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IRRIGATION SYSTEMS MANAGEMENT RESEARCH PROJECT

THIRD

SEMI-ANNUAL PROGRESS REPORT

JANUARY 1, 1988

UNIVERSITY OF IDAHO

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ISM/RESEARCH SEMI-ANNUAL PROGRESS REPORT  
JANUARY 1, 1988

The Semi-annual Progress Report, a contract requirement, is a management tool wherein the Contractor reports progress in satisfying contract requirements and in accomplishing tasks specified in the Annual Work Plan. The objective is to report progress, to identify problems and constraints and to make observations and recommendations that will improve the Project.

1 PROJECT STATUS

At the outset, it should be reported that there were personnel changes in both the USAID and Federal project administration during the past six months.

This Report is the third and covers the first six months of the second Project year. The Annual Review, held in June 1987, was successful. Attendance and participation was excellent and there was much enthusiasm for the Project. Since then, progress has been marginal. Even though all research and other activities are in-progress, most are not on schedule.

All WAPDA and PARC sub-projects have been set back due to funding. There are two problems relative to funding, (1) the approved annual budgets were much less than the amounts actually requested and (2) the flow of funds to the sub-projects was exceedingly slow. At the researchers level, an initial small advance is provided and additional funds are provided through reimbursement. In most cases, the concerned institution is required to spend the initial authorization before a statement of expenditures can be issued. The procedure for reimbursement is unwieldy and slow. It appears that no particular office is at fault. It is apparently the fault of the procedures.

The end result is that researchers (some with growing crops) are often completely out of funds with no hope of getting any in the near future. Consequently project personnel and routine operational expenses are not paid on a regular basis. THIS IS A SERIOUS CONSTRAINT THAT MUST BE REMOVED!

Some progress was made with the PCRWR activities, however the misunderstanding regarding administrative nonconformance with the PC-I with respect to the Documentation Center was not sorted out until late in this report period. Yet, as reported below some progress has been made in spite of this and all PCRWR activities were in full swing at the end of this six-month period.

Most sub-projects are still in need of equipment. The procurement process has proven much slower than anticipated. However, about one third of the equipment has arrived, has been distributed and all the remaining is in final procurement, some en-route to Pakistan.

Training activities increased significantly during the period. Although slow in starting, training has become and will continue to be a major activity throughout the remainder of the Project life.

## 2 TECHNICAL ASSISTANCE

USAID contract # 391-0467-C-00-5044-00 with the University of Idaho specifies the level of effort for all technical assistance and the Project PC-Is are in agreement with the contract. All long-term advisors are provided for in the WAPDA PC-I, however short-term advisors are identified with the activity for which a need was anticipated; therefore they are provided for in the PC-I containing the particular activity.

### 2.1 Long-term advisors

On January 1, 1988 only three long-term advisors were in country. The Social Scientist, Dr. Reiss, completed a two year tour in October 1987 and accepted a position on another USAID project. Two specialists have been nominated as a replacement and the selection will be made after completion of their short term assignments in Pakistan during February 1988. A scientist to fill the fifth field position, that of Research Program Specialist, has been selected. He is Eugene Doering who spent a productive six weeks in Pakistan providing assistance to several research projects. He has been approved by the GOP and USAID and is expected to begin duty on April 1, 1988. This will bring the field team to full contract strength.

The contracted Scopes of Work for all in-country advisors are being addressed. In fact, each advisor is carrying more responsibility than anticipated in design in order to cover the activities in the Scopes of the vacant positions. The field team has other demands from many quarters, to give advice, review documents and provide assistance on all matters relating to irrigation management. This is a worthwhile and necessary function but it does emphasize the need to fill field team vacancies expeditiously and for advisors to plan their time carefully and efficiently.

Advisor activities planned in the 1987/88 Annual Work Plan are being addressed approximately as scheduled in spite of delays mentioned above. A few plan changes were made but, in general, they were in the interest of Project improvement and not because of major problems. All required reports and other documents have been submitted on schedule.

