

Institutional Reforms in Irrigation Sector of Balochistan, Pakistan

Proceedings of the Workshop Held at
Dera Murad Jamali on 30 to 31 October 1999

Compiled by
Waheed uz **Zaman**

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Balochistan Irrigation And Drainage Authority (BIDA)
International Irrigation & Drainage Institute (IIDI)

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FOREWORD

Farmer participation is central to the irrigation sector reforms implemented by the Government of Pakistan. The workshop on institutional reforms, at Dera Murad Jamali, was organized to inaugurate the pilot Area Water Board (AWB) of Pat Feeder Canal Circle and to improve understanding of the importance of the institutional reforms among professionals of different agencies and farmers. The workshop was a joint effort of Balochistan Irrigation and Drainage Authority (BIDA), National Drainage Program (NDP) and the International Irrigation Management Institute (IIMI), Palustan.

The proceedings illustrate the efforts being undertaken by the Authority, NDP and other institutions. They also exemplify the partnership among the key players of reforms; BIDA, NDP, OFWM, farmers and IIMI. The farmer leaders from Punjab and Sindh gave presentations and shared their experiences in the discussions.

This publication covers the FO's experiences from Punjab and Sindh and provides a useful insight into and information about the on-going FO's pilot tests in the these provinces. The articles, papers and discussions presented in these proceedings, it is hoped, will not only be useful to the implementers and practitioners of reforms but also to researchers.

The workshop would not have been made possible with out the financial support from the BIDA and NDP. The cooperation and coordination extended by Abdus Salam Khan , Former Secretary/MD BIDA, Ghluam Usaman Babai, Provincial Coordinator NDP is gratefully acknowledged. The concerted efforts made by Muhaamd Ibrahim Rind, Director Area Water Board, Pat Feeder Canal Circle, Mian Bashir, Deputy Director PCRWR, and the participation of the staff of the Agriculture Department and OFWM that made the workshop successful is also acknowledged.

The efforts of Waheed-uz-Zaman (IIMI), in organizing the workshop and compiling these proceedings are appreciated.

Thanks are also due to Sofya for editing and Tabrez for formatting this publication.

Dr. S. A Prathapar
Director
Pakistan National Program
International Irrigation Management Institute (IIMI)

Message

For the reorientation of the irrigation and drainage system, the Balochistan Assembly passed a bill in July 1997, which resulted in the enactment of the Irrigation and Drainage Act of 1997. Under this Act, the Balochistan Irrigation and Drainage Authority (**BIDA**) was formed to run the irrigation system on participatory basis and modern lines. Under this new set up, the authority at province level, AWB at canal command level and FOs at distributary level, will be formed.

The reforms on which we are talking about are not untested reforms . Many countries of the world, which were earlier emphasizing the government role in the irrigation management, are, now, introducing the participatory approaches. The countries, which are adopting this policy, include; America, Japan, India, China, Philippine, Egypt and Mexico. Under these new reforms the government does the management of dams, barrages and main canals but the management of distributaries and minor canals are run through farmer participation and consultation. The management, repair and maintenance of lower-tier system and the assessment and collection will be the responsibility of the FOs. We are also setting up the system on the same lines. Under this system, democratically elected FOs are being formed. These FOs will enjoy the powers of the Executive Engineer at distributary level. In this way, it will be a completely decentralized, participatory and democratic system.

It is a matter of great pleasure for us that under the new institutional reforms, we have the first Area Water Board. Area . This Water Board has been created at the Pat Feeder Canal Circle of Balochistan.

The proceedings of this workshop cover the valuable experiences from other provinces of Pakistan. It is my strong hope that participatory irrigation management system will yield good results.

Muhammad Amin
Secretary/ Managing Director
Balochistan Irrigation and Drainage Authority (BIDA)

Quetta
Balochistan

ADDRESSES

**HAJI MIR HAZAR KHAN KHOSA
EX GOVERNOR BALOCHISTAN**



“The Farmer Organizations will be very effective in solving the water related disputes at local level”.

Lady's and gentlemen,

I am extremely pleased that this program is being held in the area where, in initial days, there was not even a single drop of water, If we look at the history of Jafarabad and Nasirabad the people relied on rainwater. In the British era, District Jafarabad received water from long distances. Later, it started receiving water from the Shukhar Beraj. The availability of water converted our barren lands into productive lands.

We are very lucky that we have the Worlds largest network of irrigation system. But unfortunately, with 57 % of the population engaged in agriculture, we still import wheat and edible oil from other countries. We have never thought how much of our national income is being spent on these imports. We must think why we reached this situation. Where are the weaknesses. We have enough water, land and human resource. We have every thing in this country but we do not know how to use these resources. Thus it is our duty to understand PIM and make it successful.

I am happy that in our province BIDA and FOs are being formed NDP and IIMI have collaborated for this workshop In this workshop experts from Balochistan and our brothers from Punjab are participating Our brothers from Punjab have briefed us about the progress made in the PIM in Punjab

We have to solve our problems collectively. To solve the water disputes FOs will be very effective. This workshop, through group discussions will provide an opportunity to farmers to discuss their problems and their solution.

Under the NDP the Balochistan Irrigation and Drainage Authority (BIDA) has been formed. The purpose of this workshop is to create awareness among you and to get your support on the program. Under this program the FOs will be created that will be responsible for equitable water distribution.

Once I was in Jacobabad A foreign High Commissioner visited us I was asked by our Deputy Commissioner to take the High Commissioner in the field to show him some crops In the field we noticed that some lands were waterlogged and some were completely dry When he saw water ponds in some areas he asked me why there was too much water? I told him that the area was waterlogged Then we reached another area, which was like a desert He asked me, why it was so I told him that the area was non-reachable by canal water He said it was strange that where water was not needed was submerged in water and where it was needed, it was completely dry He then

said this nation is not using water properly. On his remarks, I pondered for a while, where is the fault? And what is the remedy for it?

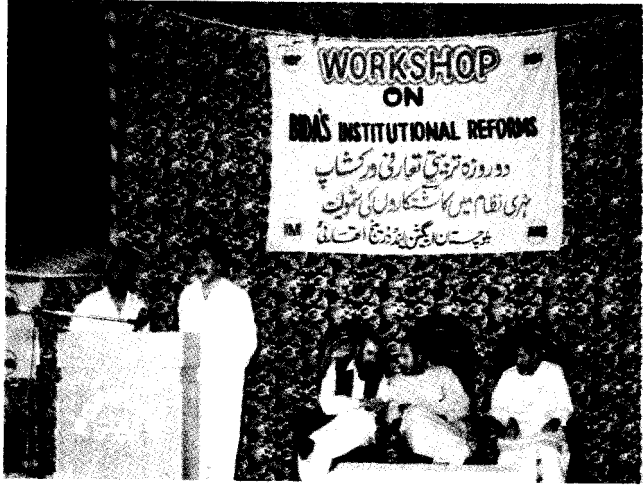
Napoleon Bona Part was a French Commander. Once, he wanted to cross a mountain. The people told him that it was very difficult to cross that mountain. Because no one had been able to cross it till then. Napoleon Said: Why a man can not cross it? A man is a very powerful being. I will cross this mountain. Thus, we can also overcome all the difficulties.

The Qaid-e-Azam, has also advised us to work and work hard. We should sincerely make efforts to accomplish the responsibilities, which are being delegated to us. Get organized under BIDA and NDP and perform your responsibilities sincerely. Your agricultural income will increase with the success of NDP program.-----Khuda Hafize.

**DR. S.A. PRATHAPAR
DIRECTOR
(IIMI) PAKISTAN, LAHORE**

I pledge IIMI's commitment to facilitate the process to bring farmers and BIDA together.

I am very happy to be here. It is a new experience for me to be in the audience like this. I am really grateful to have an opportunity to be with you today. What I will try to do is to let you know what IIMI is about briefly, as well as, I will tell you why the reforms are being contemplated,



proposed and implemented and then let you know how we can collaborate and facilitate the process. IIMI is an international research and development institute. Our livelihood depends on land and water. Therefore we should not waste them. The way irrigation and drainage in Pakistan was managed determined in 1873 by the canal act. Since then 125 years have passed, and lots of changes have taken place.

We are getting and distributing more water from our rivers, and there is lot more agricultural production. Therefore, the change has to come about and that is what Government has decided to do in 1997. One of the most important elements of these reforms is participation of farmers in the management of water. Farmers have to be actively involved in the decision making on a daily basis. That is the most important element that differs from the act of 1873. Therefore I appeal to irrigation department and the farmers to work very closely to make these reforms a success.

What can IIMI do to help this process? IIMI has experience in assisting reforms in Punjab and Sindh. We are hoping that we will do a similar exercise in the Frontier province very soon. By this way IIMI hopes to generate a common pool of knowledge and wisdom to help the people of Pakistan.

Today I pledge IIMI's commitment to facilitate the process to bring farmers and BIDA together.

Thank you

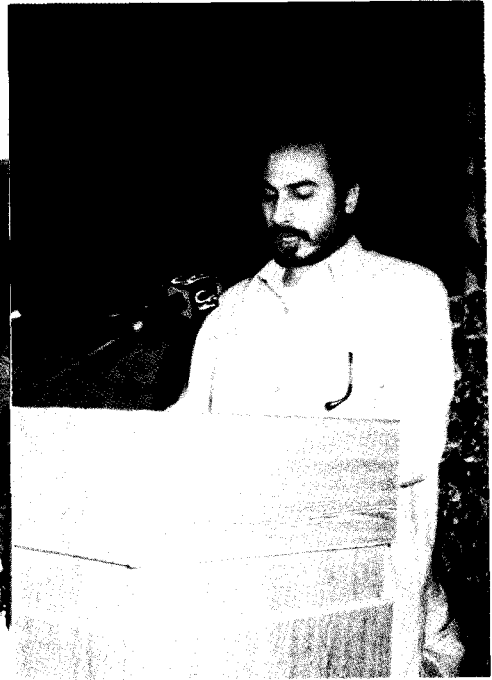


Professional women from different departments actively participated in the workshop.



Among the audiences (Right to left – first row) Mir Taj Muhammad Jamali. Ex Chief Minister Balochistan and Dr. S.A. Prathapar, Director IIMI.

**NAWABZADA MIR KHALID KHAN MAGSI
EX MINISTER BALOCHISTAN**



“We will be able to ensure equitable water distribution and increased agriculture production through participatory reforms”.

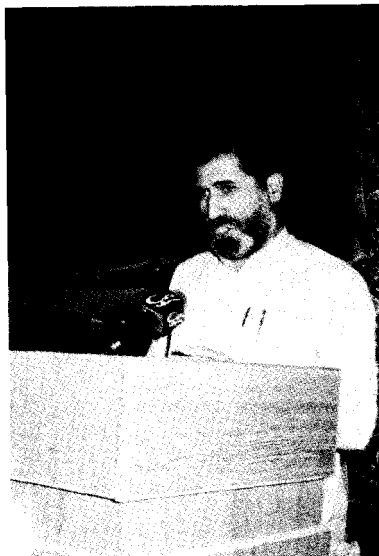
I am delighted to know that the Government has ensured farmer’s participation in irrigation management. For this purpose some initial steps have been taken.

Our irrigation system is the largest in the world. But unfortunately we have not been able to achieve the agricultural targets until now. Besides, having fertile agricultural land and all other resources, we are still dependent on others for our agriculture needs. I hope under the BIDA reforms, we will be able to ensure equitable water distribution and increased agriculture production.

I thank all the participants of the workshop

**GHULAM USMAN BABAI
PROVINCIAL COORDINATOR
NATIONAL DRAINAGE PROGRAM NDP
(BALOCHISTAN)**

“The concepts of collective action at the pattern of Mir-e-Aabs that was prevalent for Karazee management will be promoted in BiDA reforms:.



Mr. Chairman Chief Justice Retired Mir Hazar Khan Khoso,
Ladies and gentlemen

I thank the organizers of the workshop for providing me the opportunity to speak here. I am happy that such a large number of farmers are gathered here know about National Drainage Program.

There are 63 levels of efforts involved to get single bread at our dinning table. The NDP is one of these 63 efforts. In our area people are aware of different projects. NDP is one of these projects.

We all know that Pakistan is an agricultural country. Agriculture provides 50% of the livelihood to our population. Agriculture contributes 25 % to the GDP. Agriculture is comparable to an engine in the economy of the country.

We have three big reservoirs. Tarbela and Chashma dams are constructed on the River Sindh. Mangla Dam is situated on River Jehlam. We have 19 barrages, 12 links canals and more than 100,000 watercourses. The length of the canal is 61000 km. All our efforts are going into extending the irrigation system. But we have crises in the management drainage system. Experts are of the opinion that with excessive application of irrigation water, we are destroying our lands. An effort has been made, under the NDP, to overcome the crisis.

Our 37.6 % area is waterlogged. Of this, 15 % is severely waterlogged. In Balochistan, 14% of the area is waterlogged. Of this, 6 % is, again, severely waterlogged. The problem of waterlogging in Sindh is going from bad to worst where 50 % area is waterlogged.

NDP has four components. The first is Sector Planning and Research. This component explores the reasons of waterlogging. Under this component feasibility studies will be conducted. Balochistan is also included in this program and the work on Balochistan Effluent Disposal is in progress. Also, the National Surface Drainage System is being constructed. Under this program the drainage effluent of all the four provinces will be drained into the Arabian Sea. Unless we complete this program the small schemes will not be of any use.

Balochistan has only 10 percent of the irrigation system. Major portion of the irrigation system falls in Punjab, Sindh and NWFP. The Balochistan Government is trying to include those small schemes under NDP, which have proved successful. Research is being conducted to assess the need for Pat Feeder Seepage Ground Water Regime. Research is also being undertaken to gauge irrigation requirements of orchards.

Although, the Irrigation Department has achieved a lot in the past years, but farmers have not received much benefits. Thus, on the advice of the experts, under the NDP reforms the provincial Irrigation Departments have been converted into Provincial Irrigation and Drainage Authorities. Balochistan Assembly enacted the law in July 17, 1997. Under the law irrigation Department has been converted into BIDA. But the process of complete change will take 7 years. Under the BIDA will be Area Water Boards and under AWBs will be farmer's organizations.

The basic concept of irrigation reforms is similar to the management of karazes by the community. The mir aabs were selected. Then, the irrigation was done collectively. The same concept of Karazez is adapted in these reforms and this is not a new idea.

The system has deteriorated to the extent that now the option of performance contract is being considered to improve the system. Under this program the system will be handed over to farmers within two years. As you have been told that AWB will be created. The functional modalities of the AWB will be decided on the advice of IIMI Pakistan.

There is not much work on farmer organization Agriculture Department has formed some FOs. They have applied for registration with PIDA. A registrar is being appointed within PIDA for this purpose. The World Bank still has to give the approval for this. Moreover, the FO bylaws will also be formulated For this purpose the services of Justice (retired) Rashid have been engaged. No organizations can run without by-laws and rules.

The representative of IIMI will tell us in detail about the Farmers' Organizations components

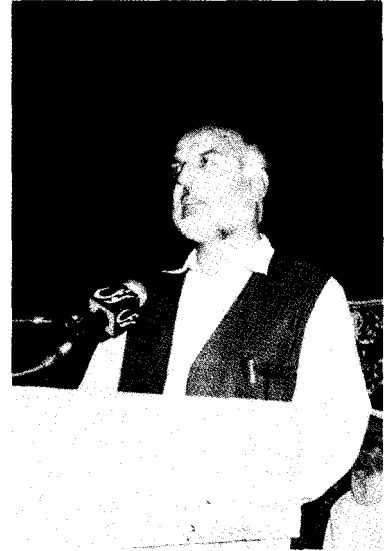
Now I turn to the third component of the NDP: The Investment Component. World Bank has allocated funds for this component. The FOs will have their office and accountant and it will be resemble a municipality system. The technical assistance to FOs will be provided by the BIDA. The FOs will be responsible for all the affairs of their area. The FOs will implement the schemes in their respective area. In this case the farmer's contribution in the investment cost will be less. On the other hand, if the scheme is not implemented by the FOs. It will be, then, implemented by the PIDA and farmer's share in the investment will be higher. In NWFP and Balochistan Asian Development Bank is providing support for investment. The World Bank is providing financial support for institutional reforms.

