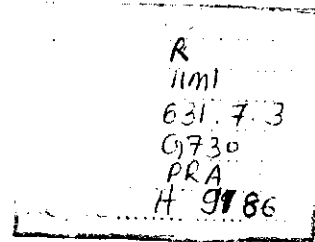


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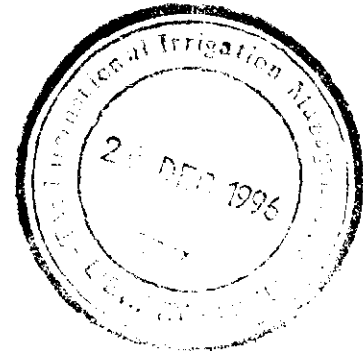
**DISTRIBUTARY LEVEL WATER USERS ASSOCIATIONS  
IN  
PILOT PROJECTS FOR FARMER-MANAGED IRRIGATED AGRICULTURE,  
PUNJAB AND SINDH PROVINCES, PAKISTAN**



**CONSULTANCY REPORT**

by

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## Abbreviations

AKRSP	-	Agha Khan Rural Support Project
ASSO	-	Assistant Supervisor Social Organizer
CF	-	Contact Farmer
DC	-	Distributary channel
DUA	-	Drainage Users Association
FA	-	Field Assistant
FES	-	Fordwah Eastern Sadiqia
FICC	-	Field Implementation Coordination Committee
FRA	-	Field Research Assistant
GoP	-	Government of Pakistan
GoS	-	Government of Sindh
IIMI	-	International Irrigation Management Institute
IWASRI	-	International Waterlogging and Salinity Research Institute
LBOD	-	Left Bank Outfall Drain Project
MC	-	Minor channel
NRAP	-	Netherlands Research Assistance Project
OFWMD	-	On-Farm Water Management Directorate
PID	-	Provincial Irrigation Department
SCARP	-	Salinity Control and Reclamation Project
SDC	-	Swiss Development Corporation
SO	-	Social Organizer
SOA	-	Social Organizer Assistant
SOV	-	Social Organizer Volunteer
SSO	-	Supervisor Social Organizer
WAPDA	-	Water and Power Development Authority
WC	-	Watercourse
WUA	-	Water Users Association
WUF	-	Water Users Federation
WUO	-	Water Users Organization

## I. OVERVIEW OF PILOT PROJECT FEATURES IN SINDH AND PUNJAB.

### INTRODUCTION

This consultancy report is based on discussions with a number of key people from IIMI and outside of IIMI who have been influential in promoting farmer participation in irrigation management, as well as review of literature and progress reports on pilot site activities. Field visits of the pilot sites in Sindh and Punjab Provinces of Pakistan also provided insights on the activities of pilot exercises for the promotion of WUOs at the distributary level. The effort undertaken for the WUO activities at the distributary level is a unique one. No where has there been pilot exercises of this dimension in Asian countries for the promotion of participatory irrigation management. The size of the hydrological boundary and the number of farmers to be dealt with are of substantial size. The initial positive results are quite encouraging.

### CONTEXT OF PARTICIPATORY IRRIGATION MANAGEMENT APPROACH

I gather the impression that farmer participation has become an important component of irrigation and drainage management in Pakistan. The Government of Pakistan (GoP) has shown a determination for promoting farmer participation in irrigation management. GOP also indicated that appropriate institutional reforms will be introduced in the water related sector in order to enlist the farmers participation in sharing the responsibility at the distributary level of the irrigation systems.

The Eight-Five-Year Plan of Pakistan put the emphasis on the need for broad based community organization which will look after its own affairs.

*"Without community involvement and participation, development initiatives in either the economic or the social sector have little chance of success at the grass root level. To operationalize this objective a realistic framework is necessary for collaboration between government and community organizations. The community organization does not mean a small group of influential local representatives. Participation means broad-based, decentralized, homogeneous local organizations at the village or at the neighbourhood level with decision-making being done by all those members of the community. Common economic interest is best served by working together". (Eighth Five-Year Plan of Pakistan)*

In Pakistan, there are several projects which have been undertaken for the promotion of beneficiary participation. Recently, the World Bank, Asian Development Bank, and the Government of the Netherlands have initiated several projects to promote farmer participation and beneficiary participation in irrigation and drainage management. The On-Farm Water Management Directorates of Punjab and Sindh, IIMI-Pakistan, IWASRI and several other agencies are undertaking pilot experimentations at the distributary level of an irrigation system to identify appropriate processes and methods for farmer participation in irrigation and drainage management.

## IIMI- PROJECT ACTIVITY

Serious attention is being given to improving the productivity of irrigated agriculture by encouraging water users involvement in jointly managing the irrigation systems. These policy initiatives are also related to the country's two decades of experience in establishing water users associations (WUAs) at the watercourse level. However, in Pakistan, as elsewhere among developing countries, not much research has been done in the actual impact of these WUAs on the efficiency and equity in water resource management. More importantly, research on the processes that were used in watercourse level social organization efforts has also been minimal. Thus, very little organized information exists which could be used for planning future interventions having a larger scope in participatory management.

### Sindh Pilot Project

With this policy and research background, the Sindh Government authorities decided to try some interventions in social organization at the distributary/ minor level in a pilot project mode. For this purpose, the Left Bank Outfall Drain (LBOD) Project Management in consultation with World Bank (WB) and Swiss Development Corporation (SDC) entered into a consultancy agreement with IIMI to implement pilot projects in which water users organizations (WUOs) would be established to operate and maintain irrigation and drainage facilities in the distributary and minor command area. IIMI's consultancy agreement with the Agricultural Engineering and Water Management Directorate of the Government of Sindh (GoS) was signed on 26 July, 1995.

#### Project objectives

The objectives of the pilot projects are:

1. to test the viability of farmers managing parts of irrigation systems, more specifically, at the level of distributary/ minor canals so that more efficient and equitable allocation of water can be achieved; and
2. to make recommendations related to future extensions on the basis of results of the pilot projects.

The three pilot distributary/minor canals were to be selected from the LBOD project area; one each from the three districts: Nawabshah, Sanghar and Mirpurkhas. These activities have already been undertaken. Pilot sites have already been established in these three districts.

### Specific objective of the pilot sites

The specific objectives of these pilot projects would be to help organise farmers into WUOs in these selected distributary/minor canal command areas and ensure operation and maintenance of the distributary and minor canals by the WUOs without much intervention from the government agencies, but with institutional support, particularly in the early development stages of the pilot project.

WUOs will eventually be accountable for water received at the head of the distributary/minor canals, responsible for distribution of water among member watercourses under their own rules, and management of groundwater levels.

Farmers would pay for the water and for operation and maintenance (O&M) of the irrigation and drainage facilities in their distributary/minor canal command areas. They will undertake the collection of water and drainage charges, improve water management practices, and other activities related to water. An effort would be made to improve the maintenance practices for irrigation and drainage facilities.

### Punjab Pilot Project

The pilot activity in the province of Punjab has been undertaken with the Dutch-funded project, "Managing Irrigation for Environmentally Sustainable Agriculture in Pakistan". The project content is broadly classified into three main components : 1) operational management; 2) institutional development; and 3) salinity management.