Progress was slow with PCRWR activities because of the administrative delays in reaching agreement with the institutional organization of the documentation and library center and in correcting the plan once agreement was reached. Even so, this did not adversely affect the planned for advisor activities because the issue was apparent when the Annual Plan was prepared and it was designed accordingly. All of the activities managed by PCRWR are now progressing well and no further delay is anticipated. With the exception of Newsletter preparation, the programmed activities of the Social Scientist were carried out before his departure.

## 2.2 Short-term advisors

Short-term technical assistance was provided as needed. It was according to the Annual Work Plan in all cases with the exception of the PCRWR activities and they are planned and cleared for early 1988. Following is a summary of short-term technical assistance provided during July 1, 1987 through December 31, 1987.

NAME	SPECIALITY	TASK ASSIGNED	MONTHS
-----			
Short-term advisor use prior to this report period			21.54
Short-term advisor use during this period			
Naylor	Soil Chemist	Farm Water Management	1.73
Watts	Irrig. Engineer	IRI Design	0.90
King	Agri. Engineer	Outside Indus	1.53
Bondurant	Agri. Engineer	Outside Indus	1.30
Doering	Agri. Engineer	Farm Water Management	1.00
Doering	Agri. Engineer	Drainage	0.60
King	Agri. Engineer	Drainage	1.10
			-----
TOTAL THIS PERIOD			8.16
TOTAL TO DATE			29.70
BALANCE IN CONTRACT			78.80

Training specialists are not included in this list because these activities are not included in the research PC-Is and are reported below under Training.

## 3 PROCUREMENT

Equipment is procured under a sub-contract with Development Alternatives, Inc. Equipment specifications were prepared in Pakistan by the concerned Departments in consultation with Contract advisors. Data base programs have been designed to track procurement and inventory of all equipment in custody of the Contractor.

A "Government Property in the Contractor's Custody" report is filed with USAID annually and a current Equipment Inventory is maintained at the contractor's office.

### 3.1 In process

All equipment items listed in the PC-Is have been identified, specified and have either arrived or are under procurement. Specification problems with cost and details of some large sophisticated items have been overcome.

Project vehicles and other equipment were distributed to PCRWR. The remaining vehicles for the Contractor's office arrived and was delivered in July. With these deliveries the planned for vehicles are all in place. There are legitimate cases for additional vehicles and these should be dealt with. One WAPDA project vehicle was stolen and never recovered and the sedans and vans are not being used regularly because of the size restriction imposed by GOP.

The computer, photographic, surveying and some field equipment have arrived and have been delivered to the concerned agencies. Training in computer use began in September 1987.

Sophisticated equipment requires careful installation and training in its use. In some cases, it is necessary for the Contractor to procure these services. For example, maintenance contracts have been procured for all computers and photocopiers. The totalizing weather stations are being checked and installed by a local electronics firm. It is anticipated that some of the laboratory equipment will require the same treatment. Several training sessions are planned for users of equipment that is unfamiliar to users.

In July, the Contractor assisted the Punjab Irrigation Research Institute prepare specifications for laboratory equipment. This equipment was identified earlier under the ISRP Project but had not been purchased because the funding had not been identified. The equipment was then listed in the ISMR WAPDA PC-I but again without funding. This will be rectified in the contract amendment.

### 3.2 Identification

All items of equipment that were planned for in the PC-Is have been specified. There will undoubtedly be other requests for equipment and these will have to be taken case by case. Procurement will depend on need and the availability of funds.

## 4 RESEARCH SUB-PROJECTS

Progress was substantial but not as great as should have been because of the lack of funds. Most sub-projects started the fiscal year in July with some funds available but the flow after that has been discouraging. Some institutions have been

able to borrow from other within department sources but this practice is not a good solution and has gotten some in trouble.

In spite of this serious problem, a great deal of progress has been made. However, if a solution isn't forthcoming soon there will be little progress on the field research during the next 6-month report period.

#### 4.1 Integrated Watercourse Management

Five activities are included in this sub-project.

Buried Pipelining--A PVC pipeline was designed to serve 15 turnout points within a SCARP tubewell command. The tubewell flow has been divided into two equal parts to create two warabandi groups, each with one half the previous supply. Construction was completed in December 1987 and the system has been tested. After making a few minor adjustments the system will be inaugurated. The warabandi schedules have been worked out and the farmers are anxious to start the new irrigation system.