Under the financial support of ADB, we are trying to initiate 4 schemes. These include: Lesbela canal and minor, Lesbela Drainage system, Joe Noora Drainage Project, Khuzdar band Khushdil Khan ad Loralai Drainage Project. Similarly, the pre-qualification tender has been invited from contractors for the Pilot Interceptor Drain Pat Feeder. After the experimentation of Interceptor Drain, the project will be implemented in the entire region. In this year the auto-gauge recorder will be installed along the Kirthar and the work on some other schemes is also in progress.

The drainage has been divided into two parts: On-Farm and Off-Farms. The World Bank and the Asian Development Bank has set a criteria for these drains i.e. if the drain is less than 15 cusecs, the FOs will operate it. If it is more than 15 cusecs, BIDA or AWB will operate it. We are working on 37 schemes under this component. I am acting as the coordinator of supervision and project coordination. I am trying my best that none of our schemes remain pending and we do not lag behind other provinces.

**ABDUS SALAMBLOACH
DIRECTOR GENERAL AGRICULTURE,
BALOCHISTAN**

“We will work together with farmers to achieve the objective of the Participatory Irrigation Management PIM”.



Mr. Chairman, Dear Guests and farmer brothers,

We should have gathered here loiiig ago to discuss the institutional reforms. We are too late in initiating these reforms Our farmer community has suffered a lot due to non-participation in the irrigation system.

The history of irrigation is very old. In Balochistan, it was initiated in the 1929. The Pat Feeder Canal was constructed in 1964 Later, it was rehabilitated. Now this canal is receiving nearly 6700 cusecs

It was our duty to ensure farmer's participatioii in the start but we could not do this. The result is that East Nasirabad is now completely submerged. Vast stretches of land have been rendered infertile due to waterlogging. The areas of Sibbi jadeed and Noshki Jadeed have lost their production potential. Farmers are not given orientation about canals aiid drains. I wish I could take the water of these drains and use it to irrigate lands of berooni (external) Pat Feeder.

National Drainage Program is being implemented at country level. It will take 25 years to complete. It is expected that its second phase will also come. The focus of the second phase will be on agricultural productivity, equitable water distribution, and participation of the farmers **aiid** drainage management.

Under this program an Area Water Board has been formed. Unfortunately, the selected fanner members of the BIDA have not much connection with the agriculture farming.

For the first time, under BIDA, it has been felt that no system can be run without the participation of the fanners. The first and biggest experiment of farmer's participation in irrigation management was done in Mexico. At the initial stage farmers confronted with difficulties but the government was determined to implement the participatory reforms. Whosoever wants to see the PIM can see the example of Mexico. Similarly, in Balochistan, farmer organizations (FOs) are being created at distributary level. In a phased manner, the whole irrigation system will be handed over to the FOs. These FOs will perform the functions of assessment and collection of abiana, operations and maintenance and the water distribution. I believe that after farmer participation no one will complain that head enders are receiving more water and tail-enders receive less because all will share both the advantages aiid disadvantages. In my view all will get their due share If FOs formulate positive policies we will cooperate with them.

The lands where the water table depth is at or less than 5 feet, efforts will be made to lower the water table, We will construct drains, sub-drain and main drains to evacuate the saline water

You are well aware of our earlier policies. We constructed the drain but we did not decide where to throw the effluent. Resultantly, the effluent was seeping from Kirtler Canal and the whole area became waterlogged. Since the Sindh Province did not agree to give route for effluent flow, it was decided to drain the effluent in the Kirther. It was our ill planning that we have been throwing 500 cusecs saline water in the canal water. Consequently the agriculture production of District Usta Muhammad and other districts decreased significantly. So much so that it effected the health of human being and animals, since they have been suffering from Diarrhea and Cholera.

Considering this state of affairs the policy of PIM has been initiated. This will be successful only, if all the farmers enthusiastically participate in it. It will not be a success without their participation.

I also belong to an agriculture family and I have close association with farmers. Whenever agriculture production decreases, it affects the economy of Pakistan. You have noticed that inter-provincial transactions have been banned. On one side, we are importing wheat. On the other hand, the prices of flour and wheat are touching to the sky. Our support will be with you and I hope we will succeed in our objectives.

At present we have created 6 farmer organizations. They will be registered under BIDA. Once they are registered they will start functioning.

The first FO was formed at Deh Lashari and Khanpur . Its chairman is Haji Abdul Aziz. It has 56 members

In Jat Pat , the chairman of the FO is Khan Khuda Dad Khan. It has 26 members. In Randh Khan the Chairman of the FO is Mir Janghaiz Khan and at Jdher, the Chairman of the FO is Muhammad. At Khadrati, Abdul . Nasir is the Chairman. It has 98 members.

Under the Participatory Projects the tile drainage schemes will cover the area of 650 acres, each. The existing surface drains will cover 540 Km. The length of new surface drains will cover the 3500-km. Under this program 30 watercourses will be constructed. Biological reclamation project will cover 2000 acres Both the Agriculture Department and the Forest Department will undertake the reclamation project. Under this project the waterlogged lands will be reclaimed through salt-tolerant plants and trees. We are still experimenting on this and I hope we will improve through experimentation.

I hope very much that we will work together with farmers to achieve the objectives of the PIM. This will help farmers to increase the productivity of their lands, ensure equitable water distribution, and resolve the disputes.

I, again, thank all of you: Khuda Hafiz

**ZAIN UD DIN KHAN
CHIEF ENGINEER, IRRIGATION**

"Participatory reforms are meant to provide autonomy to farmers in decision making".



Mr Chairman and Dear Guests,

For some inevitable reasons Mr. Abdus Salam Khan, Secretary Irrigation/Managing Director Balochistan Irrigation and Drainage Authority (BIDA) is unable to participate in the workshop. I would like to apologize on his behalf. On behalf of Balochistan Irrigation and Drainage Authority (BIDA) and the International Water Management Institute (IWMI), I welcome you in this workshop.

Why the need of new organizational set up of BIDA has arisen? I would like to present it briefly. For years the agriculture has depended upon the Irrigation and Power Department. It has been felt that the department's staff has lost the credibility among the farmers. This credibility gap is due to:

- Inequity in Water distribution,
- Shortages at the tail ends of the system,
- Mistrust of small farmers on the large farmers; and
- Dissatisfaction over the assessment of the abiana

On the advice of the experts, considering the participatory approaches in other countries of the world, it has been decided to test the participatory irrigation management in Balochistan. To implement this experiment IWMI's support has been sought. For this, the Government of Balochistan has created an autonomous body, Balochistan Irrigation and Drainage Authority (BIDA). The composition of BIDA is as follows.

- There will be 4 farmer members and 6 Government members in the authority.
- The Irrigation Minister or the Additional Chief Secretary will be the Chairman of the authority.

At province level, all the matters related to irrigation management, such as

- formulating and implementation of policies,
- acquiring and distributing irrigation water,
- managing drainage system in the waterlogged areas,
- maintaining irrigation system and collecting the irrigation service fee will be the responsibility of the authority.

There will be Area Water Boards under the Balochistan Irrigation and Drainage Authority (BIDA), which is being inaugurated today

The Pat Feeder AWB will also comprise of 3 farmer members and 6 Government members. The functions of AWB will be as follows

At canal level, all the matters related to irrigation management, such as:

- formulating and implementation of policies,
- acquiring and distribution of its share irrigation water,
- managing drainage system within canal command,
- Forming farmer organizations at minor and distributary level
- Ensuring equitable distribution of water
- maintaining irrigation system on self-help basis and
- collecting the irrigation service fee from the water users
- will be the responsibility of AWBs.

Recently, the Pat Feeder Canal system and its related drainage system have been cleaned on self-help basis. BIDA program will be implemented under the National Drainage Program (NDP). The drainage schemes in Kirther command under NDP will help mitigate water logging and salinity in the area.

Inshaullah the NDP Muradwah and Khapulawah projects will bring 0.3 m acres of land under cultivation. In this way, the agriculture production of Balochistan will increase.

Similarly, in the Hairdin area the interceptor drains will be constructed which will help increase agriculture production. The Hairedin System will, not only be rehabilitated but it will be provided with a drainage system.

The participatory approach will increase the confidence among the farmers. They will also feel that nothing is being imposed on them from the top and what they are doing have autonomy in its decision making.

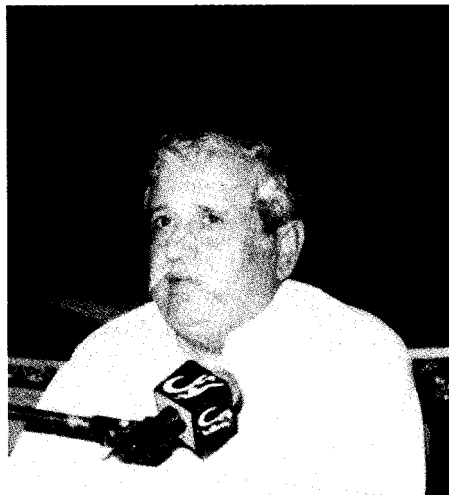
This is the start of a new era. With these revolutionary steps, not only the farmers will become better off, the country will also prosper.

I hope this workshop will yield positive results.

I, once again, thank all the audiences, for participating in this workshop.

**MIR TAJ MUHAMMAD JAMALI
EX CHIEF MINISTER BALOCHISTAN**

**“Institutional reforms with out involvement of
Politics, is key to success”.**



water is very important for us. In this country, if any thing is free of cost it is water. We have lots of rivers but Balochistan has no water. Thus, we have to give importance to water and use it prudently. We are entering into the 21st century but we are unable to provide water at the door-steps of farmers. Even, our Irrigation Department could not do it. Another bad luck is that, we, the farmers, do not know, how to irrigate our fields. We do not know whether to apply 1 inch or 2 inches of water . Some time we apply so much water that wheat crop becomes yellow. We should understand how to irrigate? and how much to irrigate? so that we can save water.

I was told that in Balochistan there are 73 null streams which are being fed by rainwater. Millions of cusecs of water is wasted every year. Balochistan is a province where women and children travel up to 10 miles to get water. None of the governments have solved this problem. We have not addressed this problem. Every body looks towards government. But perhaps, now governments can not do this work. We have to do it collectively. This time there was lot of water in the canals but tail still remained dry. The reason was that Irrigation department, under the political pressure, sanctioned many illegal pipes. Due to these illegal pipes people at the tail end could not get water.

The Irrigation Department should deal with every body according to law . It should not be afraid of politicians. If the department will accept political pressures then how BIDA will function? Therefore, small or influential, every body should be dealt with according to law.

I, also, could not maintain fairness in water distribution during my government because I was in need of support and votes of these people. But it has been my desire that every body should get water according to their due share. I, therefore, request you, not to involve politics in BIDA reforms.

The FOs should have their own vehicles so that they should be able to patrol along the, canal to check the water levels.

In Sindh there is lot of enthusiasm about the PIM reforms. Punjab is also heading towards this process. In Balochistan, the process of change is at the initial stage. We have to see whether the farmer organizations are useful for us or not. These FOs can only be successful if the politicians are kept away from them.

I would like to raise another issue at this forum. If the Kala Bagh Dam is constructed then government should approve a separate barrage for Balochistan.

My last submission is that water should be properly used and we should all make efforts to make this program a success.

**MUHAMMAD IBRAHIM RIND
DIRECTOR AREA WATER BOARD
PAT FEEDER CANAL, BALOCHISTAN**

“We want to benefit from the experiences of OFWM and IWMI to implement farmer organization Project”.



My respected farmer brothers Aslam-o-Aliakum;

First of all, I would like to thank all of you for participating in the workshop. I appreciate that you have come here leaving behind your cultivation activities. I also thank those farmer brothers who are participating from the Punjab and Sindh and have come from long distances. I also thank my colleagues from NDP, Agriculture Department and PCRWR who are participating on our request. Lastly, I thank IIMI, who is behind all the efforts gone in this program.

My farmer brothers you know that Pakistan has the world's largest irrigation system, but its performance is much poorer than the many other countries of the world. There are several reasons for that. These are:

- We do not have the adequate infrastructure for available water. Consequently, a large amount of water goes to the sea every year or is wasted on our lands which is causing waterlogging.
- The system is not properly maintained. The reason for this poor maintenance is that government does not have enough resources to maintain it. Resultantly the system is deteriorating.
- Inequity is also one of the causes of poor performance. One of the reasons of inequity is water theft, which deprives many farmers of their due rights.

My farmer brothers in Balochistan our irrigation systems such as Pat Feeder, Kirther, Lesbela, also have some irrigation related problems. This situation is affecting the productivity of agriculture, negatively. The problems of irrigated agriculture include:

- Waterlogging
- Water theft and inequity of water distribution
- In upper Balochistan, water table is lowering at drastic rates

The solution of these problems is that farmers should form their organizations. They should advise us to resolve these problems.

Our government has already taken many steps in this direction. In Punjab, Sindh and NWFP the farmer organizations are being pilot tested on 12 distributaries. In Sindh, The FOs are being extended on 10 more distributaries. In these provinces the pilot experiments on large canals have also been initiated. The IIMI representatives will give presentations on the experiences of these

projects. In this situation, there is need that farmers of our province should also come forward, create farmer organizations, **and** help our department to solve the problems.

My farmer brothers we will undertake the FOs pilot Project with the help of OFWM and IIMI Pakistan. We do not want to do this work in isolation. We want to benefit from the experiences of OFWM and IIMI.

We will conduct the pilot test of farmer organizations on three distributaries of Pat Feeder, Kirther, and Lesbela. Balochistan Government has formed the Area Water Board. The formal inauguration of this AWB will be done in this workshop. Our AWB comprised of 25 big channels, 200 minors and distributaries and 2000 watercourses, which irrigate 8,00,000 acres belonging to all three canals.

My farmer brothers the government has already started the Command Area Development Project in this AWB. The purpose of this project is to mitigate waterlogging and salinity so that the abandoned land can be rehabilitated.

Along with the government efforts, I request you to form the farmer organizations and help the government to expedite its efforts. This will help improve your agriculture production. This is in your benefit. If you will prosper the whole nation will prosper. Moreover, these canals and distributaries belong to you. Our cooperation will be with you.

At the end, once again, I thank all of you for participating in the workshop.

PARTICIPATORY REFORMS: IMPACTS FROM OTHER COUNTRIES OF THE WORLD.

Waheed-u-Zaman¹

“Improved cost recovery, better water distribution, cheaper maintenance, increase in farmer’s income and reduction in the government expenditures, are the main impacts of reforms”.



BRIEF HISTORY OF PIM

Participatory Irrigation Management (PIM) is not a new thing. It has centuries old history. Rather, it tells us that the local groups developed the world’s first irrigation schemes.

At government level, before 1950s in America, the local groups were involved in irrigation management. Between 1950s and 19970s the PIM was started in France and Taiwan. In the developing countries PIM was promoted between 1980s and 1990s. Particularly, in mid 1980s, the international financial and donor agencies introduced the concept of PIM all over the world. In Pakistan, in mid 1990s, the PIM was adopted in its national strategy.