The Main System Management and Watercourse Management Sub-components have been quite active in the Fordwah Eastern Sadiqia (FES) North area since the beginning of 1994. The Water User Organizations (WUOs) Sub-component under the Institutional Development Component was also initiated in February, 1994 on Hakra 6-R Distributary with the objective of training the field staff and assessing the effects of social organization activities previously undertaken by the OFWMD in that area under the Command Water Management Project. During May - June 1995, efforts were shifted to Hakra 4-R Distributary having 18000 ha of cultivated area, which was selected as the first pilot area for the planned action research on social organization. The importance of this institutional development research to the Government of Pakistan (GoP) has increased dramatically in recent months.

The objective of the Institutional Development Component is to provide the necessary insights on the organizational arrangements for farmers to interact with government agencies and effectively manage their resources.

Specific objectives of the sub-component are:

1. learn how to organize the farmers as the Water User Associations (WUAs) at the watercourse level and Water Users Federation (WUF) at the minor and distributary level with the Punjab Agricultural Department (PAD) and Punjab Irrigation Department (PID);
2. strengthen the cooperation of PIDs and PADs, as well as interactions with WUAs and WUFs, at the two pilot distributaries in FES (South) and three pilot minors and distributary channels in Sindh; and
3. promote institutional measures with the Provinces of Punjab and Sindh that will strengthen WUAs and WUFs.

#### General Characteristics of Pilot Sites in Sindh and Punjab

The pilot project sites are shown in Figure 1.

The pilot sites in Sindh are smaller as compared with the pilot site of Punjab. In Punjab, the pilot site consists of 120 outlets and the distributary has two minors. The total length of the distributary and minor channels is 58 km. The total land area under the project is about 45,000 acres. The total number of shareholders in the area is estimated to be 4690 (see Table 2). However, it is yet to collect detailed information about the types of shareholders like sharecroppers, tenants, land owner and owner-operator, etc.

In Sindh, the pilot site units are smaller with 31 outlets in Sanghar, 24 outlets in Mirpurkhas and 25 outlets in Nawabshah. In Sanghar and Nawabshah, the average landholding is around 29 acres, whereas the average landholding in Mirpurkhas is 73 acres (see Table 1). However, these lands are cultivated by the tenants and sharecroppers. The detailed study of 9 watercourses in both Mirpurkhas and Nawabshah indicate that there are 395 and 338 shareholders in those 9 WCs respectively. In Sanghar, the pilot area falls under a resettlement program. Ex-military men were rehabilitated and each of them were allotted 28 acres of land. Social and physical characteristics of the sample WCs from Nawabshah are given in Table 3.

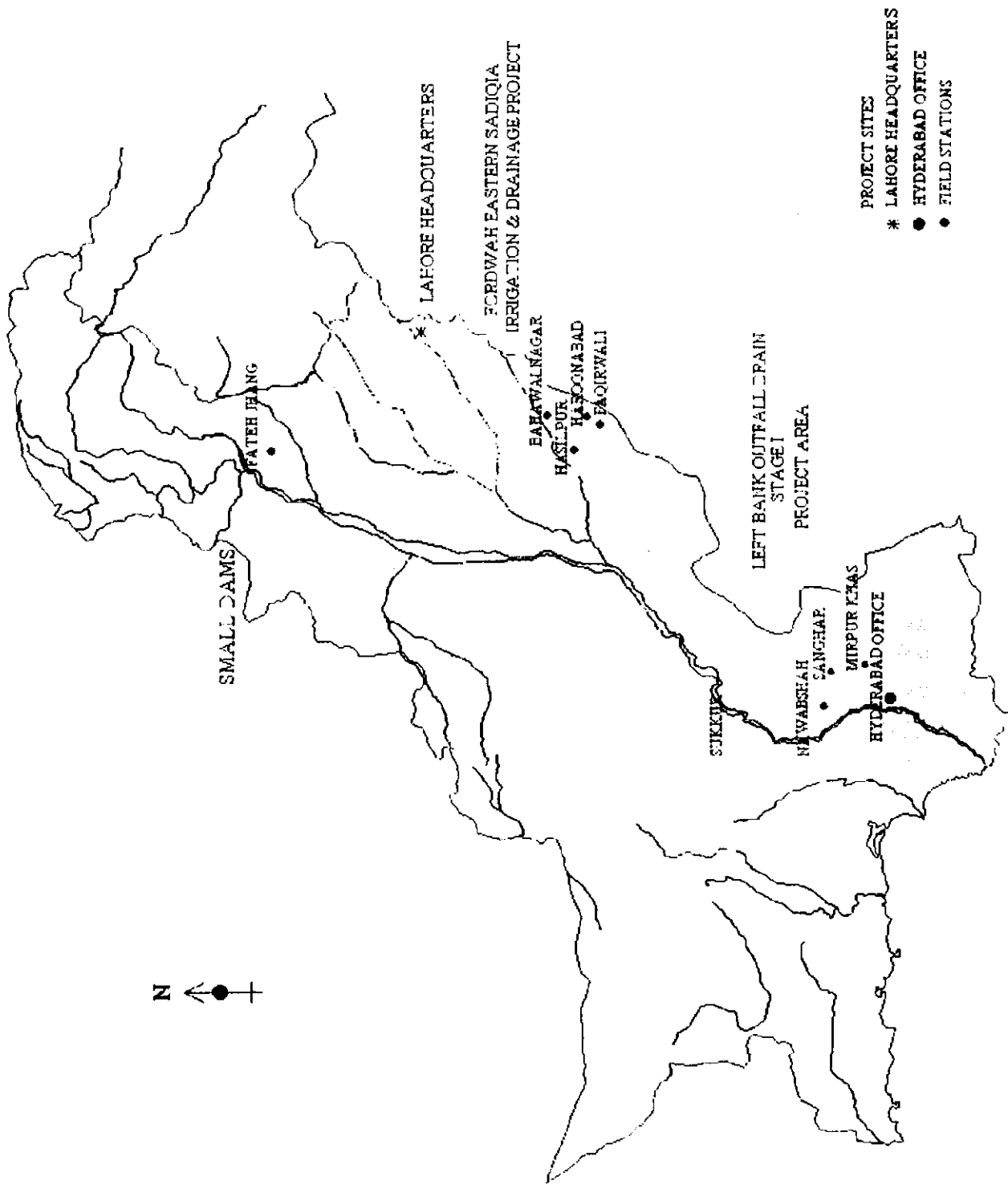


Figure 1: IIMI's Social Organization Pilot Project Sites



**Table 1. General description of pilot distributary systems in Sanghar, Mirpurkhas and Nawabshah District of Sindh Province.**

District					
	Disty/ Minor	No. of WCs	CCA	Length of Channel	Land Owners
Sanghar	Hiran Disty	24	12336	10.6 km	435
	Kadwari Minor	7	3074	3.20 km	104
Mirpurkhas	Bareji Distri	24	14318	12.5 km	197
Nawabshah	Dhoro Noro Minor	25	13282	10.39	421

Source: Collected from field offices at Sanghar, Mirpurkhas and Nawabshah, Sept, 1996.

**Table 2. Important physical and social characteristics of the proposed subsystems on Hakra 4-R Distributary of Hakra Branch Canal.**

Sub-system	RD	No. outlet	lined WCs	unlined WCs	GCA Acres	CCA, Acres	Authorized discharge cusec	No. TW	Share-holders
1	00 to < 46 Main 4-R	23	5	18	9806	8888	32.91	43	695
2	46 to < 72	23	17	6	7638	7581	31.19	45	1053
3	72-112 Main 4-R	27	16	11	12220	10636	41.95	16	1029
4	1 RA Minor	15	6	9	6933	6088	21.85	16	565
5	1 R Minor	32	21	11	11648	10217	40.24	51	1348
									4690

Source: Zafar Iqbal Mirza and Mehmood Ul Hassan. May 1996. Identification of Subsystems within the Hakra 4-R Distributary for action research on social organization. IIMI-Pak, Lahore.