A farm management questionnaire was designed, pre-tested and finalized. Twenty farmers have been interviewed.

It is expected that there will be much less waste and more efficient use of water. Field data collection will start when the system is fully operable. Benchmark data on cropping patterns, water use efficiency and transport losses were taken on the old system.

Effective Water Distribution--A canal supplied watercourse wherein the concept of "splitting the chak" is the same as with the pipeline study. The command area has been divided into two near equal parts and the watercourse flow will be split below the canal turnout to enable two warabandi groups to operate on one watercourse.

Construction of the bifurcation, watercourse, nakkas, culverts etc. is complete. Farmers have all signed the request for the new chakbandi. At this writing, initiation awaits only the Irrigation Department's issuance of the new irrigation schedules.

The farmers were organized to establish Khal Committees for vigilance of the improvements and maintenance of the new schedules. Data regarding labor, crops and responses of the farming community to effective distribution through split warabandi is being recorded.

Mechanical Construction of Watercourses--The 600 meter long watercourse at tubewell MN-69 was cleaned and maintained with the same ditcher used in construction. As a result the ditcher, has been sent to a machine shop in Faisalabad for minor modification.

The watercourse is functioning well and farmers are pleased with the results. Data on cropping patterns, cropping intensities and delivery efficiencies were collected.

A second watercourse having a designed discharge of 1.23 cusecs. in the command of tubewell MN-30 was selected to further test the success of mechanical construction and maintenance of earthen watercourses.

Matching Cropping Patterns--Data pertaining to actual cropping patterns for kharif 1987 were collected and weekly crop water requirements were calculated for the period. The irrigation supply, measured with cut-throat flume at the head of the watercourse, was compared with the actual crop requirements to assess seasonal variations with respect to crop demands. Three farms each located in head, middle and tail reaches were selected for further study.

Computer simulation will be an excellent tool to develop a reliable method to determine the best crop mix for a given situation. However, given the economic, social, land and water constraints the process is complex and will take considerable time and effort to arrive at workable solutions. This study will eventually be combined with the tubewell study described below in order to optimize the benefit from tubewell augmented supplies.

Water Supply Augmentation with Fractional Tubewells--The project is still in the design stage. The plan is to select a watercourse area, without SCARP tubewell, where the water table is reasonably high but there is, at least, a thin layer of usable sweet water. Baseline data were collected on one site at tubewell MN-41. This area is still being considered as a possible site, however other areas are also being studied since, without sufficient funds, construction cannot commence and the time can be spent on selecting the best possible site.

Discussions were held with the Command Water Management Project personnel relative to cooperating on a duplication of this research study on one of the pilot areas in the Punjab. This would be an ideal arrangement and will continue to be pursued.

Monitoring Irrigation Water--Twice daily monitoring of water flows at measuring devices in the Chabba Distributary is continuing. The amount of land irrigated and crops irrigated during every 12 hour period are also recorded. These data are collected for two weeks at a particular watercourse and then the process is moved to another watercourse on the distributary.

#### 4.1.1 Conformance with Work Plan

i. Buried Pipeline: It was expected that construction would be complete and monitoring in progress and that further tests of pipelines on watercourses would be in progress. The construction is complete but on a delayed schedule due to lack of funds to pay the contractor. The testing of pipelines on watercourses has not commenced. Until funds are available the pipe cannot be purchased.

ii. Effective Water Distribution: The construction was completed on schedule. The testing after installation of the warabandis has not started on schedule because the Irrigation Department has not finished sanctioning the new waris.

iii. Mechanical Construction of Watercourses: All work proceeded according to the Work Plan schedule.

iv. Matching Cropping Patterns: On schedule.

v. Fractional Tubewell Augmentation: The design of the project is three months behind schedule because the site selection has been more difficult than expected. Farmer acceptance is a problem.

vi. Monitoring Irrigation Water: On schedule.

#### 4.2 Farm Water Management

This study is implemented by several institutions including Mona, LIM the Universities of Agriculture at Faisalabad and Tandojam, the University of Karachi, the Land Reclamation Directorate, and the National Agricultural Research Centre. All institutions other than Mona and LIM are coordinated and financed through PARC.