PIM is a global movement now. Different governments are implementing PIM according to their own economic, social, cultural, and political circumstances. Therefore, the PIM has different names in different countries of the world.

In Indonesia and Philippine it is called turnover, in Mexico “management transfer”, in Senegal it is “disengagement”, in China “post responsibility system” in Bangladesh “privatization” in Nigeria it is “commercialization” and in India and Sri Lanka it is called “participatory management” (Geijer, J. et al., 1995)

Areas of Impacts

The following section covers the impacts of irrigation management transfer around the world. The paper covers the following area of impacts.

- Abiana Recovery
- Income of Farmers
- O&M expenditure of Canals
- Water Supply
- Production
- Area under Cultivation and Crops
- Maintenance conditions of Canals
- Government Expenditure

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IMPACTS ON ABIANA RECOVERY

A study on irrigation management transfer in Turkey Plusquiellec (1995) reports that water charges are received from the water users in three installments for each irrigation season. The recovery of the first installment which was due in June 1995 varies between 75% to 90% which was much greater than the past performance of the government agencies.

Plusquellec (1995) reports that before the irrigation management transfer the Mexican government was recovering less than the 30% of the O&M and energy cost. After the transfer the recovery of the O&M cost of irrigation system as a whole has now increased from 30% to 80%, and the recovery of the transferred systems is 100% in Mexico.

A study conducted by Johnsan III et al. (1995) to assess the institutional changes and management performance changes in two districts in China. Their report revealed that prior to reform the water fee collection rate was 100%. However as the reforms were introduced the collection rate dropped significantly. It fell from 100% to 85%. The reported reasons for this drop in collection rate were confusion within the irrigation system about the management responsibility coupled with the factor of increase in volumetric water fee. Collection rate was improved through the improved management services and extensive education programs.

Pant (1995) discusses the results of a case study on the Turnover of Public tube wells in Uttar Pradesh and examines the changes associated with irrigation management transfer IMT. These changes are water use efficiency, cropping intensity and productivity, cost of water to the beneficiaries, control of water to the water users and gain or losses to the government. He has mentioned that with regard to the collection of water charges the data shows mixed results. For 1992-93 the water charges collection for the tube well show increase in both Kharif and Rabi as compared to the collection before the Irrigation Management Transfer. In case of Rabi it was US\$ 382 before IMT and US\$ 433 after IMT. The average per year revenue collection from the tube well shows increase after IMT, which is from US\$ 611 before to US\$ 620 after.

Musa (1995) examined financial sustainability for operation, maintenance and management on Kano River Irrigation Project KRIP after irrigation management transfer with the collaboration of the Federal Government of Nigeria and the International Irrigation Management Institute IIMI. He mentioned that the impact on cost recovery was also significant. Both the representatives of WUAs and the representatives of Hadejia-Jama'are River Basin Development Authority (HJRBD) admitted that the WUA contributed in mobilizing the farmers to pay their collected water charges even before the water was released to them. Recovery of the water charges was below 50 percent before the turnover of an irrigation system. The author has not mentioned explicitly the amount of increase in recovery of water charges, however the reports show that there was distinct increase in the recovery of the water charges after the turnover of irrigation system.

A paper presented at the Regional Workshop of the Farmer-managed Irrigation Network held at Khon Kaen, Thailand by U. Gautam (1990) describes the role of social organizers in improving the irrigation management in context of Nepal experience. In this paper the author says that after the formation of the user's *tolis* (associations) an overwhelming majority of farmers showed satisfaction about the assessment of the water cess. Before the water user's *tolis* the farmers were dissatisfied with the assessment.

Honorato L. Angeles reported that "the ability to collect irrigation fees in Philippines was well demonstrated by one system where fee collection reached a record 96 percent. Under government management, the rate of fee collection in that system was a little over 50 percent on the average."

IMPACTS ON INCOME OF FARMERS

IIMI (1995) reported that "the transfer of mesqa's in Egypt led to an increase in average annual farm income of US\$ 300 per hectare."

Norman Uphoff (1986) reported that "in Nepal, Production data gathered by the Agrarian Research and Training Institute (responsible for introducing the farmers' organizations), showed a net profit of 23 rupees per bushel from paddy production in that season. **This** figure was used to calculate the value of added production (rather than the gross sale price)."

Kolavalli and Raju (1995) conducted a study on the result of the turnover of public tube wells by Gujrat Water Resources Development Corporation. India reports that "three societies which had reported high profit ranging from Rs 8000 to Rs 18000 annually had broad based representation and appeared to be genuine cooperatives."

IMPACT ON O&M EXPENDITURE OF CANALS

Norman Uphoff (1986) stated that "in aggregated terms, Lowderlilk (1985:2) reports that farmers contributed \$7.6 million worth of labor in the large (\$42 million) program to rehabilitate turnout areas (chaks) in Pakistan."

Musa (1995) examined financial sustainability for operation, maintenance and management on Kano River Irrigation Project KRIP after irrigation management transfer with the collaboration of the Federal Government of Nigeria and the International Irrigation Management Institute IIMI. He mentioned the impact of irrigation management transfer on government expenditures. The government expenses on Operation, Maintenance and Management OMM of irrigation systems in 1983 were close to US\$750/ha/ year. While the irrigation water fees were approximately US\$95/ha/year. After the turnover the expenditures of OMM chipped in by the government has dropped to about US\$10/ha/year while the irrigation water fee is US\$25/ha/yaer.

IIMI (1995) reported that "in southern Luzon, Philippines, within 4 years the system's budget deficit declined from an annual average 1982-85 of Ps. 268,500 to an average of Ps. 7750 during 1986-89, the first four year after turnover."

Waheed-uz-Zaman (1998) conducted a study on impact impacts of fanner participation for water resources management for the farmer organization of the Hakra 4-R Distributary belonging to the Fordwah Eastern Sadiqa Canal System in Southern Punjab, Pakistan. He reported that The farmer organizations of the Hakra 4-R Distributary under took a five days maintenance campaign. Its five sub-system level water users' organizations (WUOs), participated separately for one day each in the maintenance campaign. A total of 794 farmers, their leaders, participated. Also, 120 tractors, mostly with rear-mounted-scrapers were mobilized.

The total cost of resources mobilized, including tractor traveling costs, man hours and tractor hours at the site, is equivalent to Rs 124,000/= (or US\$ 2,800/=). The estimated cost of the WUOs' maintenance activities was Rs 400,000/= (or US \$ 9,032/=). Thus comparative estimate of the maintenance work was provided by the Sub-divisional Officer (SDO) of Haroonabad Sub-division of the Punjab Irrigation Department in the presence of an Asian Development Bank Consultant during his visit to the Haroonabad area. The farmers now believe that they can undertake cost-effective maintenance activities.

IMPACTS ON WATER SUPPLY

A research conducted by Aziz (1995) on irrigation management turnover to private water users associations in Egypt provide the comparison after and before turnover of the mesqa system from a sample of an improved mesqa under the Irrigation Improvement Project (IIP). The study shows that mesqa conveyance efficiencies increased from an average of about 70% to about 90 and 95%. The overall irrigation efficiencies (conveyance x field application efficiencies) for 26 observation of sample mesqas averaged about 40% before improvements and ranged from 70% to 80% after improvements. With regard to equity conditions data also shows that before the turnover of mesqas about one-third of 137 sample farmers interviewed reported serious problems of inequitable water distribution. After the turnover none of the 137 water users reported unequal water supplies between head-end and tail end. The report further points out that before the turnover, about 65% of the sample farmers reported that, in summer season, water supplies were insufficient for good crop production. After the turn over only 10% sample farmers reported problem of inadequate supplies. He also found that irrigation time per hectare for five main crops was decreased from an average of about 15 to 17.5 hours, to about 5 to 7.5 hours per hectare after the turnover of the new mesqas.

Musa (1995) studied financial sustainability for operation, maintenance and management on Kano River Irrigation Project KRIP after irrigation management transfer with the collaboration of the Federal Government of Nigeria and the International Irrigation Management Institute IIMI. He mentioned the impact of irrigation management transfer. The WUA for Aglose in 1991/92 cleaned 1.3 km length of distributary channel leading to a 12% increase in the discharge in middle and final sections of the channel.

IIMI (1995) reported that "in a post-facto design about turnover of a medium size pump scheme along the Red River in Vietnam there was an increase in irrigation efficiency from 50% to 81%. There was also a decrease in water consumption per ha from 8000 m³ to 5120 m³ (a 36% drop) over a four year period after turnover.

IIMI(1995) reported that "in another post-facto report, water delivery efficiency in the Azua system in the Dominican Republic increased between 25% and 30% after management transfer under the On Farm Water Management Project "

IIMI (1995) reported that "the turnover of a public tube well in Uttar Pradesh, India increased water and electricity use efficiencies. Average pumping time per irrigation was reduced from 42.4 to 39.3 hours per ha in Kharif season to 13.4 and 22.8 hours per ha in Kharif season during the first two years after turnover (1992-94)."

IMPACTS ON PRODUCTION

Project studies in Malaysia indicate that after the Irrigation Management Transfer farmers were able to achieve higher paddy production and cropping intensity (Soon, 1995).

With regard to impact on production after the Irrigation management transfer, reports from Turkey indicate farmers' production has increased by 10-25% (Cagil,1995)

A research conducted by Aziz (1995) on irrigation management turnover to private water users associations related to three canal commands in Egypt shows that one to three seasons after the turnover farmers estimate about 10% increase in cotton, 14% in maize and about 16.5% in sugarcane yields per hectare

The study on institutional management and performance changes in two irrigation districts in China indicates (Johnson 1995) that annual combined per ha production of wheat and maize has increased from 1125 kg in 1960 to 11905 kg in 1992 for Bayi ID. From 5250 kg in 1972 to 8500 kg in 1992 in Nanyao ID after the implementation of rural reforms.

IIMI (1995) reported that "in the Kano River irrigation Project in Northern Nigeria, taking over of management of distributary canals by farmers led to 12% increase in water volume reaching middle and tail ends of pilot canals, which resulted in an 80% increase in dry season cropped area."

IIMI (1995) reported that "in Uttar Pradesh, India, the average irrigated area in Rabi (winter) season was 103 ha during 1990-92 (before turnover) and 59.5 ha 1992-94 (after turnover). Cropping intensities were on average of 143% during two years before turnover and 162% afterwards."

Norman Uphoff (1986) reported that "in the Nong Wai scheme in Thailand, farmer organizations reportedly raised cropping intensity from 50 to 90 percent in two years' time."

IMPACTS ON AREA UNDER CULTIVATION AND CROPS

In Bangladesh, after the irrigation management transfer, the irrigated area has increased due to the adaptation of the tube well technology. The cropping average intensity has also increased due to the vagaries of irrigation development where irrigation water is available. (Sarkar 1995).

Turn over of the irrigation system in Indonesia to Water User's Associations resulted in better water management, increase in crop during **dry** season and adoption of high economic value crops. There was also significant improvement in cropping intensity from 194% to 282% and increase in crop yield during wet and dry season (Soenarno, 1995).

After turnover of state tube wells to farmers' cooperatives, Tushaar Shah et al (1995) have reported experiences from Indian Gujarat. The increase in area under irrigation in district Patalana, India was 30% but in district Anand the increase was 4 times. The report, however, also indicated that performance of the cooperative tube wells (turned over tube wells) is much less than the private tube wells. Generally the price of the private tube well water is higher but 20% more and irrigates 45% more area.

IMPACTS ON MAINTENANCE CONDITIONS OF CANALS

Reports on Irrigation Management Transfer in Indonesia show that farmers participation in undertaking O&M operations have increased (Soenarno, 1995).

The initial results of pilot test from Basut, Malaysia reports that after Irrigation Management Transfer the cooperation among farmers has increased and they have started adopting good water management and farming practices. Operation and maintenance efficiency has increased. (Soon, 1995).

Musa (1995) studied financial sustainability for operation, maintenance and management on Kano River Irrigation Project KRIP after irrigation management transfer with the collaboration of Federal Government of Nigeria and the International Irrigation Management Institute IIMI. He mentioned the impact of irrigation management transfer on Operation and Maintenance conditions of the distributary channels. There was a major improvement in maintenance of the irrigation infrastructure. The WUAs of Bangaza were able to clean 70% of the distributary channels and 60% of the field channels. Similarly the WUAs of Agolas and Karfi cleaned 80 percent and 100 percent respectively.

IMPACTS ON GOVERNMENT EXPENDITURE

IIMI (1995) reported that "in the Columbia Basin Project in the USA, there were 612 US Bureau of Reclamation (USBR) staff in 1969 -- the year of transfer. By 1985 only 83 USBR staff remained. Staff decline was even steeper in the Irrigation and Land Management Division, dropping from 297 in 1969 to only 22 in 1985."

IIMI (1995) reported that "in Coello and Saldana of Columbia, in 1975 an average of 62 ha was served per staff, whereas in 1993, 147 ha was served per staff."

IIMI (1995) reported that "turnover system in Southern Luzon, Philippines led to a decrease in staff from 24 in 1982 to only 6 in 1987, which led to a 60% reduction in annual operating expenses."

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EXPERIENCES FROM SINDH AND PUNJAB

SOCIAL MOBILIZATION PROCESS IN FARMER MANAGED IRRIGATED AGRICULTURE'- LESSONS LEARNT

Yameen Memon²

INTRODUCTION

The Government of Sindh has enacted a law to establish the Sindh Irrigation and Drainage Authority (SIDA). The four main objectives for the SIDA act are to: decentralize the management of the irrigation and drainage system; to establish more responsive, efficient and transparent management, to ensure equity of water distribution and effective drainage management, and to introduce participatory and financially self-supporting management. The package of institutional reforms proposed by the Government includes three components: transformation of PIDs to autonomous PIDAs; creation of AWBs; and encouraging formation of FOs at the distributary or minor level through a pilot project. The law empowers SIDA to promote the formation of Farmers Organizations around distributary and minor canals (Bandaragoda et al, 1997).



The Action Research Program of the 'Pilot Project for Farmer-Managed Irrigated Agriculture' in Sindh province of Pakistan has been undertaken by the International Irrigation Management Institute (IIMI). The program aims at enabling these Farmers' Organizations (FOs) to assume responsibilities for operation and maintenance (O&M), recover the cost through collection of water and drainage charges, and improve water management practices. Considering the complex social context a four-phase process is adopted, which includes: (1) support mobilization; (2) initial organization; (3) organization consolidation and (4) organization action.

During the first phase of the project the FOs were formed at the Bareji Distributary, Heran Distributary and Dloro Naro Minor in the districts, Mirpurkhas, Sanghar and Nawabshah, respectively by IIMI. The project expects to form farmer organizations on additional 10 distributaries at Jamrao Canal command area through National Drainage Program (NDP) Sindh.

Viability of an organization depends on its strength to make internal rules and to apply these rules effectively. Collective action enhances the effect of individual actions. However, considering that some persons' enhanced actions are likely to adversely affect the welfare of the others, the organization also has to collectively restrain individual action whenever necessary. Thus, the use of agreed rules becomes important, and an apt definition that is related to users groups is that "an institution is collective action in restraint, liberation and expansion of individual action" (Parsons 1984:28).

It has been expected that by the end of the 1990s, farmers will be able to mobilize all the resources required for operation and maintenance of the portions of irrigation systems under their management (IMPISA 1991). Upasena et. al 1996 clearly mention that the success of the

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participatory management policy requires the development of effective institutions among farmers for irrigation management.

After formation of FOs on pilot distributaries, second step is to register them with SIDA. The registration would legally empower FOs, enable them to mutually prepare and sign the irrigation transfer management document to take over the responsibility of irrigation system. This has not yet been possible, as the Government of Sindh has not approved the rules and regulations.