**Table 3. Some features of sample watercourses of Dhoru Naro Minor, Nawabshah District, September, 1996.**

No.	Name of WC	Tenant	Owner operator	Lessee	Total operator	Acres
1	1-L	32	9	-	41	490
2	1-AL	26	3	2	31	418
3	2-AL	42	21	-	63	565
4	4-AL	11	-	1	12	66
5	5-L	27	9	-	36	426
6	10-L	34	3	-	37	299
7	2-R	21	22	1	44	205
8	6-R	10	14	-	24	236
9	7-R	29	21	-	50	363
<b>Total</b>		<b>232</b>	<b>102</b>	<b>4</b>	<b>338</b>	<b>3071</b>

Source: Field Office, Nawabshah, Sept.1996.

There are some similarities and differences between Sindh and Punjab pilot programs. These will be helpful in understanding the different approaches taken in these pilot projects.

**Table 4. Distinctive features between Punjab and Sindh Pilot Program.**

Punjab Pilot Program	Sindh Pilot Program
Initiative for program from donor and IIMI	Initiative from donor (WB & SDC) and Government (OFWMD)
Project concept based on <ul style="list-style-type: none"> <li>- Input from Government of the Netherlands</li> <li>- No GOP initiative</li> <li>- Program is linked with IIMI study on waterlogging and salinity funded by GoTN</li> </ul>	Based on PC 1. It is part of GOP policy. Both government and WB initiatives were active. IIMI proposal is based on PC 1. It is linked with larger infrastructure project (LBOD)
4 year project duration	27 month project duration
Pilot sites: it is very large. It has 120 outlets and it has command area of 45,000 acres.	Pilot sites: one each in three districts of Sindh Province ( Mirpurkas, Sanghar and Nawabshah) Small to medium size distributary/ minor channels, total outlets in three sites are 80. Total land area is about 43,000 acres.
Program started by using old IIMI field team, gradually incorporated social organizers and then the input of technical persons as well	New field team, social and technical groups together, special training in AKRSP, WRRRI and IIMI.
Social organizer volunteers (SOV) are recruited to expand the contact with larger number of farmers. They are from among the farming community of each watercourse. Contact Farmer (CF) was abandoned.	Community based SOVs are employed. They are called contact farmers. The term is not changed.
Sub-system level of WUA is proposed in Punjab. Above sub-system, Distributary Channel Organization is visualized. Hence, three tier WUA at distributary is proposed: (1) WC level; (2) Sub-system level; and (3) Distributary level. Legal framework for multi-tier WUA organization is not in existence.	Two level WUA is proposed. Creation of new WUA at WC level and federate them at Distributary/ minor channel level. Legal framework is already in existence (WUA Ordinance, Sindh Province)
Positive support from OFWMD. Working relation yet to be developed with Irrigation Department	Positive support from OFWMD. Working relation yet to be developed with Irrigation Department
6-person field team: Supervisor Social Organizer, 3 SOs, 2 FRAs	Three 5-person field teams: Supervisor Social Organizer 2 SOs , 2 FRAs

Source: Personal communication with Tissa Bandaragoda, IIMI-Pakistan. September, 1996.

## II. INSTITUTION DEVELOPMENT COMPONENTS

### BROADER OBJECTIVE OF WUA

The promotion of water users associations at the watercourse level, as well as distributary/minor channels, has a broader objective as compared with the WUA formation at the watercourse level by OFWMD for the purpose of mobilization of resources for watercourse lining. Once the watercourse lining takes place, the objective for the WUA at the watercourse level is fulfilled. There is no other important task to keep the farmers together. The lesson to be learned from the experiences of the OFWMD program is that a WUA in order to function as a vibrant organization, needs to have some cementing factors to keep all of the members together. The objective should have an ongoing impact on the life of the farmers.

IIMI, in the pilot site activities, has taken an approach to make the WUA as a resonant users organization. It is considered that " **a continuous engagement in some productive activity by the water users as a group is more likely to provide greater incentives to keep the organization alive.**"

Moreover, the water users at different levels are to take the responsibility of managing the natural resources ( water and land ) for the benefit of the farming community within a given hydrological boundary. **Focusing the activity of a WUA toward resource management for the benefit of all members will bind together the interests of different groups of the people within the farming community.** Hopefully, the WUA will be addressing the question of equitable distribution of water, reducing the unauthorized use of water and regulating a system where wrongdoing will be discouraged through the use of strong social control mechanism or through the punitive measures imposed by the WUA. As a part of broad resource management activities, it will be undertaking operation and maintenance activities, resource mobilization and equitable distribution of water among members of the WUA.

### NATURE OF WUA

In order to have continuity in the WUA activities, the WUA has to be self-governing, self-regulating and self-supporting. It should not be made an appendage of another agency. The self-governing feature of a WUA indicates that it elects or selects the members of the executive by the general body of the farming community. It executes the decisions of the committee without the need for input or approval from any agency. In the same way, the self-regulating characteristic of the WUA indicates that it formulates its own rules and regulations that reflect local needs and local characteristics of the farming community. The self-supporting feature of a WUA enables it to generate

sufficient income internally to finance its own maintenance and operation responsibilities. Efforts to establish WUAs with these features will help to develop a functioning WUA at different levels. **The field staff who have been working with the farmers should have a clear picture about the nature of the WUA.** In some field sites, the field staff have the opinion that the WUF at the distributary/minor channel will be given O&M money by the government and the WUA will manage to spend the money for O&M of the distributary/minor channel. Hence, the field level staff need to be provided with a clear understanding about the nature of the WUA, which will be self-governing, self-regulating and self-supporting.

There is a need to help organize broad-based WUAs, so field staff should try to reach large numbers of the farming community at the WC level and at the distributary/minor level. The concept of Contact Farmers in the Sindh and Social Organizer Volunteers in Haroonabad, Punjab is appreciable. However, field staff should not believe that their contact with the CF or SOV ends the responsibility of broadening the contact in the community. The field staff should be recognized by the farming community. They should be able to build up trust and confidence of the farming community. In this process, the CF or SOV would help establish links between the program and user community. One of the important questions is : How to help internalize the value of an organized effort for the WUA in the minds of the farming community ? Formation of WUOs at higher levels would not be as difficult after this attempt to have the farming community internalize the value of a water users association and the collective decision-making process.

The role of the field staff shall be to facilitate the process of WUA formation. The field staff play the role of catalysts and create awareness among the farming community. The initiative for the formation of WUA should come from them. This approach will allow them to evolve and strengthen their WUA.

The activities to be undertaken by the water users should be initiated by themselves. For example, if there is a need for lining of the WC, they should decide by themselves whether or not to undertake this type of activity. Once they decide that they need WC lining, it should be them going to the offices and interacting with the officials for the mobilization of resources for lining of the WC. The approach has to change drastically so that the farmers take the initiative rather than developing a culture of spoon feeding to these WUAs.