Biotic Reclamation--Cooperators are the University of Agriculture, Faisalabad, the Land Reclamation Directorate, the University of Karachi (all through PARC) and Mona.

Kallar grass has been established with good results. Crop cuttings and green fodder yields have been recorded. A hybrid plant (sorghum-sudan grass cross) seed has been planted at all sites.

This project requires establishment of the grasses before practical results are obtained. The University of Karachi's exploratory work on the tolerance of various plants to salt is continuing. Many species were favorably tested in lysimeters but perished when planted in the highly saline field area.

Nitrogen Management--Cooperators are the Agricultural Universities at Faisalabad and Tando Jam, NARC (all through PARC) and Mona.

All sites are testing nitrogen rates, sources and timing of applications on various crops depending on site. During kharif the crops are maize in Punjab and sunflower in Sind while in rabi the crop is wheat at all sites.

Brackish Groundwater Use--Cooperators are Mona and LIM. The study started in 86/87 rabi on one acre salt-free plots. At Mona, the water supply, from a tubewell, is saline with 2400 ppm. TDS and 1.6 SAR. Rauni and first irrigations are given with canal water and simple super phosphate is used as the source of phosphate. Irrigation treatments include four different intervals. To date, the crop condition is good in all treatments.

Strategies for Poor Drainage Sites--Cooperators are Mona and LIM. All sites (three at LIM and two at Mona) were planted to maize during the kharif season. The irrigations were quantified for depth of water applied to each treatment. Piezometers were used to record water table fluctuations on a weekly basis.

Salt Balance--This study is at Mona. After preliminary observations and with the advise of a short-term consultant, it was decided to delay this study until proper equipment has been procured.

#### 4.2.1 Conformance with Work Plan

All work, with the exception of the Salt Balance study is in accordance with the Work Plan. The researchers knew the laboratory equipment would not be available during the period planned only continuance of the field work.

#### 4.3 Irrigation Systems Outside the Indus Basin

Field work was initiated in January 1987. The research to date has involved two methods of irrigation.

Karez Irrigation System--Experimental improvements being tested include capping of wells, cleaning of the tunnel and low cost lining in the link channel. These have all been installed and are being monitored.

Hand boring in six karez wells resulted in an increased discharge which is being monitored to determine its variation over time. Two karezes have been selected for test of techniques of improving flow through recharge. The design is being finalized with help of a short-term advisor.

The benchmark survey of karezes in 5 districts of Baluchistan has been completed and the report of findings is being finalized. Fifteen measuring flumes were installed on selected karezes to obtain monthly discharge measurements to assess long term changes in flow patterns.

An experiment wherein karez water is supplied to orchard crops in basins through a modified drip system has been designed.

Sailaba Irrigation--A survey of sites throughout Baluchistan was made. Sites were selected and improved physical designs and layouts are being finalized to test and monitor.

Project funding is inadequate for pilot testing on a major scale. For this reason, a PC-I is being prepared to access more funds.

#### 4.3.1 Conformance with Work Plan

- i. Karez Irrigation System: Work Plan completed except for the installation of a system to spread water to augment karez supplies.
- ii. Sailaba Irrigation: Reconnaissance complete but design of program and selection of sites two months behind schedule.
- iii. Delay Action Dams: It was planned to start a monitoring program during the period, but as yet it has not commenced.

#### 4.4 Beyond Watercourse Improvement

Computers were received during the report period and some training in their use was completed. Some old data records are being analyzed by computer as part of one of the Special Studies conducted by the Directorate.

The decision was made to design and build an advanced data base for all data previously collected by the Watercourse Monitoring and Evaluation Directorate. A short-term advisor will spend six weeks assisting with the design and training users in data base use. After the data have been installed a program of analyses will be determined depending on the extent and completeness of the data.

A special study entitled "Trading of Canal and Tubewell for Irrigation" was initiated. Sample distributaries were selected with special characteristics, i.e. perennial/non-perennial, SCARP/non-SCARP, fresh/ saline groundwater and water table depth. Specific sample watercourses were selected for the test. They include systems in the three provinces of NWFP, Punjab and Sind.

Other Special Studies continued to be designed. The intent is for the Directorate to conduct several of these in the next two years. A work plan was designed and is being reviewed.