Lessons Learnt

The paper presents some of the lessons learned in the social mobilization process. These lessons are important for the other interested organizations, individuals and agencies to understand, and conceptualize the process of establishing farmers' organizations.

Government's Commitment

Most of the water users interviewed wished that political influence should be avoided in the formation of proposed FOs and AWBs. As the PIDA institutional reforms have a potential of bringing a significant change in the socio-economic status of the majority of the people in the area, there should be adequate safeguards against the possible obstacles that can be caused by a few who might get affected in the short term. Some argue that the sustainability of the proposed changes cannot be envisaged without a clear government commitment to devise such safeguards, including effective land reforms.

The irrigation and power department has provided essential support from the very beginning of the extended project and also support to form the farmers' organizations at the new distributaries/minors. The support from the agencies shall have to be continued, even after the irrigation management transfer is complete.

The water users were of the opinion that more than fifty percent of the members in the Area Water Boards and SIDA should be farmer representatives selected by the distributary level FOs. This strategy alone could avert any undue influence of the existing political and bureaucratic systems on the smooth functioning of the new organizations. The water users perceive that the establishment of the SIDA in this more transparent and more democratic manner will have a greater chance of improving the reliability and equitability of water distribution in the canal system. The reliable and equitable supply of the irrigation water, rather than more water, is the essential requirement for improving agriculture production.

There is a widespread belief among the water users that a more democratically constituted SIDA-AWB-FO system with adequate people's participation will improve the maintenance and operation of the canal system, which has deteriorated due to prolonged maintenance deficiencies. Consequently, the supply of water will be improved and shortages, particularly at the tail end of the system, can be overcome. Further, the performance of lower level irrigation staff will significantly improve when they are made accountable to the FOs.

Legal Empowerment to the FOs

One of the major activities in the organizational consolidation phase is to obtain the necessary support for the fledgling farmer organizations to be institutionalized within the broader socio-economic environment. This support has to be solicited from the government, which is the appropriate authority to provide an enabling environment for social organization as one of its prime responsibilities in institutional development. The Government's demonstrated willingness to accept

these new organizations on the basis of a legal framework, including a mechanism for their registration, would greatly facilitate the process of FOs gaining wide recognition as an institution, or as a useful formal group (Bandaragoda et al, 1997).

Transparency

The transparency in accounts is important in a farmers' organization to gain the trust among their members. The record of the funds generated by the FO in the shape of membership fee and donations from the members has been properly maintained by the FO Treasurer and was audited by the Chartered Accountant during the month of July 1999. The members also present their financial position in the general meeting. It has been declared that every member has a right to check the accounts any time. It is observed that the selection for the position of treasurers of watercourse association and farmers organization is based on honesty and most of the treasurers are selected on their previous record of honesty.

Politics are not involved

Almost all the water users who have been selected as office bearers and the management committee members are associated with one of the political parties of the country. It is worth mentioning that these members have never used their political platform to get these positions.

Bringing the Line Agencies Closer

Successful implementation and the sustenance of participatory irrigation management depend upon the roles effectively played by the farmers and various government agencies responsible to ensure inputs and extension services. The services of Non-Government Organizations (NGOs) are also essential to bridge the service gaps between the farmers and the various government agencies. (Elumalai, 1997).

The actual responsibility for organizing water users lay with the operating agencies and the water users themselves, while IIMI's field teams played a catalyst's role in social organization activities. To give effect to this "ownership" concept, the strategy was to introduce a mechanism to have the participation of a number of selected representatives from field level agency staff (Irrigation, On-Farm Water Management, Agriculture Extension, Agriculture Bank, Agriculture Development Authority, etc.). This arrangement was called the Field Implementation Coordination Committee (FICC), which was meant to help the catalyst, as well as the participating agency field staff and water users to collaborate with one another closely on a regular basis

It was observed that soon after the introduction of FICC, all the related government agencies and farmer representatives, formed a convenient platform to discuss farmers' common problems related to irrigation services and agricultural production. The most important aspect of the FICC's success was that the discussions on problems were soon followed by some actions to bring the relevant services to the field. With the support of various FICC members, the identified activities were carried out at the farm level for the socio-economic benefit of the farmers.

Involvement of Social Volunteers Organizers

The concept of involving community-based local volunteers in the social organisation work was introduced with the purpose to use them as a bridge between the small field team and the community. Selecting some suitable persons from the local community as volunteers was an important strategy in the social organization process. The volunteers identified were named as "Social Organisation Volunteers" (SOVs).

Members of the community, who were adequately informed about the community and its needs, and prepared to assist the action research process, were selected. The methodology of using local volunteers had the following advantages:

- Interventions could be routed through local people, causing little room for mistrust;
- The SOVs could reach the community in the pilot distributary command area fairly quickly, partially meeting the projects time constraint; and
- As SOVs were deployed on a voluntary basis, the method was cost-effective and could easily be applied on a wider scale.

Capacity Building of the Water Users

The experiences gained through the pilot project show that water users are instrumental in mobilizing local resources (human and financial) as they are contributing in cash, kind/ labor to the cost of developing operating and maintaining the tertiary unit. Farmers can contribute to system's improvement through financial and human resources and have an impressive capacity to articulate their problems.

An organisation can eventually grow into an institution when it establishes persistent patterns of norms and behaviour commonly accepted as valuable and useful to the membership. By then, it will have established accepted sets of rules and procedures for various functions of collective action. Such a system of rules cannot just happen, or spring up on administrative fiat, but it has to evolve over time. Only at this mature stage can a water users' organisation exercise successful collective action to both liberate and restraint individual water user's actions for the benefit of the group as a whole. The acceptability of the organisation by a substantial majority of its membership is an essential characteristic that determines its effectiveness in undertaking continuing tasks of water resources management, such as canal maintenance, water distribution, fee collection, conflict resolution and imposition of sanctions.

Willingness and Ability

The experience of mobilizing users for participatory water management gained by the action research program that the users are willing and capable to assume the new responsibility, but that the Government is not yet fully prepared for this change, as the bylaws have not yet been finalized. This sometimes makes it difficult even in the context of pilot projects to achieve significant progress in participatory water management.

Conclusion

The pilot projects have proved that farmer organizations (FOs) are socially viable and the members are ready to take the responsibilities of operation and maintenance of distributaries in addition to assessing and collecting abiyana (water charges). However the financial viability and sustainability of these FOs need to be tested.

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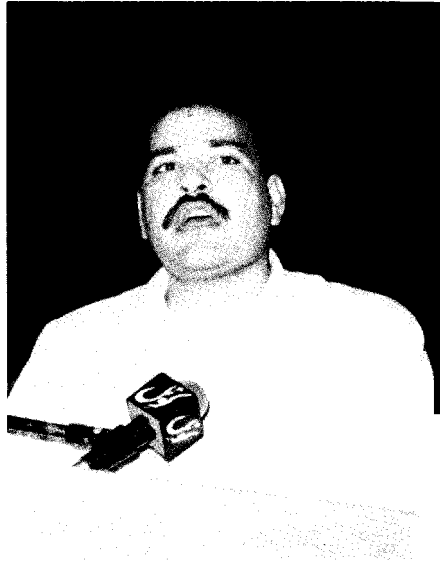
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FORMATION PROCESS OF FOS IN PUNJAB EXPERIENCE FROM HAKRA 4-R DISTRIBUTARY

Abdul Hamid³

The presentation has five parts:

1. Objectives;
2. Selection criterion and characteristic of pilot site;
3. Methodology;
4. Constraints in the social organization;
5. Lesson learned for larger replication.



OBJECTIVES:

It was a five years project funded by the Netherlands's Government. The main objectives of the project are:

1. To Organize the farmers at secondary level of irrigation system as WUF;
2. To develop interface of WUFs with operating agencies;
3. To seek possibilities of coordinated irrigation and agricultural service for WUFs;
4. To test social, technical, and financial viability of organized water users for distributary's O&M; and
5. Use the methodology for replication.

CRITERIA FOR SITE SELECTION AND CHARACTERISTIC OF PILOT SITES

Background information of pilot site

The farmers in Punjab, especially in the southern part, are faced with constraints of low agricultural productivity due to unfit ground water. Besides, Bahawalnagar district is almost situated at the tail of the Punjab's canal irrigation system. The only source of irrigation is the canal system. The performance of which has gone down over the years due to several economic and socio-political factors. In the given situation, neither the government nor the farmers alone can solve these problems. It was one of our long felt needs that the farmers should be organized to improve irrigated agriculture, a major source of our livelihood.

There are five main criteria of selection:

1. Hakra 4-R distributary comes under Fordwah Eastern Sadiqa South (FESS). It is a World Bank project on lining and drainage of canals. In addition, under this project, OFWM is doing the same organization work at Sirajwah distributary, so we coordinated with them for the organization of farmers.
2. The farmers of the Distributary have diverse backgrounds such as local, Molijir and settlers etc.
3. With little intervention by the agency, for development work there was an incentive for the farmers to be organized.
4. It is a medium to large, 57-k.m long distributary with 124 irrigation outlets. The design discharge is 193 cusec, which was sanctioned in the 1966.

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- 5 The gross command area is 48250 acres and culturable command area is about 43400 acres.
- 6 Presence of hydraulic structures, which would help the water users to monitor the discharge in terms of space and time

These drop structures represent the five subsystems,

- The first sub-system falls from RD-0 to RD-46, with 25 irrigation outlets (Ghulab Ali zone);
- The Second sub-system falls from RD-46 to RD-72 with 24 irrigation outlets (Haroonabad Zone);
- The third subsystem falls from RD-72 to RD-112 (tail) with 27 irrigation outlets (Tail Zone);
- The fourth subsystem is 1RA/minor with 15 irrigation outlets (Khatan Zone);
- The fifth subsystem is 1R/minor with 33 irrigation outlets (1R Zone).

METHODOLOGY

Base line survey

The base line survey was conducted in thirteen sample watercourses, in July and August 1995. It covered socio economic and technical information of the area. The purpose of the base line survey was to use this information to interact with the water users for establishing the WUOs.

Five Dialogic Steps in social organization

Social Mobilization process is based on five dialogic steps. Each step is the base of next step. If one is weak then next cannot be obtained. It is iterative. Each step leads to the next step.

Familiarization Meetings

The initial interactions with the people in the project area helped the field team to accomplish the following combination activities:

- Introduce IIMI and its programs to the people;
- Importance of the program;
- Explain the project objectives;
- Preliminary calibration exercise;
- Collect or construct warabandi schedule; and
- Identification of Social Organization Volunteers (SOVs)

The process was launched from September 1995 to May 1996. The purpose of the identification was to help the field team comprising of five members and to involve the community in the organization work. The internally generated demand for social organization has a greater chance of making these organizations productive and sustainable. It was difficult for a small field team to interact with 4500 water users, so 158 SOVs were identified. The selection of the SOVs was based on the following criteria:

- Referred by the majority;
- Knowledgeable;
- Honest;
- Educated;
- Have experience in speaking at public place;
- Already taking part in the collective action.

The SOVs were trained for one day. In the training their role and interaction with the community was discussed.

Awareness building Meeting

After the identification process, Series of the meetings were arranged. Here the SOVs were only the target. The purpose of the meetings was to further clear their mind about the program and IIMI, so as they can interact with the community with great zeal and zest. The role of the SOVs was also discussed in the meeting. The participation ratio in the meeting remained 70%. The process was completed within the period of four months.

Consultation Meeting

The meeting was held at the larger scale, at village level. The purpose of the meeting was to discuss the tentative plan to establish water user organization, membership of WUAs, organizational structure and procedure for identifying organizational leaders. The meeting also worked as a follow up to the earlier awareness building meetings. The participation rate in the meeting was 39 %. This step was completed within the period of four months.

Selection Meeting

A series of the meetings were conducted for discussing the process and finally taking the decisions for selecting the organizational leaders at watercourse level. There was considerable gap, 6-8 days, between the planning and organizing of the meeting. The idea was to give maximum publicity and provide equal opportunity for all eligible water users to come forward for leadership. The average participation rate was 77 % in the meeting. The members framed the informal committee that comprised on 1 to 7 persons, with consensus. They sent one person, who is the chairman of the committee, for the general body of the water user organization. The number of general body of an organization (subsystem) depends upon the number of watercourses.

The general body of each subsystem selected their own office-bearers, president, vice-president, general secretary, joint secretary, secretary information, and treasure. Each subsystem nominated five persons for federation members. This step took six months to complete.

Federation Meeting

The general body of 25 federation members in their two meetings selected five office-bearers on 5 March 1997. In this way, the organization process was completed.

The approach for social organization

The approach was based on direct interaction with the community. Information was not one way, it was exchanged between SOs and community, SO and SOVs, SOVs and community and among community members.

Three tier organizational structure (WUAs, WUOs & WUF)

First the farmers were organized at watercourse level into 124 WUAs, then they were organized at subsystem level covering five subsystems, and later they were federated at distributary level. There were two main reasons of three tiered structures at the Hakra 4-R distributary. Firstly, to involve maximum water users in the irrigation management decision-making for the sustainability of the program. The office-bearers are comparatively more active than the non-office-bearers. So in the three tiered structures, almost 600 hundred people come ahead. If these office-bearers are active then there are more chances of its sustainability.

Secondly, to increase the interaction among the water users, as the distributary is 57 km long and it is very difficult for the headers and tail enders to interact with each other. Now they can interact easily through three tier organizational structure.

Constraints during the process

1. Propaganda by the people benefiting from status quo
2. Disappointment among the community
3. Corruption and farmers Anarchy
4. Low collaboration from relevant agency
5. Lack of legislation
6. Cultural Factors

Propaganda by people benefiting from status quo

Those people who were taking illegal benefits from the system started propagating against the activity. They were usually free riders who do not take part in collective action but get benefit from it. They boosted the doubts and misinterpreted things. They propagated that meter would be installed on the outlets, privatization of the system and raise in water charges etc.

Disappointment among the community

This constraint is based on the past collective effort/actions and non-implementation of the programs. Some people related it with cooperatives and Usher/Zakat where nominations are made from the top level and no value is given to public opinion. Therefore, some people were disinterested at the initial stage

Corruption and farmers Anarchy

People were not sure of the implementation of the program due to wide scale prevalence of corruption and political system. According to them the only solution was blood revolution.

Low collaboration from relevant agencies

Low collaboration was only due to insecurity among the agency's staff. They thought that there was a chance of losing their jobs if the program is implemented. That's why they did not participate in the farmers meetings.

Lack of legislation

There was not any clear policy about the program due to lack of legislation. The people felt it was useless without legal protection. If they organize themselves without recognition, there will be no incentive for the organization, so they showed disinterest initially.

Cultural Factors

It is in our tradition to value the elder's role, to be lethargic, to ignore tenants and to build "Chudraht" or izzat (class status). The reason for low participation rate (10% to 40%) in the meetings was that mostly people thought they were supposed to obey the elders' decisions and also what one committed on others behalf, would be acceptable to others. People wanted to show their "Chudrat" status at all costs during site selection and selection of office-bearers. It happened only at few watercourses.

LESSON LEARNT FOR LARGER REPLICATION

Effective collaboration is the most important determinant of success

Organize the workshop at initial stages and define the role of relevant operating agency. Also clear people's doubts by making them aware that joint management improves the system without damaging their interests.

Advertisement through mass media is beneficial for awareness creation

As it is a novel experience, there is need to publicize it through mass media. Tell people about the importance of the program, so they participate in the process with great zeal and zest.

Manageable group size per SO

The group size should be manageable, so the SO can interact with the community regularly to avoid the rumors and keep it well aware about the existing situation.