## **LEGAL STATUS**

The WUA has to have legal status. The WUA Ordinance of Sindh Province allows the WUA to be federated at the distributary/ minor level. However, the WUA Ordinance of Punjab Province does not have provision for a distributary/ minor level federated WUA. Hence, there is a need to have such a provision placed in the WUA Ordinance of Punjab Province.

## **AGREEMENT WITH IRRIGATION DEPARTMENT AND OTHER AGENCIES**

The WUF at the distributary/minor level will be performing many activities. In order to carry on these activities, there is a need to have an agreement between the irrigation agency and WUF at the DC level specifying the rights and duties of both parties. For example, there are several structures within a DC level. These structures are the property of the government. Since the WUF at the DC level is to take responsibility for distributary channel management, these structures are to be managed and maintained by the WUF. In such a situation, the Irrigation Department has to reach an agreement with the WUA saying that the structures in the DC are transferred to the supervision of the WUA for operation and maintenance. However, the major repair and rehabilitation will be the responsibility of the Irrigation Department. Desilting and annual maintenance of the DC will be the responsibility of the WUF at the DC level. The Irrigation Department is to deliver the design discharge at the head of the distributary. It will be the responsibility of the WUF to see whether the design discharge is being delivered or not. In order to make these activities meaningful, the agreement has to be signed. In order to have an effective agreement, the WUF needs to have legal status.

### III. FIELD ACTIVITIES FOR THE PROMOTION OF PARTICIPATORY IRRIGATION MANAGEMENT (PIM)

#### ESTABLISHMENT OF FIELD OFFICES

In both provinces, field offices have been established. Each field office has one Supervisor Social Organizer, two Social Organizers and two Field Research Assistants<sup>1</sup>. The Supervisor Social Organizer and Social Organizers have an educational background in either sociology or rural development. They are, by and large, from a rural background. They speak the local language. The Field Research Assistants are engineering graduates. An effort is made to conduct both social and technical activities in the field for WUO organization.

#### TRAINING PROGRAM

The field staff of Hakra 4-R Distributary channel in Punjab had earlier exposure in organization activities from preliminary work in Hakra 6-R Distributary. On-the-job training was the basis for them to start work in Hakra 4-R Distributary.

The Sindh field staff went through a special training program. Two days of training were by the Water Resources Research Institute (WRI) organized in the National Agriculture Research Center (NARC), which was preceded by a 10-day observation and training program in AKRSP, Gilgit, Pakistan. Also, both technical and social training was given periodically on site.

#### ON-GOING TRAINING PROGRAM

Regular meetings are organized by the Team Leaders to assess the progress and problems. Each irrigation distributary/ minor channel has its own typical features. It is good to institutionalize a program **once a month in the form of holding a meeting for all field staff in one place to learn from each others experiences**. The on-going training program based on peer group exchange of information would be an effective way to update the knowledge of the field staff.

#### IDENTIFICATION OF PILOT SITES

A process of using different levels of screening was undertaken to identify one pilot site in each district within LBOD of Sindh Province. A reconnaissance survey of nine distributary/minor channels was conducted in each of the three districts. The reconnaissance survey was used to narrow down for three potential distributary/minor channels for an indepth study in each district. The IIMI field staff located in each

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<sup>1</sup> The designations of field staff in the pilot site at Haroonabad, Punjab are different from the Sindh Field Offices.

district then undertook a more extensive investigation of the three potential sites. The results were presented by each Supervisor Social Organizer at a one-day workshop in Hyderabad during late November 1995. Representatives from OFWM, Irrigation Department and IIMI selected one site in each district.

The field staff undertook a socio-economic base line survey of sample watercourses, which gives a picture of the socio-economic characteristics of each pilot distributary/minor channel. In the meantime, the hydraulic calibration of all outlets within the three pilot sites was undertaken along with measuring seepage rates.

### **SOCIAL ORGANIZERS' INTERACTION WITH FARMERS**

The total population for the pilot sites (one in Punjab and three in Sindh) is around 100,000. The total command area is about 88, 000 acres. The total number of farmers is estimated to be about 9-10,000. The total area and number of farmers in Punjab are 45,000 acres and 6000 farmers respectively. There are 6 IIMI staff in the field office in Haroonabad. One field worker is to deal with 800-1200 farmers, 20 watercourses, and 7,500 acres of land in each of the five subsystems in Punjab field site. In Sindh, it is estimated that one WC has between 40-50 farmers. The total number of farmers in the three pilot sites is estimated to be 3200-4000 farmers. Hence, one field worker is to deal with about 3000 acres of land, about 5 watercourses, and about 210-160 farmers. The volume of work for each field worker is different. The unit cost of WUA organization in Punjab is lower than in the Sindh. In the same way, the intensity of personal interaction with the farmers in Sindh field sites has to be higher than in the Punjab.

In Sindh, the interaction of the field staff with the farmers is at the watercourse level. However, the interaction of field staff with the farmers in Hakra 4-R Distributary is on the basis of village. (In Punjab, the Consultation Meeting attended by the consultant was organized on the basis of village; the village has 4 watercourses from 2 distributaries). The WUA is based on a hydrological boundary so the information collection unit and point of interaction between the farmers and field staff should be at the hydrological unit.

### **WORK ASSIGNMENTS TO THE FIELD STAFF**

The field staff work as a team in pilot sites. It seems that no specific area assignment is given to the field staff in Sindh, but each field staff has a specific area of work in the Hakra 4-R Pilot area in Punjab. **One of the activities of field staff should be to establish trust and confidence between the farmers group and the staff. That will be possible only when each staff has a specific area to coordinate and supervise the activities.**

In both field sites, the field staff as a whole take part in the awareness program and consultation meetings. Besides these contacts, it is important to have direct contact with farmers groups as well.



## **FIELD STAFF FROM RURAL BACKGROUND**

All of the IIMI field staff working at the pilot sites in both provinces come from a rural background. They were born and brought up in the rural areas of Punjab and Sindh. They speak the local language and understand the local cultural behavior. These features help them to be accepted by the farming community within the watercourses.

## **MOBILIZATION OF SOCIAL ORGANIZATION VOLUNTEERS**

The number of people and the area to be covered in the Punjab pilot site is substantially large. The area and the number of the farmers to be contacted are also substantial in Sindh as well. The field staff need the help and support of the farmers in the task of WUA formation. Initially, Contact Farmers (CF) were conceived as the point for expansion of field work by the field staff. In Punjab, the term Contact Farmer was changed and instead, Social Organization Volunteers (SOV) were recruited. The "Contact Farmer" or "Farmers Leader" or "Progressive Farmer" terms are used by the Agriculture Extension people in order to extend new technologies developed at the Research Farms to the farmers fields. The Agriculture Extension person used these people to extend the new information or new technology to the farmers in the village. Their division of work is based on village boundaries. Agriculture Extension coverage is not more than 10-12 % of farmers in many developing countries. Pakistan also might have a similar coverage. However, coverage of the farmers for the formation of the water users associations is to be all in the given watercourse. Hence, the Agriculture Extension approach of farmer leader or contact farmer does not quite fit in this program for facilitating the formation of water users associations. The training to Agriculture Extension people is basically on effective communication and providing background information on technical subjects. However, the field staff for organizing WUOs need knowledge on the community structure, community decision process, power structure in the rural community, group behavior, group psychology, group dynamics, etc. One of their main tasks shall be to mobilize the farmer community to take responsibility for group activity. They have to be very careful in the terminology being used and type of information to be provided.