#### 4.4.1 Conformance with Work Plan

Special Studies are on schedule. Analysis of past records and establishment of a system to systematically review old data behind schedule due to non-availability of concerned technical assistant. Process to start in February, hopefully returning to schedule during the next 6-month period.

#### 4.5 Ground and Surface Water Models

Data entry into the computers was initiated. A computer format was prepared and data from forty three observation points have been entered. The cross sections of the canals in the Mona Scheme were secured and a section showing the position of water levels, canal bed and stage elevation along the length of the Lower Jhelum Canal which traverses the Mona Scheme was delineated. Data on recharge parameters collected on the Mona Scheme are being reduced with the computers.

A course on Interpolation and Areal Estimation Techniques for the hydrologists is in process.

The plans for the building addition to house the project have been approved by WAPDA and construction is underway.

#### 4.5.1 Conformance with Work Plan

All aspects of model preparation are underway. Progress is not as expected due to diversion of staff to other pressing duties during period.

#### 4.6 Public and Private Tubewells

A data base system for the SCARP tubewell data was designed. The lengthy process of installing the data will continue for some time. Some preliminary analyses have been accomplished to check the reliability and efficiency of the data base.

Data on tubewell operating hours were collected from 2000, 3000, and 900 tubewells of SCARP-I, SCARP-II and SCARP-IV respectively. Tubewell construction data from the same SCARPS were collected from 1000, 1200 and 800 wells respectively.

#### 4.6.1 Conformance with Work Plan

Data Base Analysis is in progress but the data for 900 wells is not completed as expected. The process is much more time consuming than planned, however it is continuing and programmers are improving with practice.

Monitoring equipment for Investigation of Deteriorated Wells has not been installed because the equipment has not yet arrived

#### 4.7 Drainage and Water Table Control

The Drainage and Reclamation Institute of Pakistan, DRIP, is the Principal Investigator. Small scale drainage systems were designed for three sites in the Sind Province. These have all been installed and data collection started.

A similar site was planned at Mona to be a sample from an area of heavier rainfall. This system has been designed and is ready for construction, but lack of funds stopped progress.

##### 4.7.1 Conformance with Work Plan

The planned work was completed ahead of schedule except for the drain at Mona. This was delayed because conductivity measurements could not be made until proper equipment was available. Design is complete, however now lack of funds is the constraint.

#### 4.8 Farmer Involvement in Water Management

Nine university scientists submitted draft proposals for research in various aspects and locations. A workshop was held to critique and review the proposals. Final drafts were prepared based on the review and seven are now considered in final shape for financing.

Collaborators include the University of Agriculture-Faisalabad, the University of Peshawar, the University of Baluchistan, the Sind Agricultural University, Quaid-e-Azam University and the Applied Economics Research Centre, University of Karachi.

The topics cover the institutional and social aspects of many of the types of irrigation systems found in Pakistan. In this regard, this sub-project will be beneficial and add to the research output and understanding of some of the other ISMR sub-projects. Since Dr. Reiss left the Project, little progress has been made. The delay is also a consequence of the administrative problem with PCRWR but since this has been cleared the project is now expected to proceed on schedule.

##### 4.8.1 Conformance with Work Plan

The progress is at least 3 months behind schedule, due primarily to lack of interested personnel in PCRWR and the departure of Dr. Reiss. Agreements with researchers have not been signed, funds have not been made available and, therefore, no research has been initiated.

## 5 INSTITUTION BUILDING

Institution building is an integral part of the Project and it is handled in much the same manner as research, through specific activities.

## 5.1 Documentation Center

The Center is called the National Documentation Centre, Library and Information Network (NADLIN). Potential collaborators have been identified and some agreements signed. A building was rented to house the Centre and existing staff are settled.

Several positions have been filled. Recruitment and final staffing is in progress. Computers are in place and with full staff training will start in February 1988 under the advisement of a short-term library scientist.

It is expected that activities of NADLIN will now proceed rapidly and on schedule.

### 5.1.1 Conformance with Work Plan

Progress has been marginal due to the problem stated above. Training has been delayed about four months but will commence in February. Recruitment of staff is still underway. No newsletters have been forthcoming.