Legal protection

For the effectiveness of an organization, legal protection is very important. If an organization makes a decision, there should be legal protection for its implementation.

Organization process through democratic way

The best way is the democratic way. It is nice if the process is completed with consensus, or through the election. The democratic way is the only way for the sustainability of the organization.

Make the process free from politics and "brotherhood"(family/ethnic connections)

We should make the process free from the politics contacts. Agriculture is the backbone of our economy, so we should at least avoid politics and brotherhood.

PARTICIPATORY IRRIGATION MANAGEMENT: NEED OF THE HOUR

Zafar Iqbal Mirza⁴



BACKGROUND

Agriculture is the major sector of Pakistan's economy. The fertile land resources of the Indus Basin System coupled with the water of the River Indus and its tributaries provided ideal conditions for the development of irrigated agriculture in the country. Pakistan has an enormous network of irrigation canals, which link with the Indus River system to irrigate about 42 million acres of land.

The system comprises of 3 major storage reservoirs, 15 barrages and 15 inter-river (link) canals. The system serves 45 canal commands and delivers water to about 90,000 villages through a canal system of about 30,000 miles in total length. There are nearly 4000 distributaries providing water to fields through a network of about one hundred thousand watercourses. Each watercourse is designed to carry 1 to 3 cusecs of water to irrigate about 300 to 400 acres of land. It is the World's largest contiguous irrigation system.

The land and water resources of the Indus Basin have the potential of increasing crop yields substantially. At present, per acre yields of various crops are far less than the international standards despite a very favorable combination of climate, temperature, soil and water resources. The results of many studies indicate a considerable amount of water wastage from the irrigation system. According to one estimate, against the about 182 Million-Acre Feet (MAF) of water available in the rivers and from the groundwater resource, hardly 50 MAF is available for crop consumptive use requirements. The low efficiency of the irrigation system not only causes water shortage especially at tail reaches, but also gives rise to irrigation-induced environmental problems such as water-logging and salinity, whereby millions of acres of productive lands become agriculturally unproductive.

RECENT DEVELOPMENTS

In recent years however, there has been a growing awareness among Palustan policy makers and academics regarding the necessity for organizing farmers at the level of minors and distributaries, as well as watercourses, so that farmers will have some control over the distribution of water to each watercourse and farm plot. Fanner's control over water is expected to improve tertiary level water management by way of increasing the compatibility between water deliveries and crop water requirements throughout the cropping season, both in terms of quantity, as well as timeliness.

Keeping in view the necessity for sustainable irrigated agriculture, there is now a felt need to try out some pilot projects on participatory irrigation management in selected canal command areas in all four provinces of Palustan. The main aim to test the reform on pilot scale is to check its validity in the context of Pakistan's large canal system before its replication on wider scale.

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MAIN PROBLEMS OF ESISIINC IRRIGATION SYSTEM

- irrigation system is not performing well due to poor operation and maintenance
- frequent breaches due to weak banks
- inequitable water distribution
- unreliable water supply
- increased cases of water theft
- water disputes
- delayed justice
- financial mismanagement
- political interference
- more O&M expenditure as compared to income
- poor accountability
- lack of users participation in decision making

OBJECTIVES OF PIM

The main objective of the institutional reforms in the irrigation sector of Pakistan is to shift the responsibility and authority for the management of irrigation system at the secondary and tertiary level from the government to non-government entities i.e. Farmers Organizations (FOs). Also to involve users in decision making at higher level of the system.

REASONS FOR INSTITUTIONAL REFORMS

- poor performance of government agency managed irrigation system
- the failure of governments to finance, or recover from farmers, the cost of irrigation management
- to reduce burden from government and reallocate revenues to improve O&M
- enhanced trust in the capacity of water users to participate in management of the irrigation system.

IRRIGATION MANAGEMENT TRANSFER: EXPERIENCE FROM OTHER COUNTRIES

Irrigation management transfer has been practiced in many countries across the world such as USA, Mexico, Turkey, Indonesia, India, Sri Lanka, Nepal and Colombia etc. In some of these and other countries, reforms have successfully accomplished while in others; IMT has failed completely or partially.

RESULTS FROM SUCCESSFUL IMT

- better and more equitable water distribution
- better reliability in water supplies
- improved operation and maintenance of the system
- self financing

REASONS FOR PARTIAL SUCCESS OR COMPLETE FAILURE

- half-hearted approach (lack of will)
- lack of enabling laws
- lack of suitable staff for social mobilization
- poor coordination among different actors
- more focus on the engineering aspects than on formation and training of WUAs.

RATIONALE FOR PROMOTION OF USER'S PARTICIPATION

The gradual deterioration of irrigation systems throughout the world has exposed serious institutional deficiencies, and resulting government failure to deliver the services in most water resources systems. In most developing countries financial crisis and inability of government to deliver services has become visible. This includes inadequate motivation and poor accountability process of agency staff, high level political interference and rent seeking and inadequate concern for needs of users. On the other hand, without reliable and equitable supply of water, users are not ready to share the ever-increasing costs of Operation and Maintenance (O&M). The options left behind are either:

- 1) leave the system as such (agency managed) and bear the cost (declining or stagnant agricultural productivity, disastrous in the long run), or
- 2) government improves and manages the system efficiently, or
- 3) involve the beneficiaries (farmers) to share some of the responsibilities of O&M for sustained and improved agricultural production.

The first option is in practice in the country and continuation of that could lead to poverty and threat to food security in the country. The second option doesn't seem to be cost effective and also it has not worked in the past. The only option left is the involvement of water users to share some of the responsibilities of operation and maintenance for sustainable and environmentally sound irrigated agriculture. The experience from other countries reveals that it worked well in many countries and that seems the only way to improve the system efficiently and cost-effectively.

WHETHER PAKISTANI FARMERS CAN DO THAT?

The main question posed by the policy makers, experts and the concerned government agencies staff is whether our farmers can do that. Similarly some segments of farmers also worried about their capacity to handle the O&M activities. However, past experience of users participation in Warabandi, Watercourse improvement under On-farm Water Management program and providing help to the Irrigation agency staff in annual desilting of minors and distributaries shows farmers ability to take-over the responsibilities of irrigation system management.

Last three-four year experience of Farmers' Organizations in Pakistan also show that farmers can get organized, they are willing to take-over responsibilities at secondary level of the system and they can perform well in the operation and maintenance of the system in a cost-effective way. Nevertheless, there are few pre-requisites for an effective, socially, technically and financially viable Farmers Organization.

KEY FOR SUCCESSFUL IMT

- clearly defined water rights
- high level support from the community/water users
- political will
- government support
- enabling rules and effective implementation
- well defined roles and responsibilities of all stakeholders
- transparency in organizational and financial matters
- effective accountability mechanism
- a capable, efficient management and staff, and
- effective support services after turn-over

NATIONAL DRAINAGE PROGRAM AND RESTRUCTURING OF IRRIGATION DEPARTMENT INTO BIDA

Waheed-uz-Zaman⁵

INTRODUCTION

This article is about the National Drainage Program (NDP) and restructuring of Irrigation Department into Balochistan Irrigation and Drainage Authority (BIDA). It, first, describes the strategy of the NDP, throws light on its objectives and discusses how these objectives can be achieved. It then, mentions the major components of the NDP, highlights, the main causes of the implementation delay of NDP, establishes linkage between NDP and BIDA, and provides implementation structure of NDP in hierarchical jurisdiction. It, then, gives the detail of the role of different entities (BIDA, AWB and FOs,) under NDP, enlists the condition for sponsoring projects for FOs, explains project approval cycle, illustrates guidelines for screening projects, depicts FO's share in these projects, represents maximum upper limit of the expenditures of the projects for these different entities and, finally, it summarizes the benefits of farmer's participation to the government and to the farmers. This article heavily draws from the (World's Banks' Staff Appraisal Report NDP's PC-1).



NDP - STRATEGY

- It takes a comprehensive approach to River Basin Management (RBM);
- Seeks to enhance the knowledge base to adopt sound technical solutions to drainage; and
- seeks to reduce fiscal dependency especially for on-fami drainage.

The strategy consists of the following inter-linked parts:

- (i) restructuring the Provincial Irrigation Departments (PIDAs) to form Public Utilities (PUs) around canal commands;
- (ii) actively promoting formation and development of Farmer Organizations (FOs);
- (iii) strengthening federal agencies, notably the Water and Power Development Authority's (WAPDA's) Water Wing, to better implement their federal responsibilities; and
- (iv) formalizing water markets and individual water property rights.

OBJECTIVES OF NDP

The goal of the project is :

- to implement the NDP in 25-year
- to minimize saline drainable surplus

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- to facilitate the eventual evacuation of all saline drainable surplus from the Indus Basin to the Arabian Sea, and
- to restore environmentally-sound irrigated agriculture in Pakistan.

How Would Be These Achieved?

The objectives of the project are to improve the efficiency of the irrigation and drainage systems in Pakistan, and ensure its sustainability, through:

- establishing an appropriate policy environment and institutional framework,
- strengthening capacity of sector institutions,
- improving sector policies and planning
- strengthening the technical foundations of and knowledge base on irrigation and drainage,
- improving the irrigation and drainage infrastructure network,
- institutional reforms to decentralize the irrigation and drainage system,
- capacity building of key irrigation and drainage institutions (WAPDA, PIDAs, AWBs and FOs),
- policies to improve the efficiency of water allocation,
- modernization of canal system management,
- improvement of irrigation systems and watercourses (e.g. to reduce seepage),
- ensuring proper O&M of canals and drains so that they can function as designed.

MAJOR COMPONENTS OF NDP

NDP consists of the following three complementary components, with estimated total cost of US \$ 785 million:

Sector Planning and research component	US \$	25.7 million
Institutional reforms component	US \$	57.7 million
Investment component	US \$	653.1 million

Implementation Delays of NDP

The main risk to the project during its implementation phase is slow implementation due to the following factors:

- poor coordination,
- weak supervision,
- delays in preparation of Investment Projects,
- delay in approval of contracts and investment projects, and
- failure of PAs to meet eligibility criteria on schedule.

Linkage of NDP with BIDA

The Borrower (COP) and IDA anticipate that if NDP is successfully implemented:

- it would be followed by the proposed National Irrigation Program (NIP) which is under preparation,
- and by a series of NDP's and other associated investments in the water sector
- the project includes funds to prepare a pipeline of major drainage projects to be implemented from the second half of this project,
- and for the preparation of NDP II.

On the other hand;

If the pace of reforms is slow due to lack of government commitment, implementation constraints, or resistance/lack of commitment by WAPDA, PIDAs of AWBs for real change, the Borrower and IDA have agreed and understand that:

- the incremental financing commitments for irrigation and drainage investments under NDP would be scaled back

or

- canceled altogether after the MTR or 2-3 years, and
- this factor would be taken into account in determining IDA's financing for additional investments in the water sector notably NIP and the proposed Fourth On-Farm Water Management IV Project.

NDP IMPLEMENTATIONAL STRUCTURE AND JURISDICTION

Components of Implementation

- Institutional reforms for WAPDA's Water Wing and PIDs of
- Redefining roles and functions;
- Decentralizing roles and responsibilities;
- Streamlining;
- Transferring management responsibility for those functions which should be managed by other entities which will succeed PIDs; and capacity building for WAPDA and the new public and private institutions.

ROLE OF DIFFERENT INSTITUTIONS AND QUALIFYING CAPACITY UNDER NDP .

BIDA's Responsibilities:

- Subject to the provisions of the Indus Water Treaty, 1960 and the Water Apportionment Accord, 1991 to receive irrigation supplies at the barrages falling within the Province and/or from the inter-provincial/link canals and deliver the same in agreed quantities to the various AWBs in the Province at the relevant canal headworks.
- Shall receive drainage effluent at designated points on canal command boundaries and convey the same to the inter-provincial outfall drains.
- To exercise all the powers under the Balochistan Canal and Drainage Ordinance, 1980 and Balochistan Groundwater Rights Administration Ordinance, 1978.
- To fix the rate in consultation with the Provincial Government at which it will supply irrigation water at its disposal to its various constituent Area Water Boards other entities as provided under BIDA Act 1997 as also the Drainage Cess payable by the AWBs or any other entity for the conveyance/disposal of the effluent through the relevant drains.
- The Authority may levy appropriate surcharge for late payments and recover arrears from defaulters under the Balochistan Land Revenue Act 1967.

Provided that in case the Government declares a remission, water, rescheduling or suspension of payment of any of the dues of the Authority, the same shall be the account of the Government who shall simultaneously notify how the Authority shall be compensated for the loss thereby caused to the Authority and/or other entity established under BIDA Act 1997

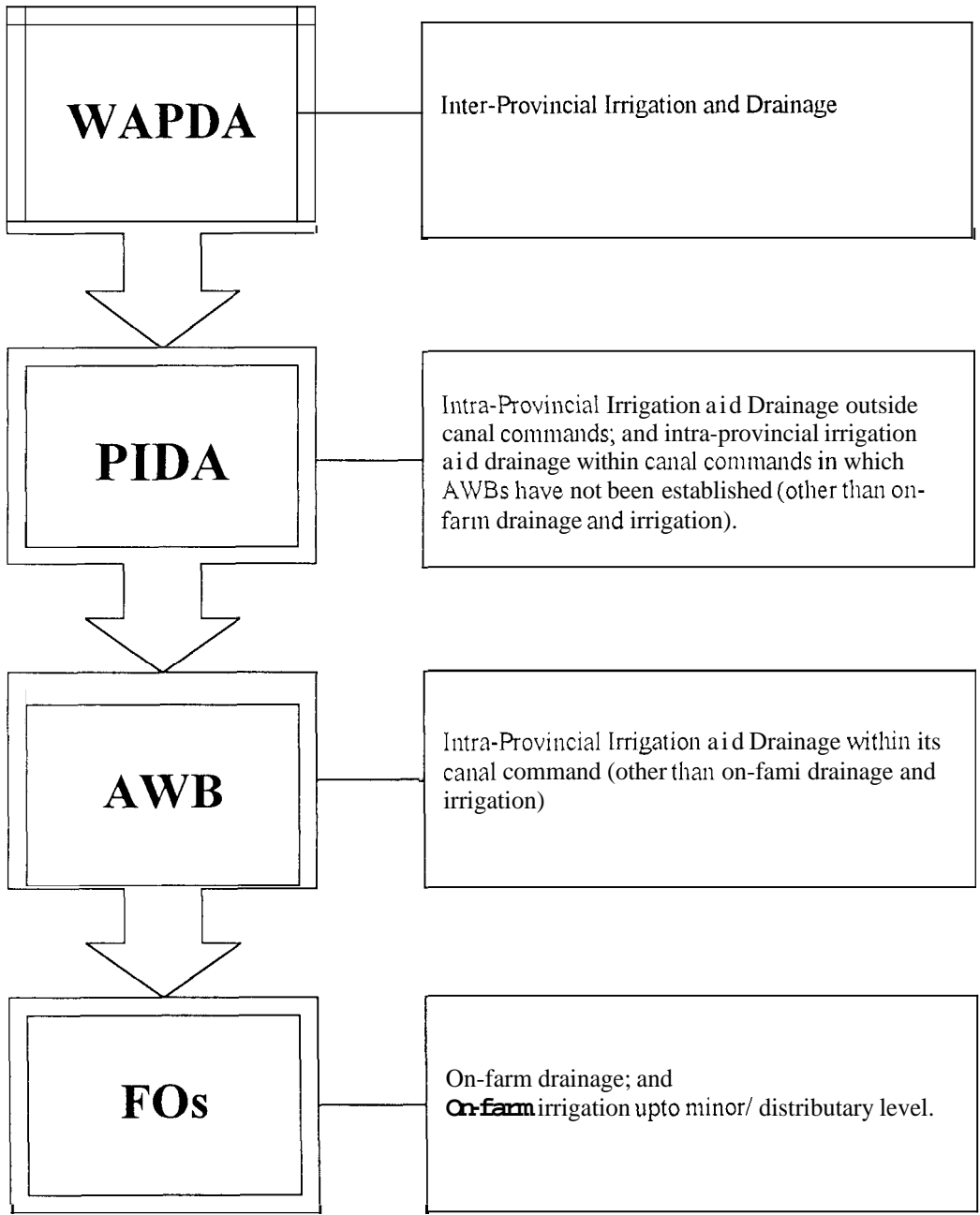
- To formulate and implement policies in the water resources sector with a view to continuously improve and achieve effective, economical and efficient utilization,

preservation and improvement of such water resources by the Water Users of Province on a financially and environmentally sustainable basis.