Changing the term "Contact Farmer" would be appropriate in Sindh as well. Their role should be for the mobilization of the farmers in the watercourse level.

Elaborate procedures for SOV recruitment is followed. It is not the influential person of the village, nor the local politician as such. A number of villagers would be asked for the suggestion of appropriate persons to be a social organization volunteer. The persons with integrity, confidence of the villagers and non-controversial will be recruited to work with IIMI. They work as volunteers, and salary or remuneration is not paid to them. In the Punjab pilot site, SOVs are appointed on the village basis. In Sindh, they are recruited on the WC level. In Punjab, the SOV on the village basis has already shown some difficulty in information collection at the WC level. Reconsideration is to be given in this regard.

They are to work as the bridge between the farming community and the IIMI program. They are volunteers who help mobilize the villagers to form WUOs at different levels. The SOV, as catalyst, helps bring the farmers together.

Rapport building meetings with the SOVs or Contact Farmers periodically take place. The field staff attempt to establish good understanding and rapport with the contact farmers and SOVs.

A one-day training program was organized for SOVs and Contact Farmers. The field staff organized this program, but they mobilized the expertise of other local agencies, like OFWM staff. The training program included the subjects like improved agriculture practices, better water management practices, importance of O&M, formation of social organization at the watercourse level or at the subsystem level or at the distributary/minor level. The SOVs or CFs work with the field staff. They become resource persons to the field staff in order to mobilize the farmers at the watercourse level for WUA formation and other activities.

The concept of SOV is to be further refined. This is an innovative idea. There are lots of merit in this approach. In expanding the WUA activities to larger areas of an irrigation system, SOVs can play a very important role. Also, they can reduce the per unit cost of WUA formation. However, this approach needs to be separated from the contact farmer approach. Appropriate procedures need to be developed for identification, selection, orientation and contribution of SOVs.

Planning meetings at the watercourse level or consultation meetings with the farmers are organized usually with the active support and contribution of the SOVs. However, **it is to be made quite clear that they are only support to the field staff, not for substituting what the field staff is supposed to do in order to mobilize the farmers for the formation of the WUA. They should not be taken as the traditional contact farmer. This point is to be seriously taken into consideration by all field staff. In the absence of a proper understanding of the role, the field staff would end up contacting only the CF or SOV in the name of contact with farmers in the watercourse. In order to avoid this confusion, it would have been better to prepare separate make job descriptions for field staff and CFs or SOVs.**

## IV. ORGANIZATION OF WUA/WUO

The preceding section discusses the methods for strengthening the capacity of the farmers in creating awareness and giving information about the role and responsibilities of the water users organizations at different levels of hydrological boundaries. This section discusses the method and nature of the formation of WUOs at different levels and the functions to be performed by them.

### TYPES OF ORGANIZATION

Two types of organizations are visualized in the pilot sites of Punjab and Sindh.

In Punjab, the aim was to form the water users federation at the distributary channel level. Hence, an effort was undertaken to establish a distributary level WUF first; later on, an effort will be made to organize water users at the watercourse level (WUAs). However, awareness creation is done at the watercourse level to help them understand the importance of the distributary channel level water users federation. In the Punjab pilot site, another tier is also proposed in Hakra 4-R Distributary between the distributary level and WC level. The tier between the WC and DC is given a name as a subsystem unit. The organization chart of Hakra 4-R Distributary is given in Figure 2.

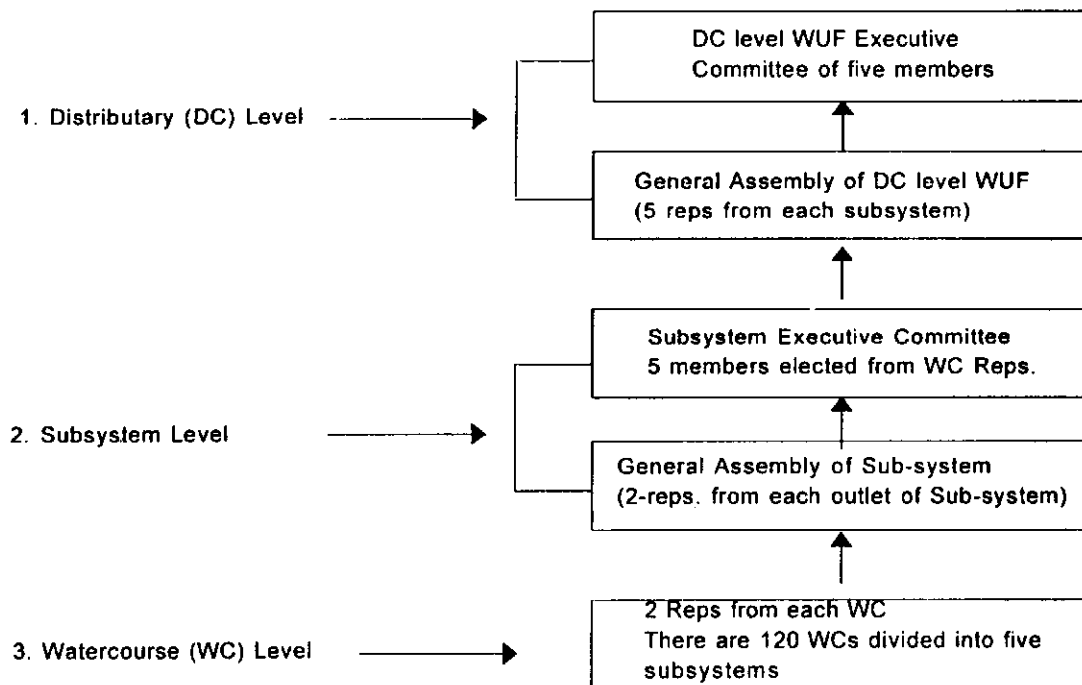


Figure 2. Farmer Organization Chart of Hakra 4-R Distributary

Through the SOVs and consultation meetings with the farmers, WC representatives for each subsystem level WUO will be elected. The sub-system level helps bring the farmers closer to organization. In Hakra 4-R , it is proposed to have five subsystems within the distributary channel hydrologic boundary.

The members of the executive committees of the five subsystems will constitute the assembly of the DC. The DC assembly elects five members from among themselves to form the executive committee of the DC. The executive committee will consist of a Chairman, Vice-chairman, Secretary, Treasurer and member. The position will be rotating. Each year, new office bearers will be elected so that every one will have a chance to be chairman irrespective of which section of the channel they represent. This helps break the monopoly of position by certain people.

The role of each unit is to be made specific and clear. The functions of the assembly are to be clearly spelled out. Due importance is to be given to the role to be played by the assemblies. Oftentimes, the assembly acts as an important level for institutionalizing accountability, transparency, and a linkage between the lower level and upper level of the organization.

The role of the WC at the DC level is not yet clear. In Punjab, the formation of WUAs at the WC is not even attempted because the WC will send only a representative to subsystem level assembly. It seems that if WC level farmers are ready to form a WUA at the WC level, it will be useful to have this WUA formation. How can it be ensured that broad based WUAs will be formed ?

The WUF at the DC level will be viable only when the sanctity of the mogha is maintained by the farmers of each WC. Hence, the WC plays an important role in making the DC a functioning organization.

In Sindh, the water users organization will be of two tiers as shown in Figure 3.