## 5.2 Competitive Grants

The Project Director for this activity resigned during the report period. Another Director was immediately assigned with little loss of continuity.

The brochure was finalized and printed. Notices for pre-proposals were advertised in all leading newspapers in November. The result was overwhelming with nearly 200 responses. As a result, four workshops were held in Hyderabad, Karachi, Lahore and Islamabad to explain the Grants program and present detailed instructions for proposal preparation.

In the meantime, the pre-proposals have been sent to a Board of Reviewers with the request to eliminate all proposals that do not meet the Grant criteria. This is presently in process.

In summary, the grants program is about ready to request final proposals from a group of scientists who have pre-qualified with reasonable research ideas. Review, provision of help and advice and final selection will be accomplished during the next 3 or 4 months, with final grants issued before July 1988.

### 5.2.1 Conformance with Work Plan

This Program is only two months behind schedule in spite of all the problems during the past six months. Pre-proposals have been received and reviewed and it is expected the Program will be on schedule by the end of the next report period.

### 5.3 Training

Although formal training started on January 1, 1987, very few participants have completed training. The Training component processed through USAID/AED is a continuing source of frustration for everyone involved. Some of the causes are

1. Administrators at the Project level spend considerable time and thought choosing appropriate candidates for specific training slots. There is no assurance that those selected by them will be the participants finally selected. In fact, sometimes the selectee is from a totally different organization. Often the loser has gone to considerable effort to obtain a suitable TOEFL score including attending the intensive English course.
2. The approval process is so cumbersome that, to insure clearance, participants spend several days personally pursuing their papers through the maze of required offices. No matter how early the process starts, there is a final rush as the target date approaches.
3. Participants are usually cleared only at the last minute, sometimes receiving air tickets after reaching the airport. This happens so often that it appears that the process is geared to make it the normal procedure.
4. Study tour participants, having received only 80% of the anticipated travel expenses, complain about having to share rooms and meals, etc. Disregarding the legitimacy of the complaint, there is certainly grumbling and dissatisfaction.
5. The Annual Training Plan, prepared carefully by the Contractor and Counterparts, can be amended before finally approved without the Contractor's knowledge.
6. Finally, training apparently is viewed by many as the principal incentive for working on the Project. This, if widespread, could seriously affect the eventual success of improving research in irrigation management.

#### 5.3.1 In-country

All in-country training has been organized into the following categories:

Issues Seminars-one or two day sessions where major issues related to irrigation management research will be discussed. Audiences will be anyone interested in the subject.

In-country Training-training especially designed for 'SM Research Project participants only. Composed of Workshops, usually one-day sessions on important

topics needing clarification or knowledge and Short-Courses, more formal classroom type training on relevant topics.

The following training was accomplished during the report period:

#### Issues Seminars

Total Water Management for Irrigated Soil: Conducted by Eugene Doering for 50 participants in October 1987.

#### Workshops

Research Management and Planning: This will be a series of Workshops held approximately bi-monthly for Project Directors. Conducted by G.L. Corey with the initial session held in December 1987.

#### Short Courses

English language: Considerable effort was spent assisting candidates meet the English language requirement. Three hundred and thirty one candidates were nominated for the TOEFL. As a result of low scores, 46 have taken the intensive English language training.

Statistical analysis with computers: A 5-week course taught by Dr. Joel Hamilton, in June/July 1987. The training involved an introduction to the statistical software. There were 12 participants from WAPDA.

Computer Use: Computer training started in September 1987. To date 6 courses have been taught for a total of 85 participants. The trainees include Top Managers, Senior Researchers, Researchers and Data Entry Operators.

Areal Estimation/Computer Application: A four-week course taught by Gary Johnson for 5 participants from the SCARP Monitoring Organization. November/December 1987.

Finite Difference Groundwater Modeling: A 12-week course taught by Gary Johnson for 8 participants from the SCARP Monitoring Organization. Started in December 1987.

#### 5.3.2 Abroad

##### PhD Degree:

Munir Bhatti; PCRWR; Water Resources Planning; Colorado State University; started September 1986.

Abdul Majeed; PCRWR; Drainage; Washington State University; started August 1987.

Zarar Aslam; PCRWR; Water Management; Placement awaited.