- To formulate and implement policy guidelines/procedures for the proper and efficient exercise of powers available under BIDA Act 1997 by the various entities and their directors, employees and to prescribe training requirements and programs which may be conducted by the various entities under this BIDA Act 1997 in ths behalf.
- To conduct any inquiries and hear any complaints and adjudicate on any disputes and/or any individual in accordance with the principles of natural justice relevant there-to and to implement such decisions as per the letter and spirit thereof.
- To prescribe and adhere to the procedures for the filing of documentation regarding water allocation in the Province and all concessions, licenses and leases granted by any entity under BIDA Act 1997 and to ensure availability thereof to the general public for inspection and taking copies thereof.
- To establish criteria and procedures for granting modifying, reassigning, renewing suspending or revoking any concessions, licenses, subleases granted by the Authority to any other entity or person and/or for the management of the infrastructure in the event of suspension or revocation of a concessions, licenses or subleases granted by the Authority to any other entity or person.
- To operate and maintain the irrigation, drainage, storage reservoirs and flood control infrastructure in the Province including hill torrent control and development works for irrigation of adjoining lands including watershed management practices in catchment areas.
- To plan, design, construct and improve the irrigation drainage, storage reservoirs and flood control system with a view to ensure optimal utilization of the water resources of the Province on an equitable and efficient basis.
- To undertake anti erosion operations including conservation of forests and reforestation and with a view to achieve this purpose, to restrict or prohibit by general or special order the clearing or breaking up of land in the catchment areas of any rivers, hill torrents and/or other streams.
- To undertake any work, incur any expenditure, procure machinery, plant and stores required for use by the Authority and to negotiate, execute and adopt ratify all such contracts as may be considered necessary or expedient with the approval of the Government.
- To formulate, adopt and implement policies aimed at promoting formation, growth and development of Area Water Boards/Farmer Organizations, and compilation/faithful monitoring of the results thereof as per the requirements prescribed under BIDA Act 1997 ant to ensure orderly and systematic induction thereof into the operations of the Authority.

Area Water Board's Responsibilities:

- To formulate and implement policies with a view to achieve and continuously improve effective, economical and efficient utilization of irrigation water at its disposal and to ensure that within a period not exceeding 07 to 10 years from the date of its constitution, it becomes fully operative as a self-supporting and financially self-sustaining entity.
- To plan, design, construct, operate and maintain the irrigation, drainage and flood control infrastructure located within its territorial jurisdiction.
- To adopt and implement policies aimed at promoting formation, growth and development of Farmer Organizations including pilot projects for Farmer Organizations and faithful monitoring of the results thereof.
- To perform any other functions assigned by the Authority (**BIDA Act, 1997**).



Farmers Organizations' Responsibilities:

- To operate, manage and improve the irrigation and drainage infrastructure comprising of minors, distributaries and drains together with any structures thereon located within the Area relevant to the Farmer Organization concerned.
- To obtain irrigation water from the Authority or Area Water Board concerned at the head of the minor or the distributary and to supply the same to their members and other water users, if any.
- To receive the drainage effluent from their water users and to convey the same through field/collector drains to the designated nodal points to the drainage system.
- To collect the agreed water charges, other dues, if any from its water users and to pay the agreed consideration for supply of irrigation water and conveyance and/or disposal of drainage effluent to the Authority or Area Water Board concerned.
- To engage, hire or employ any consultants, advisors and employees as may be deemed necessary or be otherwise reasonably required for the due and effective performance of various powers and functions on such terms and conditions relevant to the conclusion or premature determination of such engagement etc. of any consultants, advisors, employees, as the case may be (BIDA Act, 1997).

FOs Would Ideally Sponsor Investment Projects That Are:

- for the purpose of improving FOs' ability to obtain or receive water from distributaries or minors for delivery to Water Users Associations (WUAs) at minors or watercourses;
- for the purpose of improving the FOs' ability to obtain or receive drainage effluent from WUAs or Drainage Beneficiary Groups (DGGs) at outfalls for delivery to drains or outfalls maintained and operated by AWBs;
- part of the FOs' paid responsibility on behalf of the AWBs for flood control or flood damage rehabilitation;
- Contracted under a "Construction, Partnership and Hand over Agreement" with client on terms satisfactory to IDA; and
- For replacement of saline SCARP tubewells with tile drains;
- For replacement of GGW SCARP tubewells with community tubewells;
- For improvements of watercourses in saline groundwater areas; and
- Estimated to cost no less than \$0.1 million equivalent.

The Investment Project Approval Cycle

- A feasibility report would be prepared for each Investment Project
- Endorsed by NDP Engineering Design and Supervision Consultants
- Meets selection criteria
- Appraisal by an independent Panel of Experts
- Approved by the NDP Coordination Cell or Provincial NDP Cell
- Reviewed by IDA retroactively

GUIDELINES FOR SCREENING INVESTMENT PROJECTS

- (a) beneficiary participation and consultation plan in case of tertiary drainage or private tile drainage Investment Projects;
- (b) Environmental Assessment with mitigation measures incorporated into Investment Project design;
- (c) Resettlement Action Plan with social rehabilitation dimensions;
- (d) Adequate provision and budget for post-completion operations and maintenance;

- (e) Community ownership and cost-sharing arrangements;
- (f) Basin strategy;
- (g) Hand-over arrangements, where applicable; and
- (h) Awareness campaign directed at beneficiaries.

FINANCIAL CONTRIBUTION OF FOS IN THE PROJECTS

Type of Investment Project	
Off-fami Surface Drains	0 %
SGW Tubewells	0 %
Watercourses	40 % of cost of civil works materials (Plus all the skilled and unskilled labor)
Tile Drains	10% (Plus land required)
On-fami Surface Drains	10% (Plus skilled and unskilled labor, and any land required)
FGW Tubewells - Transfer of existing tubewells - Transfer of existing tubewells with modification - Installation of new tubewells (with centrifugal pumps operated by diesel engine)	Rs. 10,000 Balance cost of civil works if any after considering grant of Rs. 20,000 from Provinces. Balance cost of civil works if any, after considering grant of Rs. 30,000 from Provinces.
Irrigation Systems Rehabilitation - If carried out by an FO - If carried out by a PIDA or an AWB	10% of cost of civil works 20% of cost of civil works
Institutional Program	0 %

Upper Monetary Limit of Expenditure

WAPDA	\$ 5 Million
PIDAs	\$ 3 Million
AWBs	\$ 1 Million
FOs	\$ 0.1 Million

Benefits to the Government

- Transparent financial management.
- Reduction in Government expenditure
- Reduction in Government staff
- Better assessment and collection of Abiana
- Reduced workload on the Irrigation staff
- Increase in productivity.

Benefits to the Farmers

- Social Control
- General awareness
- Better use of resources
- Reach to the agricultural/irrigation science and technology
- Equitable distribution of water
- Operation and Maintenance of Canal/Distributaries at low cost
- Instant decisions.

REFERENCES

- 1) Balochistan Irrigation and Drainage Authority Act, 1997
- 2) Islamic Republic of Pakistan and Water and Power Development Authority WAPDA (1997) National Drainage Program NDP PC-1 Program
- 3) World Bank Staff appraisal report National Drainage Program

FARMER PRESENTATIONS : EXPERIENCES OF FOs FROM SINDH AND PUNJAB

ACHIEVEMENTS OF FOs IN SINDH

Faiz Muhammad Mangrio⁶ and Mustafa Talpur⁷



INTRODUCTION

The process of mobilization of farmers to managing the part of irrigation and drainage system was initiated in 1995 by International Irrigation Management Institute under Left Bank Out Fall Drain (LBOD) project on three pilot distributaries. The farmers participation in the management of system was a novel idea for both farmers and agency. There was cynicism regarding the role of farmers. Some circles felt that in peculiar Socio-cultural context of rural Sindh, farmers couldn't be organized. Bringing change in the attitude and behavior of rural people was not an easy job but was not also impossible.

The social mobilization process, which was well planned and systematic, produced results in one year when farmers of all three distributaries were organized at two tier organizational system. Firstly they were gathered at watercourse level and formed watercourse association in which all the farmers having water entitlement on that particular watercourse become members. At the second step these watercourse associations were federated at distributary level at three pilot distributaries into farmers' organizations. In all 80 watercourse associations and three farmers' organizations were formed on three distributaries in Sindh.

The second phase of farmers' organizations was to manage the irrigation system but management was not transferred to them due to some legal issues. So their achievement can be judged on organizational consolidation activities, resource mobilization for the organization as well as maintenance of the distributaries, linkage development and human capital development.

Organizational Domain

Farmers' Organization (FO) as mentioned above is a very novel idea. Though On-farm Water Management (OFWM) organized some farmers at watercourse level for the single purpose of renovation of watercourses, the farmers ushered in the new era of their activities and are a part of single entity called farmers' organizations. These achieved the status of a single body among farmers and were recognized as representative institutes of farmers.

Membership and other formal activities

In the organizational sphere all three FOs established their offices, opened bank accounts, audited their account from chartered accountants and developed links with several governmental and non governmental organizations. The essence and strength of the organization is its membership. More than 90 percent farmers' at all three distributaries have registered themselves as members. The following table shows the membership list among farmers.

⁶ Secretary, Farmer Organization (FO), Bareji Distributary, Mirpurkhas Sindh.
⁷ Social Scientist, IIMI Field Station, Mirpurkhas, Sindh.

Table 1. Membership of FOs in Sindh.

S#	Distributary/Minor	Total Farmers	Members	Percentage
1	Bareji Distributary, Mirpurkhas	354	330	93
2	Heran Distributary, Sanghar	718	600	84
3	Dhoro Naro Minor, Nawabshah	464	399	86

This is significant achievement of FOs to have a large number of farmers as members and to mobilize them for organizational activities and maintenance of distributaries.

Transparency in Account Books

A well managed farmers institution is supposed to maintain the financial accounts in transparent manner. Because the money collected have a share of all people and they have a right to know how it is used. All the FOs have been very transparent, though are not well educated to maintain the financial record. All the necessary books of accounts such as cash book, receipt book, voucher file, bank account are maintained by them to a satisfactory level. At the end of financial year 1998-99, all three FOs accounts were audited by the chartered accountant.

Sharing Responsibilities

The performance of the organizations proved that farmers are well aware about their problems. They actively participate in the discussions, debates and issues. Now the trend of taking responsibilities is also taking roots. At the initial stage farmers were reluctant to take some responsibilities but with the passage of time their confidence in organization and themselves has developed.

There is division of responsibilities also, every office bearer is well aware of his duties and performing them in a well-planned manner. The Secretary is custodian of entire record and treasurer collects the fees and maintains the financial record. The Chairman distributes the work, monitors it and up to certain level is involved in conflict resolution. Thus the habit of taking responsibilities of common cause has emerged and is being consolidated.

To perform various jobs, FOs have formed different committees. Every one knows their responsibilities. The committees are formed for irrigation, drainage, agriculture etc.

RESOURCE MOBILIZATION FOR THE MAINTENANCE OF DISTRIBUTARIES

The factor affecting the viability and workability of farmers' organization is the mobilization of resources for various purposes. The willingness of farmers or any beneficiary to pay is the key to the success of that organization. The efforts of FO in this venture can't be under estimated. Their contribution for the operation of organization as well maintenance and development of distributary is remarkable.

On various occasions all the farmers of distributaries contributed in almost all the major activities planned by the FO. Farmers deposited cash amount for desiltation, running of the affairs of organization, contributed cash and labor for development and maintenance of distributaries, provided tractors, labor for desiltation etc. The resources can't only be counted in the shape of finance, but the major contribution of farmers is in providing labor, equipment and voluntarily work to the organization.

As part of this resource mobilization process some figures are available and have been calculated on various occasions. The calculation has also been made for the man-days utilized either for desiltation or other maintenance activities. The break up is given in table No 2.

Table No. 2 shows farmers willingness in the activity of desiltation. Since it benefits the farmers directly, they were eager to participate in it. The level of resources mobilization is encouraging and is a big achievement of FOs at all three pilot sites tested so far.

The FOs in Sindh have been involved in following major maintenance activities;

- Walk through surveys and annual desiltation;
- Qila bushing;
- Strengthening the banks;
- De-weeding the distributaries and paths;
- Construction of culverts; and
- Tree plantation

Table 2. Summary of Resource Mobilization by the FOs.

Activity	Summary of Resource Mobilization by the FOs		
	Dhoro Naro Minor, Nawabshah	Heran Distributary, Sanghar	Bareji Distributary, Mirpurkhas
Desilting 1997	27,500 (Jan 1997) 40,000 (June 1997)	108,900	6,800
Desilting 1998	25,700	92,000	56,000
Desilting 1999	40,000 (June 1999)		100,000
Silt clearance from the banks			9625
Development work	164 600	148 900	95 500
Repair of head regulator		5,000	
Construction of FOs office	25,000		
Repair/ Furnishing of FOs office		6,000	1,500
Total assessed value	322.800	360.800	269.425

Walk Through Surveys and Desiltation

This is the inajor area where the performance of FOs can't be ignored. They have contributed well in this activity. At all the three distributaries FOs have been desilting on their own since 1997 in annual canal closure period with the technical assistance of IPD and IIMI. Before executing the activity, farmers walk along the distributary and identify the maintenance problem, and then they call the meeting and plan the activities.

Strengthening the Banks

During the annual walk through surveys, farmers found some portions of the banks weak and were dangerous for the better operation of distributary. So they undertook some work for stabilization of banks. For strengthening of banks FO mobilized their own resources with some assistance form IIMI. These works were carried on cost sharing basis. The over all cost, FOs contribution and the area of banks strengthened is given in the table No 2 in the head of development works.

Construction of Culverts

Feeling the need of paths along the distributary, some culverts were also repaired or constricted on cost sharing basis. It gave the FOs confidence in their own work, as these simple things were lying unattended since years and were disturbing the maintenance of the system. The FOs on their own identified the problem and with technical and to some financial help did these jobs. The break up of the cost is given in the table No 2 under the head of development work.

Basically the FOs involvement in Desiltation, deweeding the paths, construction of culverts and other such minor maintenance activities is the foundation stone of farmers' organization and has been instrumental in building their confidence. This proves that organized farmers can do various jobs on their own by mobilizing their own resources. Thus the achievement in these areas facilitated the departments and reduced the workload of department to some extent. While farmers have gained the experience of doing these types of activities on the platform of FO. They have also experienced problems while performing these activities.

INVOLVEMENT IN DRAINAGE OPERATION AND MAINTENANCE

The pilot FOs are working in the area of LBOD project where big drainage infrastructure has been constricted by WAPDA. As usual farmers or other beneficiaries were not involved at the initial period of the project implementation. Now when the mega project is nearing completion, the government is facing problems concerning its maintenance and operation,

There has been a need to involve the farmers in drainage operation and maintenance. FOs have agreed to some extent with reluctance to participate in the drainage functions. Also. Initially they have agreed to understand that drainage also has same importance as irrigation channel so they should not be silent spectators and keep themselves at distance but come forward and be active partners in drainage management.

