Drain.	M/s.Allen, Mashhadi, Enver & Qureshi -do-	
20.	Feb. 18 Monday	Lahore 07.00	Multan 08.30	By air PK-651	i) Discussions with S.E.SCARP-III Multan. ii) Discussions with XEN Tubewell Division, Irrigation, Multan. iii) Inspected Tubewell Workshop Irrigation Deptt.	M/s.Allen, Enver & Rusk.	
21.	Feb. 19 Tuesday	Multan			i) Inspection of Ghazi Ghat Drain ii) Inspection of Muzaffargarh Canal RD. 177 to 206.	-do-	

PUNJAB PROVINCE.

Sr. No.	Date		Visit		Mode of Travel.	Duties Performed or Purpose of Visit.	Members participating in the visit.
	Day.	From hour	To hour				
1)	(2)	(3)	(4)	(5)	(6)	(7)	
22.	Feb. 19 Tuesday	Multan 15.45	Lahore 17.00	By air PK-654	Back to Lahore	M/s. Allen Rusk, Enve & Qureshi	
23.	Feb. 20 Wednesday	At Lahore			i) Discussions with Addl. Secretary I&P Deptt. regarding Workshop Machinery. ii) Discussions with M/s. Max G. Williams, (prc) Bakker & Ball regarding design of channels and research.	M/s. Allen Mashhadi, Enver, Qureshi & Rusk. M/s. Allen Mashhadi, Enver & Qureshi	
24.	Feb. 21 Thursday	At Lahore			i) Discussions with Project Engineer ISRP, NESPAK, Lahore regarding activities of NESPAK with respect to ISM Project. ii) Discussions with Director, Centre of Excellence in Water Resources Engineering, University of Engg. and Technology, Lahore, regarding the Training Programme run by them. iii) Discussions at Store Division.	M/s. Mashh Enver & Qureshi. M/s. Enver Qureshi.	
25.	Mar. 4 Monday	Lahore Lahore 20.55	Islamabad Islamabad 22.50	By air By air	Team Leader leaves for Islamabad. Reached Islamabad	M/s. Allen Tilton-pr Mr. Allen M/s. Mashh & Enver	
26.	Mar. 5 Tuesday	At Islamabad			Attended meeting with Team Leader & the other officers of USAID reg. Draft of First Evaluation Report on ISM Project. Discussed certain amendments to be incorporated in the report. Handed Over Inspection Details reg. Canals, Drains & Workshops to the Team Leader.	-do-	
27.	Mar 6 Wednesday	At Islamabad					
28.	Mar. 7 Thursday	Islamabad 16.30	Lahore 18.00	By air	Back to Lahore (D-6)	M/s. Mashh & Enver.	

LIST OF KEY PERSONS CONTACTED AND
INTERVIEWED DURING THE EVALUATION PROCESS

Team Members: 1. Mr.C.Blair Allen Team Leader
2. Engr. S.N.H.Mashhadi Management Adviser
3. Engr. M.A.H.Enver Technical Assistant

PROVINCE: NORTH WEST FRONTIER (From February 4 to 7, 1985)						
Sr. No.	Place	Person Contacted		Telephone		PURPOSE OF MEETING
		Name	Designation	Office	Res.	
1	2	3	4	5	6	7
1.	Peshawar	Mr.Mohammad Amin Khattak	Secretary,Irrigation & Public Health Engg.Deptt.	75148	-	Courtesy Call and Discussion.
2.	-do-	Mr.Rab Nawaz Khan	Chief Engineer & Provincial Project Coordinator			Discussion regarding progress and problems on I.S.M. Project.
3.	-do-	Mr.Akhtar Ali Ismaili	Supdt.Engr. Peshawar Canal Circle.	73249	73337	Courtesy meeting.
4.	-do-	Mr.Hazratullah Khan	Executive Engr. Peshawar Canal Div.Peshawar.	75369	40527	Field Inspections.
5.	-do-	Mr.Allah Bakhsh Baloch.	XEN Irrigation Tubewells Div.	76206	-	Field and Workshop Inspection.
6.	-do-	Mr.Ijazul Haq Qureshi	Sub-Div.Officer, Tubewell Irrigation sub-Div. Warsak Road, Peshawar.	76206	-	-do-
7.	-do-	Mr.Khalidullah Baber	SDO Drainage Sub-Division, Irrigation.	-	-	Field Inspection.
8.	-do-	Mr.Abdul Aziz	SDO Civil Canals Sub-Div.Peshawar	-	-	Field Inspection.
9.	-do-	Mr.Mohammad Rafique	Sub-Engr. Drainage Section, Peshawar.	-	-	-do-
10.	-do-	Mr.Aun Mohammad Zaidi	Sub-Engr.Juay Sheikhan Section, Civil Canals Sub-Div.Peshawar.	-	-	-do-
11.	-do-	Mr.Alfred.L.Patten	Equipment Adviser, PRC/CHECCHI.Co.In. Peshawar.	-	-	To assess progress on use of Equipment and Rehabilitation of Workshop.