Sahib-ur-Rehman; PCRWR; Hydrology; Placement awaited.

MS Degree:

Mohammad Azam; PCRWR; Irrigation Engineering; Asian Institute of Technology; started January 1987.

Saeed Javed; PCRWR; Agricultural Economics; University of Idaho; started August 1987.

Ch. Talib Ali; PCRWR; Soil Science; Placement awaited.

Short courses:

Rehmat Ali and Nazir Anwer; WAPDA; Social and Technical Aspects of Irrigation; Colorado State University; Five weeks-June/July 1987.

Internships:

Dr. M. Saleem; PARC; Nitrogen Management; University of Idaho; six weeks-Jan/Feb 1988.

Dr. Nazir Ahmed; PARC; Soil Reclamation; University of Idaho-U.S. Salinity Laboratory; Six weeks-Jan/Feb 1988.

Study tours:

Mohammad Munir, Bashir Ahmed, Abdullah Khan, Jamil Ch.; WAPDA and Bashir Chandio, PCRWR; Project Directors tour of research stations in the USA; 4 weeks-Oct/Nov 1987.

Dr. Firdousi, Abdul Shakoor, Qayyum Bhatti, Aslam Chohan; Punjab Irrigation Department; Delft Hydraulics Laboratory; June 1987.

## 6 COORDINATION

The informal Project Implementation Committee consisting of one member from each participating agency, WAPDA, PARC and PCRWR, has met several times. This Committee has been invaluable for overall Project coordination.

Quarterly meetings of the ten Principal Investigators continue to be held. These provide an opportunity to identify implementation problems early.

The USAID Project Officer was changed during the period. The transition was smooth although there was a period during September/October when there was no Project Officer. The present Project Officer has been able to solve several knotty problems. The special project officer continues to function at the Federal Coordinator's level, but his role is lessened with

the retirement of the Chief Engineering Advisor and the apparent lack of interest in the ISMR Project from that office.

The Project Advisory Committee was officially formed a year ago, but it has never met.

There is good coordination between ISMR, IWASRI, IIMI and the Command Water Management Project. Several meetings were held to learn of each others programs and to coordinate activities. When Special Studies become available, there will be facility for cooperative activities. Two meetings were held with MART Project staff. Here also are possibilities for cooperative research work.

## 7 CONCLUSIONS

The Project has been difficult to implement from the beginning. That does not seem to change with time. Several problems and frustrations relate to the complicated nature of the design. The concept of one project involving three Ministries served by one Federal Coordinator probably was not the most efficient system. The flow of "paper work" is sluggish making it difficult to meet or even judge time deadlines. This affects the flow of funds. At the start, there were no funds for the first 9-month period resulting in a delayed start. Since then and in every report period flow of funds has always been behind schedule.

In spite of this, reasonable progress is being made. In some cases, where possible, "borrowing" of funds from other projects takes place in order to maintain momentum. This temporary measure is not wise and will lead to major problems if the funding problems on ISMR are not solved.

### 7.1 Observations

The expatriate field team is two members short at the end of this report period and this adds greatly to the load of the current staff. The authorized level of effort for the field team is minimal at best and when it is two persons short some items must be neglected. This situation can only be blamed on the Contractor, however filling vacancies with well qualified personnel cannot always be done with great speed. In fact, it is not wise to do so. These vacancies should be filled by April 1, 1988 when the field team will be at full strength, so this constraint is a temporary one.

The work load has increased at the local office of the contractor. This results from everyone involved becoming more comfortable with the Project, clarifying their objectives and making more and more requests for contractor assistance. This, of course, is a good indication that the Project is maturing.

The procurement process requires much more time than was anticipated. Equipment arrival, checking and delivery is a

major undertaking. Much of it is highly specialized and not usually familiar to the local researchers. Therefore, training in its use and maintenance is required.

Training has been initiated in a major way, especially the in-country training. The 1988 Training Plan represents a major effort. It will be difficult to get qualified participants nominated in all cases and insuring that the Project's nominee is actually the one finally chosen will not always be possible. The entire USAID training program is a mixed blessing, on the one hand a cause for much disappointment and frustration among possible trainees and we who attempt to get personnel into training slots yet, on the other hand, a great opportunity for those who are chosen.