All three pilot FOs have succeeded in convincing their members to contribute in the drainage management to a certain extent. Presently in this sphere FOs are doing the following major activities:

- De-weeding the drains;
- Monitoring tube well and sump houses;
- Establishing information system; and
- Coordinating with LBOD officials.

Collaborative Activities

The FOs have gained the external support from various departments and line agencies. Their introduction as FOs is being given importance. Besides, FOs have also established links with non-governmental organizations, fertilizer companies, pesticides companies etc. These well-established links indicate the external recognition of the organization. Through these links FOs are organizing various programs of awareness and information sharing.

The summary of the services received through these links is presented in Table No, 3

Table 3. Collaborative Activities.

Activity	Beneficiaries	Organizations
Lecturers and Training		
Wheat Cultivation	115	Sindh Agriculture University, Tando Jam
Cotton Production	230	Sindh Agriculture University, Tando Jam
Role of FOs in Improved Irrigation practices	62	IIMI
Tile Drainage Technology	12	Drainage & Land Reclamation Institute of Pakistan (DRIP)
Optimum use of Irrigation water (Scheduling)	60	Sindh Agriculture University, Tando Jam and IIMI
Operation and Maintenance of Distributaries	125	IIMI
Organizational Management	63	IIMI
Piezometer and its importance and monitoring	65	IIMI
Finance Secretaries Training	105	SAFWCO and IIMI
Organizational Management, Motivation and Communication	55	NRSP and IIMI
Walk-through-Survey of the pilot distributaries	230	IIMI
Water Measurement at watercourse and Distributary	140	IIMI
Lectures on Crop Husbandry	Village dwellers	Agriculture Department, Private Sector
Demonstration Visits and Study Tours		
On-Farm Water Management Training Institute, Sakrand	63	IIMI
Sindh Agriculture & Forestry Workers Cooperative Organization (SAFWCO), Shahdadpur.	25	IIMI
Pakistan Institute for Environment Development Action Research (PIEDAR) Punjab.	22	IIMI, Swiss NGO
The Community Organizations of National Rural Support Program (NRSP)	24	IIMI
Participatory Irrigation Management Systems in Nepal	19	SDC
Video Movie on wheat cultivation	119	Agriculture Extension
Health Camp	380	SAFWCO, RWWO, Health Deptt. Local Administration
Animal vaccination (Animals)	6821	Animal Husbandry & Livestock Department
Tree Plantation (Saplings)	7850	Forest Department
Formation of Community Organization	10	National Rural Support Program (NRSP)

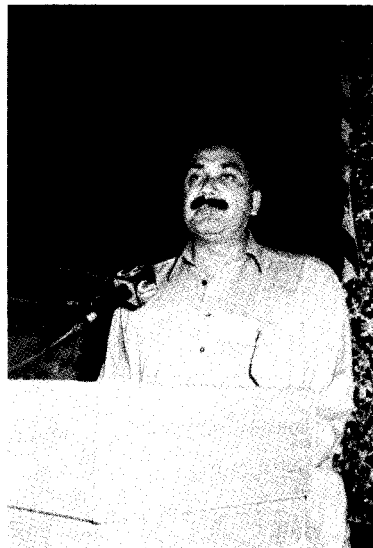
CONCLUSION

The farmer organizations formed under the pilot projects are socially viable. They have made almost all the water users their members at the watercourse level. The members have been motivated to contribute towards the development works and maintenance of distributaries even though the management transfer of irrigation system has not yet been materialized.

EFFECTIVENESS OF ORGANIZATIONAL STRUCTURE

Abdul Wahab⁸ and Niaz Sial⁹

The experience of the functioning of the farmers organizations formed with the facilitation of International Irrigation Management Institution (IMI) in the project "Farmer-Managed Irrigated Agriculture" under the LBOD project has proved effective in some areas and farmers performance within FOs has been widely recognized. Though the practice was very new and roles and responsibilities assigned to the FOs were novel to them as they did not have such prior experience. But the abilities demonstrated by the FOs and their function had a positive impact on the entire area the farmer community. The organizations' effectiveness can be judged from following indicators:



- Continuity in their function;
- Decision implementation;
- Internal and external recognition;
- Coordination with the irrigation department;
- Adoption of bylaws; and
- Flow of Information.

Regular meetings, participation and continuity in FOs Functions

Organizational meetings are necessary to keep close coordination within an organization, discuss common issues, take decisions and review the progress. Meetings are a prerequisite in planning activities, arranging resources and executing tasks. After the formation of FOs, meetings of different types i.e. management committee (MC), general meeting, meeting at watercourses, special meetings were called and the participation ratio was very positive. The total number of meetings convened, type of meeting and participation ratio of all three pilot distributaries is given in table. 1

Table 1. Meetings Convened by FOs.

Distributary / Minor	Management Committee Meetings		General Meetings		Special Meetings	
	No of meeting	Participation ratio	No of meeting	Participation ratio	No of meeting	Participation ratio
Bareji Distributary, Mirpurkhas	6	73	2	60	4	80
Heran Distributary, Sanghar	5	100	2	90	-	-
Dhoro Naro Minor, Nawabshah	5	55	2	68	4	95

Flow of information to water users

To some extent the flow of information regarding the organizational program has started which was not there earlier. The printed leaflets, training and frequent visits are the devices being used for this purpose. The latest information on issues has helped build trust among the stakeholders.

⁸ Secretary, Farmer Organization (FO), Heran Distributary, Sanghar, Sindh

⁹ Agricultural Engineer, IMI Field Station, Sanghar, Sindh

Increased understanding of doctrine of PIM

The understanding of the doctrine of the participatory irrigation management (PIM) has been increased among the farmers especially among the FO leaders. There are various parameters to judge the level of understanding. Some indicators assessed are given below.

- Improvement in presenting the FO performance;
- Giving Importance to the program activities;
- The way in which meetings are being conducted;
- Mobilizing resources;
- Interaction with various delegations; and
- Active contribution in discussions or meetings.

Decision Implementation

The organizational effectiveness can be judged from implementing the decision. In the operation of three years FOs have discussed variety of issues and have taken several decisions in operation and maintenance of organization.

Internal Recognition

Gradually the internal recognition of the organization has increased. In the initial period farmers were not giving importance to this effect. But with the passage of time, the activities carried out by the FOs for common benefit, have taken roots in farmers' community.

The FOs have been widely recognized by its members. It can be assessed from the decision implementation, fee collection, participation in desiltation, conflict resolution etc. In these activities farmers are respecting the calls and decisions of the FOs.

External Recognition

The FOs have gained the external support of various departments and line agencies. Their introduction as an FO is being given importance. Besides government departments, FOs have also established links with non-governmental organizations, fertilizer companies, pesticides companies etc. These well-established links indicate the external recognition of the organization. Through these links FOs are organizing various programs on awareness and information sharing.

Coordination with IPD

The major affect of the organization witnessed is it's close coordination with the IPD officials. Before the formation of FOs, there was a communication gap between the farmers and the agency, which was creating mistrust leading to poor performance of the system. Now the field level irrigation officials are in close contact with farmers and FOs have access to higher level IPD officials. Earlier the water users were not being informed about rotation programs of distributaries, now the department regularly corresponds with FOs.

Adoption of by-laws

The by-laws have been proposed for the FOs and WCAs. In the short period of two months all the three pilot FOs have adopted these by-laws accordingly. The structure of the management committee of FOs as well as WCAs has been changed. The members fill up the membership form, collect Rs.100 as membership fee from each member of WCA. Each WCA sends their application to the FO for membership along with fee of Rs.100. Though these bylaws are still waiting for governmental approval, FOs have fulfilled all the requirements.

Now all the FOs are governed by official rules and regulations, have audited accounts, have well established offices, maintain proper record of meetings and all the activities, and convene regular meetings. These organizations have succeeded to keep the organization alive and provide a platform for the farmers' community.

Human Resource Development Program

As already mentioned, the program was very new to the farmers, so they had no prior knowledge about their innovative roles. For understanding the entire new concept of farmers' participation in irrigation management, operation and organization etc., the farmers need to be trained in various areas.

Farmers organizations and IIMI jointly initiated human resource development program to orient the water users in different techniques. So far the training has been conducted in following areas.

- Organizational management and record keeping;
- Organizational by-laws and action plan;
- Communication;
- Discharge measurement;
- Financial Management; and
- Monitoring water table depth through piezometers.

A large number of farmers motivated by the FOs attended these training activities and it proved very useful in enhancing their skills. The number of farmers attended various training's at all three pilot distributaries is given in the following table.

Table 2. Water Users participation in training events

Distributary	Organizational Management	Organizational by-laws and action plan	Discharge measurement	Financial Management	Measuring water table depth
Bareji Distributary, Mirpurkhas	33	5	25	21	40
Heran Distributary, Sanghar	38	8	38	32	31
Dhoro Naro Minor, Nawabshah	8	8	46	16	22
Total	79	21	109	69	93

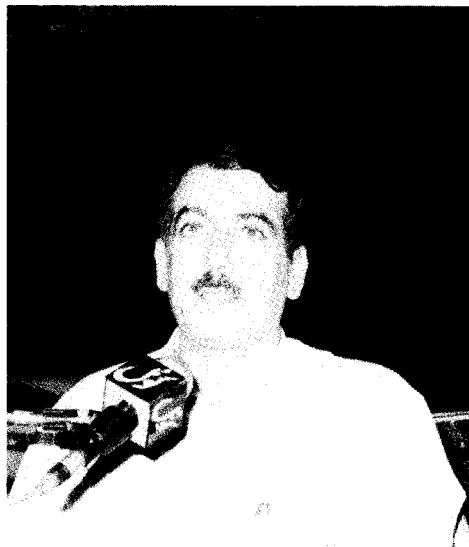
Conclusion

The farmer organizations formed at the pilot distributaries have gained internal and external recognition. The members have adopted their bylaws and organizations are smoothly working as an institution. The members of the watercourse associations and FOs have gained skills by participating in various organizational training events. It can be concluded that having the capacity the members of FOs are able to take over the responsibility of managing the distributaries and minors under the new system.

ACHIEVEMENTS OF FO FROM PUNJAB (HAKRA 4R DISTRIBUTARY)

Mian Abdul Wahid¹⁰

The performance of any organization can be monitored only if the responsibility is transferred to that organization. The Hakra 4R water user federation has been established since March 5, 1997 but no responsibility is transferred to the organization as yet. For the transfer of the responsibility, negotiation is being made with the irrigation department but due to lack of legislation, the process is being prolonged.



PID is willing to transfer the system to federation in every way. The MOU draft was prepared under the existing irrigation and drainage law (1873). The secretary irrigation asked the federation's opinion on its willingness to takeover the complete system. The federation agreed to take the complete system instead of signing a MOU, but unluckily the process has been delayed. Hopefully, at the end of the year, the system would be transferred to the federation.

Despite the non-transfer of the power, federation is undertaking its activities. These are:

MEETINGS

Meetings are one of the important factors in making the organization sustainable. That's why the high tiers organize their meetings on monthly basis. The lower tier also plans regular meetings. At the moment, 44% WUAs have scheduled their monthly meetings and hopefully this percentage will increase.

The high tier, WUF, is also organizes its annual general meeting. Two annual meeting were held and about one thousand farmers attended each meeting. Each meeting lasted for about five hours. First year, the provincial irrigation minister was the chief guest and second year, Deputy Commissioner was chief guest of the meeting.

To see the organized gathering, both the chief guests, minister and DC remarked " We have never seen such a disciplined gathering of farmers in our life", the disciplined gathering of farmers showed strength and viability of the organization.

MAINTENANCE AND REPAIRING OF THE DISTRIBUTARY

The WUF launched the annual maintenance campaign twice on self-help basis. A total of 800 farmers and 677 farmers participated in these activities respectively. The farmers did this work with great zeal and zest. According to PID assessment, a total of Rs. 250,000-400,000 work was done in each year.

¹⁰ President Farmer Organization (FO) Hakra 4-R Distributary, Bahawalnagar, Punjab.

ESTABLISHING OF THE OFFICES

All the five WUOs and WUF have established their offices on self-help basis. The offices are properly maintained.

OPENING OF BANK ACCOUNT

All three tiers of organizations have opened their bank accounts and these accounts are being operated. In this way, a total of 130 accounts have opened.

FUND RAISING

The WUOs are regularly raising funds to meet the organizational requirements. Whenever, there is an activity, the expenditure on that activity is estimated and then collected equally from each member. It also happens that some members give more than their due share voluntarily.

BYE-LAWS

The bylaws are essential for the smooth running of any organization. The federation established the bylaws committee to frame the bylaws. Within three meetings the sub-committee frames the bylaws and then gets their approval from the general body.

RESOLVING WATER RELATED DISPUTE

The WUF has started to resolve the water-related disputes. Only a few cases remained, unresolved in the last 10 years the federation resolved the rest amicably. Now people use this platform for the solution of their problems. Whenever any issue is raised, people prefer to bring it to the federation.

EQUITABLE WATER DISTRIBUTION

The federation is achieving equitable water distribution. The federation established a water court that did the survey of the distributary. The watercourses, which are drawing more than their authorized discharge, convince their shareholders morally. If they do not agree then outlets are adjusted legally. The federation does not spare water stealers if a case is registered against them. The water stealers repair their outlets accordingly.

COLLABORATION WITH THE DEPARTMENT

IWMI is strengthening its collaboration with other departments. It is arranging lectures at the village level for the transfer of improved technology. These lectures benefit farmers at grass root level. The lectures are based on improved irrigation and agriculture methods, animal husbandry, and health etc. NRSP and Action aid are also launching their activity in our area. These are micro credit scheme and adult literacy centers respectively.

Different fertilizer and pesticide companies sponsor the logistics of the annual meeting arranged by IIMI.

HEALTH CAMPS

We regularly organize free health camps. Doctors contact us for launching these free health camps. To date, hundreds of patients have benefited from these camps.

INVESTMENT GROUP

WUF established an investment group. A total of seven members make up the group. Each member invested Rs.30, 000-100,000 in the group. The total amount invested is Rs. 630,000. The investment group got the dealership from Engro chemical limited. The group purchased 1100 bags of fertilizer and stored it in three different Chaks of the Zone to make it accessible to the farmers. The investment group framed its own bylaws for its smooth running. It introduced shares and the cost of each share is Rs. 500. It is essential for the membership of the group to purchase the share certificate in the range of Rs.5000-100, 000. The investment group also announced to donate one rupee per bag of fertilizer to Organization, from which 25 piasas would be given to federation and 75 piasas, would be kept by the organization. The WUO is launching awareness activity in the area to expand the program.

STUDY TOUR

The federation launches study tours for exposure. These study tours are national and overseas level. The federation mostly provides finances for inland tours while the overseas trips are financed by the NGO. The purpose of the overseas trips is to see how farmers managed system work in other countries.

SELF- EVALUATION OF HAKRA 4-R WUOS

The WUOs of Hakra 4-R distributary established a seven-member Inspection Committee. The purpose of the committee is to evaluate the performance of the WUOs in terms of their record keeping of organizational and financial aspects, and prepare a critical report. The committee held three meetings for completing the task. In the first meeting, committee selected its president and developed nineteen parameters for the performance assessment.

The committee inspected the record of all six WUOs, and evaluated them. The report indicates that the performance of the WUOs except WUO2, related to organizational management was satisfactory. Those WUOs which meet frequently, scored better points as their office bearers had become more trained. The WUO 2's poor performance in the organizational management is due to less work, i.e., comparatively less number of meetings. The performance of all WUOs, related to financial management was, however, regarded to be poor.