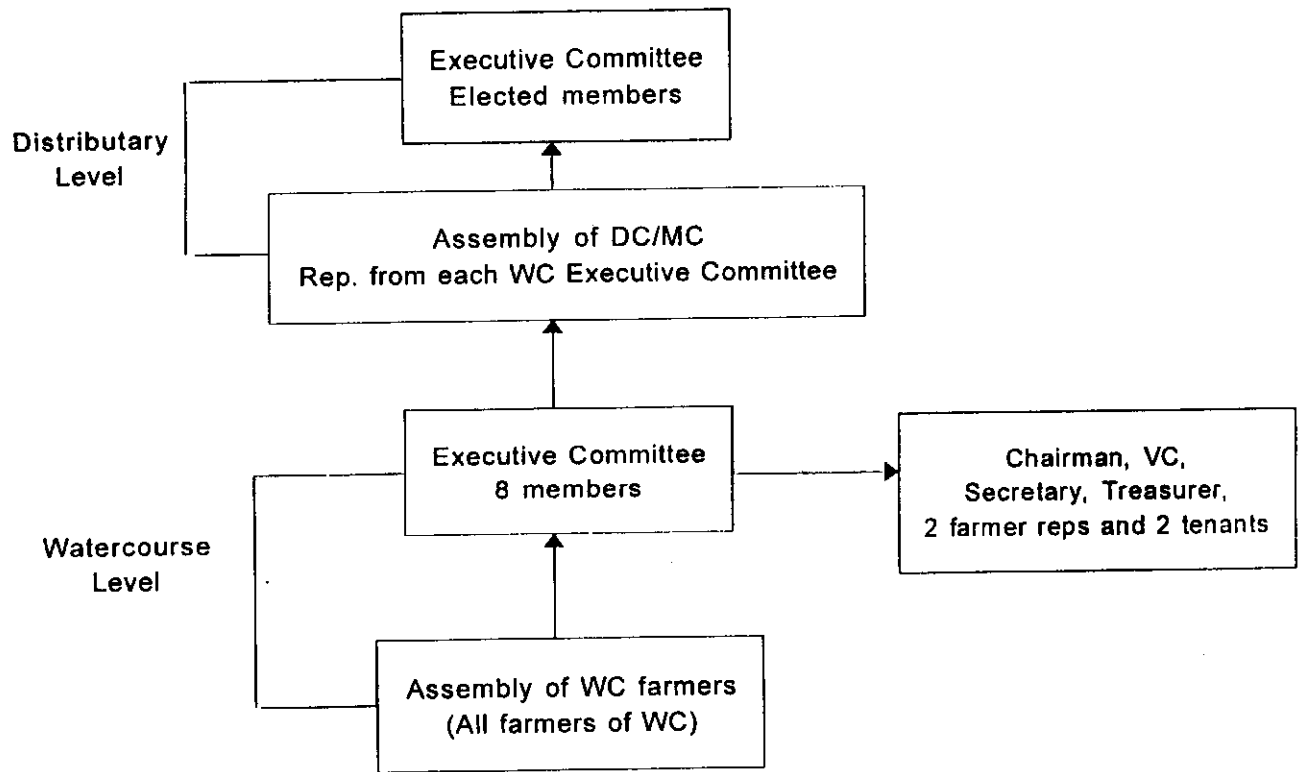


Figure 3. Organization Chart of WUO in Sindh.

The process of educating the farmers is going very well. The farmers started asking a number of questions regarding the water management functions of the WUO at different levels. As of now, the concentration of activities has been to strengthen the capacity of the farmers. The WUA formation activity is gradually taking place. In Sanghar District of Sindh, two WC level WUAs have already been formed. About 60 % of the farmers gathered together to select the office bearers of the Executive Committee of the WUA at WC 9-R in Hiran Distributary in Sanghar District. The farmers decided that there should be representation of the tenants in the WUA. The meetings of the general members are very important. At least two times a year, the meeting of the general members should take place. The executive committee should be accountable to the general body. The consultant had the opportunity to observe the meeting of WC 9-R WUA. The WUA has maintained the minute book and they record the decisions of the meeting. The effort in maintaining the minute book indicates the process of institutionalization of WUA activities. However, the roles and functions are not clearly defined. One of the major concerns expressed by the farmers was whether they will be allowed to get the same amount of water after the formation of the WUA as they are getting at present, which is more than the design discharge.

### **MEMBERSHIP OF WUO**

Membership is an important factor that should be given serious consideration in order to make the WUA a functioning organization. There are at least five types of shareholders in the watercourses. They are landowners, owner-cultivators, tenants, sharecroppers and lessees. All of these people are the users of the channel water. In proportion to their watershare, they will have to contribute resources ( cash, kind, and labour) for the operation and maintenance of the distributary channel. The question of membership becomes important when WC level water users associations are formed. The membership question is to be linked with the aspect of resource mobilization for O&M of the distributary/minor channel. Hence , there is need to give due attention to organize the meetings of all shareholders at the WC level. There should be at least two general meetings of the shareholders in a year. The Executive Committee of the WC should be accountable to this general body.

In the upper tier of WUA organization, the representation will be on the basis of WC membership, so the question on the membership at the upper tier would not arise. An attempt is to be made for broader participation of all shareholders at the WC level.

### **ACTIVITIES OF WUO AT DIFFERENT LEVELS**

In the consultancy report prepared by Ganawattee and Pradhan (1995), the tentative activities to be undertaken by different tiers are spelled out. While visiting the pilot sites, I felt that the time has come to prepare the list of activities to be undertaken by WUOs. This exercise has to be done in consultation with the farmers very carefully. The making or breaking of WUOs will depend on the types of activities that they undertake.

If I were to evaluate the performance of WUOs at the DC/MC level in 4-5 years time from now , I would focus my attention on the following points.

Main points to be considered will be as follows:

- \* The level of interest demonstrated by farmers in being organized as a WUF at the distributary/ minor level.
- \* The improvement in equitable water distribution among outlets along a distributary after becoming organized.
- \* Enhanced capability of the WUOs to settle water disputes.
- \* Regular maintenance of the channels, with increased resource mobilization.
- \* Because of regular desilting and maintenance of the channels and watercourses, improvement of hydraulic performance .
- \* Collective efforts through regular meetings.
- \* Formulation of regulations for irrigation management through group consensus and its implementation by WUOs.
- \* Increase in cropped area and cropping intensity.
- \* Assured supply of agreed quantity of water in DC/Minor through negotiation and agreement between ID and WUO.
- \* Maintenance of sanctity of Mogha. Discourage absolutely the tampering of the mogha outlet.
- \* Ability of the WUO to interact with outside agencies to mobilize support and resources for the WUO and its members.

On the basis of these points for evaluating the activities of WUOs at the DC/MC level, this can be taken as a cue to formulate WUO activities. These activities should not be imposed on them. They should see the importance of these activities in relation to water management, agricultural improvement, equitable distribution of water, and social control.

## **FUNCTIONS OF WUO**

There are different opinions regarding the functions of WUOs. Should a WUO be a single function or multiple function? Looking at the multiple needs of the farming community to make the agricultural activities as a viable proposition, people tend to suggest that WUO should take multiple functions. In some of the studies undertaken in the Philippines, it was found that a multiple function WUO has higher productivity per unit of land as compared with single function WUA. However, all WUOs in the Philippines have started their activities as a single purpose WUO, not multi-purpose WUO. Over a period of time, they realize the need for expanding their activities. They did it on their own initiative, not on the initiative of outsiders. Hence, the WUO as an organization adopted these activities as an integral part of WUO. In both Punjab and Sindh, the WUO has to start as a single purpose and then be allowed to undertake further activities when they feel capable of undertaking other activities. The decision to expand activities should be theirs.