LIST OF KEY PERSONS CONTACTED AND
INTERVIEWED DURING THE EVALUATION PROCESSTeam Members:

- i) Mr.C.Blair Allen
- ii) Engr.S.N.H.Mashhadi
- iii) Engr.M.A.H.Enver

Team Leader
Management Adviser
Technical Assistant

PROVINCE : BALUCHISTAN (From February 9-11, 1985)						
Sr. No.	Place	Person Contacted		Telephone		PURPOSE OF MEETING
		Name	Designation	Office	Res.	
1	2	3	4	5	6	7
1.	Quetta	Mr.Abdul Razik Khan	Secretary, I&P.Deptt.	74154	74152	Courtesy Call and General Discussion on I.S.M.Project.
2.	-do-	Mr.Ghulam Sarwar	Section Officer (Technical)	-	-	Accompanied discussion with Secretary.
3.	-do-	Mr.Nadir Ali	S.D.O.Mech.	-	-	-do-
4.	-do-	Mr.Bernie Corpus	Equipment Management Adviser, PRC/Checchi	-	-	Inspection of W/Shop and Equipment and discussion.
5.	-do-	Mr.Bill Brown	Design Engineer PRC	-	-	General discussion regarding design.

LIST OF KEY PERSONS CONTACTED AND
INTERVIEWED DURING THE EVALUATION PROCESS

Team Members: i) Mr. C. Blair Allen Team Leader.
ii) Engr. S. N. H. Mashbadi Management Adviser
iii) Engr. M. A. H. Enver Technical Assistant

PROVINCE: PUNJAB (From February 15-21, 1985)						
Sr. No.	Place	PERSON NAME	CONTACTED DESIGNATION	Telephone		PURPOSE OF MEETING
				Office	Res.	
1	2	3	4	5	6	7
1.	Lahore	Mian Mohammad Afzal	Provincial Coordinator for ISM Project	214316		Discussion on Progress and problems of ISM Project.
2.	-do-	Mr. Shamsheer Khan Bhatti	Additional Secretary I&P Deptt.	54896	333094	Discussion on machinery and Workshop equipment pertaining to I.S.M. Project.
3.	-do-	Mr. Ahmed Masud Chaudhry	Director General ACOP & Provincial Investigator	882573 1882390	416633 415100	Discussion on progress & constraints of ACOP
4.	-do-	Mr. Ali Mohammad Chaudhry	XEN Drainage Div.	334724	-	Field Inspection
5.	-do-	Mr. Manzoor Cheema	SDO Kasur Drainage Sub-Division	-	-	Field Inspection.
6.	-do-	Dr. N. M. Awan	Director, Centre of Excellence in Water Resources, Engg. University, Lahore.	334014	334709	Discussion on In-service Training programme and problems.
7.	-do-	Mr. Z. S. N. Janjua	Project Engineer, NESPAK, 10-A, Faisal Town, LHR	856348	855313	Discussions regarding role of NESPAK and progress on the clearnace of schemes.
8.	-do-	Mr. Willard H. Rusk	Construction and Equipment Management, Team Leader I.S.M. Project, PRC Engg./CHECCHI Co. Inc. 155-Stoch Corner, The Mall, Lahore.	856348	851033	Discussion regarding use of earth-moving machinery and up-gradings of Workshop.
9.	-do-	Mr. Muzammil Hussain Qureshi	USAID Engineer, Islamabad.	824071		Accompanied during field inspections.
10.	-do-	Mr. Max. G. Williams	Engineering Team Leader PRC Engg./Checchi Co. Inc.	872014	411575	Discussion pertaining to designs.
11.	-do-	Mr. James Ball	Irrigation Research Engineer, (Hydraulic Modelling) PRC Engg./CHECCHI Co. Inc.	872014	-	Discussion on Research and model experiments.

I.S.M. PROJECT- IST EVALUATION

Province: Punjab (Contd)

1	2	3	4	5	6	7
12.	Lahore	Mr.Berend Bakker	Research Engineer PRC Engg./CHECCHI Co.Inc.	871708	858830	Discussion on Design of Channels.
13.	-do-	Mr.Ray Tilton	Equipment Manage- ment Adviser PRC/CHECCHI Co.Inc.	872014	874018	Discussion and inspectio of Workshops etc.
14.	Multan	Mian Mohammad Safdar	Superintending Engineer, SCARP-III Multan			General discussion on problems pertaining to repair of tubewells etc.
15.	-do-	Mr.Abdul Wassey Khan	S.E.Muzaffargarh Canal Circle, Multan.	31162		Discussion on civil works pertaining to cana and drains and field inspection.
16.	-do-	Mian Abdul Ghaffar	XEN Tubewell Div.Irrigation, Multan.	32911	76527	Inspection of Workshop. and site inspection.
17.	-do-	Malik Mohammad Aslam	XEN Kot Adu Div. Kot Adu			Discussion regarding civil works on drains.
18.	-do-	Mr.Abdus Sami	Assistant XEN Drainage sub- div. Kot Adu.			Field Inspection.
19.	-do-	Mr.Mohammad Ramzan Bhatti	Assistant XEN Basira sub-div.			Field Inspection.