The field staff has to be careful at all times not to give them the impression that the field staff is there to act on their behalf. The WUO should take the initiative by themselves. As and when it requires the input of the field staff, it will be made available. The field staff should try at all times to "assist the WUO in becoming a self-governing, self-regulating and self-supporting organization".



## **V. INTERACTION WITH GOVERNMENT AGENCIES**

In promoting participatory irrigation management (PIM), the Irrigation Department plays a very important facilitating and enabling role to assist the water users organizations at different levels to be functional and active. Other agencies of the government are also important to help make irrigated agriculture more profitable.

### **FIELD IMPLEMENTATION COORDINATION COMMITTEE (FICC)**

In order to mobilize the support of field level agencies and share the experiences among them, a FICC was formed both in the Punjab and Sindh pilot sites. Except PID representation, other local staff from different agencies have participated in the periodic meetings in the field. However, the lack of active participation of the PID staff is much felt.

### **REDEFINING THE ROLE OF PID**

The objective of the promotion of WUOs at the DC level is to strengthen the management and improvement of irrigation and drainage performance with the help of the farming community. This lesson is to be shared with the PIDs.

In the changing context of the approach towards irrigation management, there is a need to have a role redefinition of PIDs and farmers groups. The PIDs will be taking more of a facilitating than administrative role in the management of irrigation systems. Hence, PIDs need to have experiences working with the organized groups of farmers. Such experiences are to be stored in the institutional memory of irrigation agencies. These experiences can only be secured when the PIDs participate in the review meetings and the implementation of pilot experiments.

In the consultancy report of last year (Ganawatte and Pradhan, 1995), it was proposed to have:

- a. A Institutional Development Unit in each PID; and
- b. A Project Progress Review Committee.

Efforts are required in establishing an Institutional Development Unit in each PID. This exercise will help internalize and institutionalize the value of participatory irrigation management.

A Progress Review Committee consisting of high level officials from Irrigation, Agriculture and IIMI could assist the policy makers for irrigated agriculture to obtain first hand information based on field experiences.

Without the active support of the PIDs, the WUOs cannot enter into an agreement specifying the activities to be performed by both parties. The successful implementation of the program depends on the positive attitude of the Irrigation Departments. Without their cooperation, the full cycle of pilot activities cannot be completed.

### **DIALOGUE BY IIMI MANAGEMENT WITH PID**

From field observations, it is felt that without active support, not the lukewarm support, of the PIDs at different levels, the pilot experiments cannot make much headway and cannot generate meaningful lessons. The IIMI management has to take the lead to open a dialogue with the PIDs and define the role and responsibilities of WUOs and PID. If meaningful dialogue does not take place quickly, the pilot activities will end with the formation of WUAs and WUFs. These WUOs will not be able to perform their functions without support of, and agreement, with the PIDs.

### **SYSTEM PERSPECTIVE ISSUES**

Different units are undertaking activities which overlap each others activities. However, each unit emphasizes the importance of its work. The WUOs are formed with the objective of taking more responsibility for irrigation management at certain levels of the irrigation system. In some cases, drainage users associations (DUAs) are being proposed to take care of drainage problems. Broadly, water is acquired and used for agriculture purposes and excess water is disposed. So, it looks that irrigation and drainage go together. One active WUO should be able to perform functions for both irrigation and drainage. Certainly, this is the approach being explored at the three pilot sites in Sindh Province.

## VI. CONCLUSIONS AND RECOMMENDATIONS

### CONCLUSIONS

The efforts undertaken in the pilot sites of both provinces to strengthen the capacity of the farmers are appreciable. Nowhere in Asia are such large-scale pilot experiments covering nearly 90,000 acres being tried. This is really an admirable effort. This is not an easy task either. The preliminary findings in the field indicate positive results. A number of innovations are being introduced like the employment of social organizers to act as catalysts, mobilization of social organization volunteers from among the farming community, promotion of an evolutionary approach, process documentation, in-built training program to upgrade the quality of the field staff, provision of peer group training through exchange of field experiences of the field staff in regular meetings, awareness program to the farmers and planning meetings with the farmers for the formation of WUOs. On the farmers front, it seems that they are getting ready.

The PID play an important role to allow WUFs at the DC level to be active and effective. Much effort is yet to be made to have the PIDs recognize the importance of participatory irrigation management.

### RECOMMENDATIONS

There is a long list of recommendations resulting from this consultancy.

1. "Peer Group Training for Field Staff" is to be organized once a month. All of the field staff should participate to learn from each others experiences. This program becomes useful for the supervisors in order to get ready for tackling a new generation of problems in the field.
2. All of the field staff should have a common understanding of the water users organizations and their activities. The message by all should be the same.
3. An effort is required to assist WUOs in becoming "self-governing, self-regulating and self-supporting" units.
4. Hydrological boundaries should be the basis for activities and establishing the unit of organization, not the village.
5. The SOV approach is innovative. They should be used as the resource to mobilize the farmers, not the contact point to send the message to the farmers. Field staff should try to reach as many farmers as possible.
6. The WUA at the WC level has to be broad based. There should be at least one or two meetings per year of the general body of the farmers. The assembly should be given due importance because they help maintain accountability and transparency.

7. The time has come to consider different options for water users organizations. The field staff should have idea about the type of organization being proposed for WUOs at different levels.
8. Functions of the WUAs and WUFs are to be considered now. During the meetings regarding the formation of WUOs, the question of activities was raised many times.
9. Membership in the WC WUA should be broad based. All of the shareholders, including the sharecropper, tenants, lessees and land owners, should be a member of the general body of the WC WUA. Executive Committee members are to be elected or selected from among these members.
10. A Progress Review Committee is to be vitalized and made functional.
11. Dialogue between PID and IIMI management for participatory irrigation management should be strengthened. Attempts should be made to define the roles to be played by the WUFs at the DC level and the supporting role to be played by the PIDs.
12. Without agreement between PID and WUF at the DC, the WUF cannot perform. PID has to provide an enabling linkage to assist the WUF. IIMI has to secure the approval of PID in this regard to assign the responsibility for management of distributary to the WUF.
13. Let there be a study undertaken as to what and how resources from within the distributary command area can be mobilized by the WUF operation and maintenance. The members of the WUF should be made aware that resource mobilization has to take place from within their resources.
14. There is a need to understand clearly what will be the fate of those PID staff who have been working at distributary level.
15. The WC farmers should form WUAs if they are willing to do so in Hakra 4-R Distributary. Let us encourage the farmers to organize themselves in order to form WUAs. We need both active WUAs and WUFs.
16. It will be appropriate to make distinctions between public utility infrastructure and private utility infrastructure. The public utility infrastructure are those which do not have identified beneficiaries, and such infrastructure should be maintained by the government.

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**Annex. I. List of activities during consultancy period.**

3/9/1996

Arrival to Lahore from Delhi via PIA Flight 271.

4/9/1996

Meeting with IIMI staff and reading project reports

5/9/1996

Review of Project Reports

6/9/1996

Friday ( holiday)

Meeting with Dr. Jamshed Tirmizi, General Manager, Seers (PVT) Ltd and social scientist, ADB project in ealy part of 1996

7/9/1996

Planning for Field Work, Review of literature

8/9/1996

Meeting with Mr. Gaylord V. Skogerboe, Director, IIMI-Pakistan.

Discussion with Mr. Mirza about the awareness programme at the watercourse level, OFWD programme at Sirajwah Distributary and Bhukan Distributary for the promotion of Social Organization.

Meeting with Mr. Shafqat Masood, Project Director, Second SCARP Transition Project and Engr. Muhammad Shoaib Qureshi, Consultant, SCARP on SCARP activities and Community Tubewell programme.

9/9/1996

During Lunch, discussion with Mr Chris Perry about the possibility of formation of Water Users Associations at Distributary Channel level and roles to be played by the farmers group and the Irrigation Department.

Dr. Muhammad Nawaz Bhutta, Director General, International Waterlogging and Salinity Research Institute, Lahore

Meeting with Dr. Cheema, IIMI about socio-economic study of project area of Haroonabad.

10/9/1996

10. AM

Mr. Mian Hafiz Ullah, Chief Engineer/Provincial Coordinator, Irrigation and Power Department, Lahore

11/9/1996

Meeting with Mr. J.A.C. Knops, Expert on Farmer Participation, NRAP, IWASRI, WAPDA.

Dr. Ir. W. Wolters, Team Leader, NRAP, IWASRI, WAPDA.

12/9/1996

3.PM, Seminar given to IIMI staff in IIMI-Pak, Lahore  
" Water Resources Development and Management: Institutional Perspective, Experience from Gujarat, India."

13/9/1996

Travel to Hyderabad via Karachi.

14/9/1996

Visit to Mirpurkhas Field Station

Visit to Hyderabad office, Hyderabad



15/9/1996

Visit to Nawabshah and Sanghar Field Stations

Participation in WUA meeting at WC 9R of Heran Distributary, Sanghar

16/9/1996

Visit to Hyderabad Office, Discussion with Mr. Amin Sohani on resource mobilization by the farmers for O&M of distributary/ minor channels.

A seminar on " Water Resources Development and Management: An Institutional Perspective" was given to the field staff and other professionals working in LBOD project.

Leave for Lahore via Karachi

17/9/1996

Office,

Review of literature

18/9/1996

Draft Report preparation

19/9/1996

Participation in Bahadarwah Minor Committee Meeting

Visit to IIMI field site in Haroonabad and meet the field staff

20/9/1996

Return to Lahore from Haroonabad

21-23/9/1996

Prepare draft final report

24/9/1996

Departure to Delhi via PIA

## **Annex.II. List of Persons met during the Consultancy Period.**

Mr. Tissa Banderagoda, Senior Management Specialist, IIMI-Pak.

Mr. Gaylord V. Skogerboe, Director, IIMI-Pak.

Dr. M. S. Shafique, IIMI-Pak

Mr. Waheed Uz Zaman, IIMI-Pak

Mr. Zafar Iqbal Mirza, IIMI-Pak

Dr. Jamshed Tirmizi, General Manager, Seer (Pvt) Ltd, Lahore

Mr. Shafqat Masood, Project Director, Second SCARP Transition Project.

Engr. Muhammad Shoiab Qureshi, Project Manager, Second SCARP Transition Project,

Mr. Mushtaq Ahmad Gill, Director General, On-Farm Water Management Directorate, Punjab.

Mr. M. Ashraf, Director, On-Farm Water Management Directorate, Punjab.

Dr. Muhammad Nawaz Bhutta, Director General, International Waterlogging and Salinity Research Institute, Lahore

Dr. Chris Perry, IIMI, Sri Lanka.

Dr. Jacob Kijne, Consultant.

Mr. Mian Hafiz Ullah, Chief Engineer/ Provincial Coordinator, FRDP, Irrigation and Power Department.

Dr. Ir. W. Wolters, Team Leader, Netherlands Research Assistance Project (NRAP), IWASRI, WAPDA.

Ir. J. A. C. Knops, Farmers Participation in Irrigation and Drainage, NRAP, IWASRI, WAPDA

Dr. Yameen Memon, Team Leader ( Sociologist ), Hyderabad Office, Sindh

Mr. Khalid Soomro, Director, Agriculture Engineering, OFWMD, Sindh.

Mr. Kapila Wimaladharma, World Bank consultant to Chotiari Resettlement Project.

Mr. Nadeem Khanzada, Social Organizer, Mirpurkhas Field Station, Mirpurkhas.  
Mr. Mustafa Talpur, Social Organizer, Mirpurkhas Field Station, Mirpurkhas.  
Hakeem Khan, IIMI, Hyderabad Office  
Mohammad Rafique Khan, Field Research Assistant, Hasilpur.  
Badr ul Hassan Memon, Field Research Assistant, Hasilpur.  
Dr. Bakhshal Lashari, Engineer, IIMI, Hyderabad Office  
Nizamuddin Bharchoond, ASSO, Nawabshah.  
Abdul Rahman Soomro, Field Research Assistant (FRA), Nawabshah  
Parvez Ahmad Pirzado, Social Organizer (SO), Nawabshah.  
Muneer Ahmed Mangrio, FRA, Nawabshah.  
Raja Meharban Khan, Chairman, WUA,WC 9R of Heran Distributary, Sanghar.  
M. Naveed Khayal, SSO, Sanghar.  
Gulam Sabhir Soomro, SO, Sanghar  
Niaz Hussain Said, FRA, Sanghar  
Abdul Majeel Ansari, FRA, Sanghar.  
Ghous Laghari, SO, Sanghar.  
Mr. Amin Sohani, Financial Analyst, IIMI-Pak Hyderabad Office.  
Mahmood ul Hassan, Field Team Leader, Haroonabad  
Abdul Hamid, Senior Field Assistant  
Khalid Rashid, Field Assistant  
M. Amjad, Social Organizer Assistant  
Nasir Sultan, Social Organizer Assistant  
Bilad Asghar, Social Organizer Assistant  
Mr.Ubaid Ullah Anwar Joyya, President, Bhadarwah Minor Committee.

### **Annex.III Terms of Reference**

1. Visit IIMI's Social Organization pilot projects in Punjab and Sindh and observe and evaluate ongoing activities.
2. Meet with selected key persons in agencies and other pilot projects in Punjab and Sindh.
3. Consult available project reports and other related literature.
4. Based on (1) , (2) and (3) prepare a consultancy report commenting on the membership, structure and functions for the proposed distributary level water users organization.

# IIMI-PAKISTAN PUBLICATIONS

## CONSULTANCY REPORTS

S.No	Title	Author	Year
C-1	Consultancy inputs for the preparation of project inception report on social organization in irrigation management	P. Ganewatte P. Pradhan	Jan 1995
C-2	Regional Salinity - Sodidity Issues in Punjab, Pakistan Consultancy Report	Dr. James W. Biggar	April 1996
C-3	Study of Water and Salt Balances for Eight Sample Watercourse Commands in Chishtian Sub-division, Punjab, Pakistan - Consultancy Report	E.G. van Wayjen	June 1996
C-4	Unsteady Flow Simulation of Pehur High-Level Canal including Automatic Downstream Water Level Control Gates Consultancy Report	Dr. Kobkiat Pongput	June 1996
C-5	Distributary Level Water Users Associations in Pilot Projects for Farmer-Managed Irrigated Agriculture, Punjab and Sindh Provinces, Pakistan	Dr. Prachanda Pradhan	Sept 1996