The committee decided to submit the detailed report in the next round of WUO meetings. The committee was of the view that performance of WUOs may improve further if the committee is authorized to check the record at any time, for which approval will be sought from the WUOs general bodies.

NEWSLETTER

Federation is going to publish a newsletter on monthly basis. Action aid, an NGO has agreed to sponsor it. The purpose of the newsletter is to give information about the federation's activity to grass root level and different relevant agencies

TRAINING

The federation of Hakra 4R undertook series of capacity building activities and training with active support from IIMI Pakistan.

Flow measurement

12 training sessions, spanning on four months were undertaken for top level and gross root level. The purpose of the training was to discuss with the department the water supply and to monitor the equity of water distribution.

Financial management

One day training session for 23 members of the WUOs and WUF was undertaken. The purpose was to provide a basic understanding on accounting procedures to various WUOs tiers.

Organizational Management

One day training session of 23 members of WUOs and WUF was conducted to improve the skills of the WUO leaders for organizational development activities.

Animal husbandry

Three training sessions on animal husbandry were undertaken at village level. A total of 144 farmers benefited by becoming aware of the causes and treatment of common livestock diseases.

Improved irrigation and agriculture technology

Four training sessions were conducted for 333 farmers. The purpose was to introduce improved irrigation and agriculture practices (rate, timing, and input frequency). The federation has three sets of bed shapers for growing cotton on bed-and-furrow technology. The federation also formulated the bylaws for the smooth running of the implements.

Record keeping

Informal training activities were conducted, especially for general secretaries, on maintenance of register for periodic meetings.

Restoring of confidence

The major achievement of the Federation is restoring of confidence of the farmers. Now Federation meets with the government's officials more confidently. The federation also launches and conducts big farmers' gatherings.

RECOMMENDATIONS FOR FUTURE

Training on important social and technical aspects of organization

Training is a very important factor in capacity building of an organization. Therefore, government should launch necessary training programs.

Transfer the responsibility to FO promptly after the formation of organization

After the formation of FO, transfer the responsibility to FO so that it feels a sense of ownership to the organization. At initial stages, the spirits are high among the FO members, so they work with great zeal and zest.

Effective cooperation is required from the concerning departments after the transfer of the system

The joint management is a new experience therefore the concerned departments should cooperate with FOs effectively for the sustainability of the system.

Legal protection

For effective organization, legal protection is essential. The FO should have the power to implement its own decisions.

Keep the FO free from politics

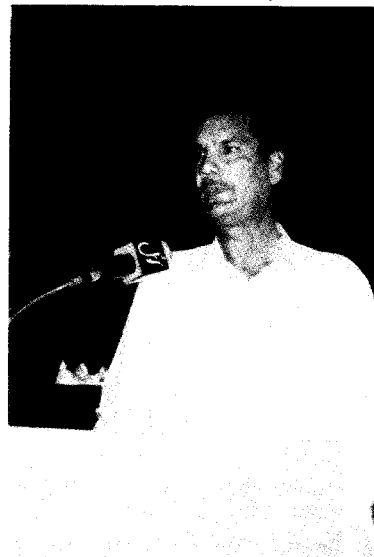
Try to keep the organization from politics. It should focus on irrigation and agriculture activities.

Monthly meetings of general body should be encouraged

Meetings are an important factor in making the organization sustainable, so these should be encouraged at every level. Interaction among members is increased and doubts are dispelled through meetings.

EFFECTIVENESS OF ORGANIZATIONAL STRUCTURES EXPERIENCE FROM HAKRA 4-R DISTRIBUTARY

Soofi Muhammad Iqbal¹¹



INTRODUCTION

The organizational structure of Hakra 4-R distributary is a three tier system in which 4500 water users were organized (as first tier) into 124 Water Users Associations (WUAs). Each WUA was composed of all the farmers along a watercourse. The numbers of WUA leaders varies from 5 to 7, except one to two members in WUAs where the entire watercourse command belongs to one owner. The members of the WUAs were selected with the average participation of 77% water users at the watercourse level.

The Hakra 4-R distributary was grouped into five sub-systems based on social and physical divisions. The number of watercourses among water users varies from 15 to 33, depending on the size of hydrological unit. These WUAs were organized (as second tier) into five Water User Organizations (WUOs). The electoral body of each WUO also comprises of 15 to 33 watercourse representatives. Each WUO formed executive bodies of 7- to 10 members, depending on the social and hydrological units.

At each subsystem WUO selects 5 members for WUF general assembly (third tier). In most cases, the subsystem level president and general secretary also co-opt for Federation's general assembly. The remaining three WUO members are watercourse representatives. Thus the general assembly of the Water Users Federation is comprised of 25 members. These members selected a five-member executive body for the WUF for the entire distributary command on March 5, 1997.

ADVANTAGES OF THE THREE TIER ORGANIZATIONAL STRUCTURE

Following are the advantages of three tier organizational Structure

To increase the interaction among the water users

The 4R distributary is 57 km long and the interaction among the head and tail farmers was not easy due to long distance. But it has become easy due to the three-tier structure.

To involve maximum water users in irrigation management decision-making

Maximum water user participation has more chances to improve the efficiency, equity, reliability, productivity and sustainability associated with the use of irrigation water resources. There are 700 office-bearers and they are comparatively more active than the non-office bearers. If 700 persons are active then it is hoped that others would be active too.

To solve the water related issue at local level

The issues are resolved at local level amicably, quickly and economically, as people's confidence increases over their leadership.

¹¹ Secretary Farmer Organization (FO) Hakra 4-R Distributary, Bahawalnagar, Punjab.

Right to appeal

The three-tier structure provides the right to appeal. If someone is not satisfied by the lower tier decision, he may go to top level for justice.

Achieving equitable water distribution

There are more chances to achieve equity. The farmers have become more familiar with the system due to different training on technical aspects. Therefore, they from time to time check the gauges of one another. If they notice anything unusual, they contact their respective organization promptly.

Proper maintenance of the distributary

Each organization has its own particular area, so it will take care of that area, resultantly maintenance work would be improved. It creates a healthy sense of competition. For instance, during the annual closure of the year, 1997, and 1998, the WUF of Hakra 4R distributary undertook a five-day maintenance campaign on self-help basis. The five subsystems WUOs participated on each day of the maintenance campaign. The federation announced that prize would be awarded to the subsystem that would perform best. In this way, each subsystem did its best. Meetings were organized at WUA level. Due to this healthy competition, work worth of Rs. 400,000 was done, according to the assessment of PID.

FUTURE RECOMMENDATIONS

Keeping in view the progress, I suggest some recommendation for future replications. These are as under:

Organizational structure should be according to the size of the distributary

If the distributary is small, i.e., 20-30 outlets, then there is no need for three tier structures. If it is bigger in size then there is need for a three-tier structure. In this way, the general body can easily meet on monthly or emergency basis. If the general body consists of a large group it is difficult to organize the meeting and to reach any consensus. It would be wastage of resource and time. No doubt, meetings are one of the important aspects in making the organization sustainable.

Formation of sub-committees at every tier should be encouraged

The sub-committee at every level should be encouraged. As a sub-committee can deal with organizational, irrigation and agriculture issues.

PROBLEMS AND SOLUTIONS RELATED TO IRRIGATED AGRICULTURE IN BALOCHISTAN.

RESULT OF THE GROUP DISCUSSION

The participants of the workshop were divided into five groups to discuss the Problems and Solutions Related to Irrigated Agriculture in Balochistan. The senior official of the AWB and OFWM facilitated the discussions. The farmers from the Pat Feeder Canal Circle, Lesbela and Kirther Canal Systems participated in the discussions. The following sections present the summary of the problems and recommendation given by the participants.

GROUP NO. 1

- Inequitable water distribution;
- Faulty and rusted gates at the head regulators;
- Inadequate water i.e. it does not meet the crop water requirements;
- Siltation in the minors;
- Non-participation of farmers in the construction activities related to minors;
- Disorganized rotation among minors.

GROUP NO. 2

Problems of irrigated agriculture in Balochistan:

- Inequitable water distribution among the minors i.e. minors at the main canal get water 24 hours. On the other hand minors at the distributary get less than that.
- Under investment at the distributary and main canals. 50% of abiana collected should be spent on distributary maintenance and 50% should be spent on the main canal.

GROUP NO. 3

- Infringement on the right of water turn of small farmers by the large farmers.
- Large farmers disallow route to small farmers for moving water.
- Seepage in the main canal.

GROUP NO. 4

- Higher bed of minor with respect to the water level in the main canal. The minor does not draw its due share of water.
- Short water supplies at the tail in Kharif season.
- Disorganized rotational irrigation system among minors.
- Abuse of water turn by allotting water turns of others.
- At some location farmers do not allow the route of watercourse to move water.
- After rehabilitation of main canal the required water level is not maintained.
- In some area severe shortage of water i.e. farmers do not even have water for drinking.

GROUP NO. 5

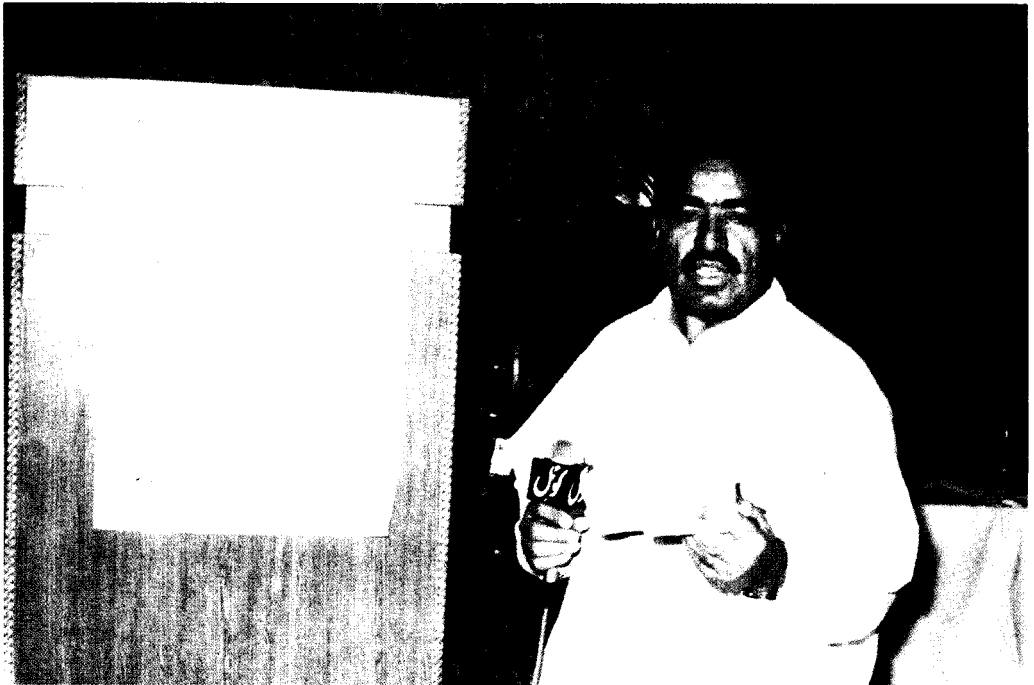
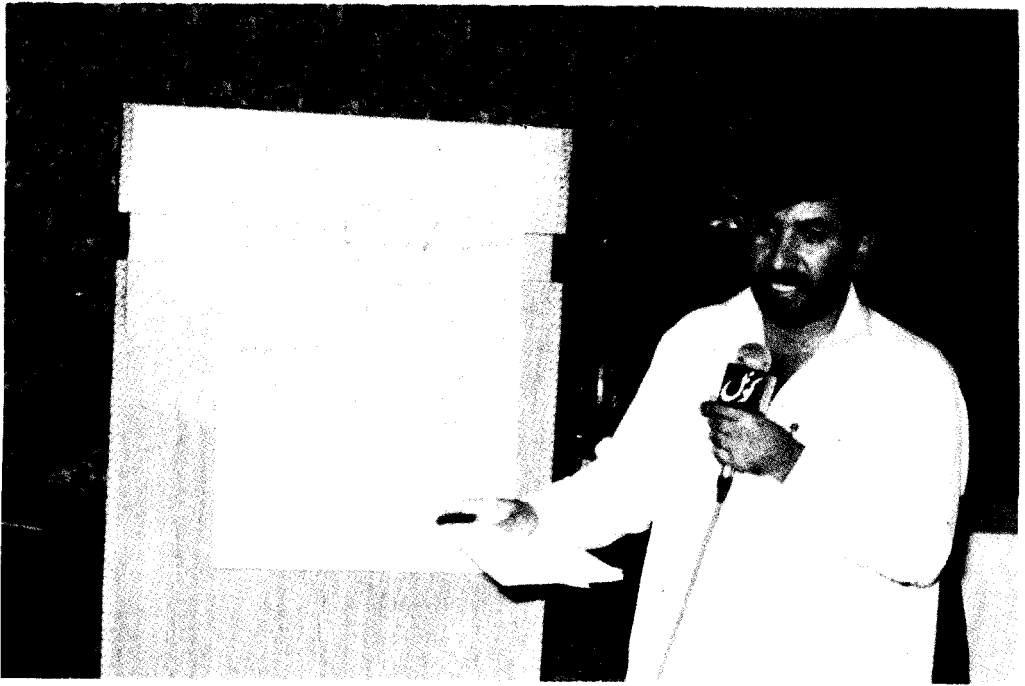
- Water theft through illegal pipes.
- Shortage of water at the head of main canal.
- Inequity of water distribution among the minors.
- Inequitable allocation of water to water users.
- Annual canal closure inconsistent with no demand (should be between April 15-May 15).
- Shortage of irrigation water due to rotational irrigation system among distributaries.
- Seepage through the Patfeeder canal.
- Sedimentation in the distributaries.
- Eroded banks of Maghri branch (demanded for raising banks).
- Broken structure of RD 40.

RECOMMENDATIONS BY GROUPS

- 1 Deploy honest staff at the head regulators.
- 2 Lift irrigation may be introduced at the Patfeeder external (Beroon) to bring more area under cultivation.
- 3 Main canal should be lined to control the seepage from the canal.
- 4 Installation of gates at the Dip.
- 5 Worn gates should be replaced.
- 6 Abolish rotational irrigation among the minors.
- 7 Minors should be desilted and cleaned.
- 8 Farmer organization should be created to overcome these problems.
- 9 Farmer organization should be legally empowered.
- 10 There should be separate farmer organization at the Patfeeder (external).
- 11 Farmer organization should be represented by all the tribes present in the minor area.
- 12 50% of the collected abiana should be spent on the maintenance of minor and 50% on the maintenance of main channel.
- 13 Illegal pipes should be removed.
- 14 Main canal should be closed annually between April 15 and May 15.



Farmer's participation in Group Discussions.



Presentation of results of the Group Discussions by farmers and facilitators.

ANNEXES

LIST OF PARTICIPANTS

Mr. Abdus Salam Khan	M.D. BIDA/Secretary I&P
Mr. Zain-ud-Din Khan	Chief Engineer Irrigation
Mr. Ghulam Usman Babai	Provincial Coordinator NDP
Mian Bashir Ahmed	General Manager BIDA
Syed Ali Muhammad Shah	Project Director MCC
Mr. Muhammad Ibrahim Rind	Director AWI3
Mr. Ali Akbar Zehri	XEN Patfeeder Canal
Mr. Abdul Hameed Mengal	XEN MCC
Mr. Muhammad Ilyas	XEN Lasbela
Justice Alhaj Mir Hazar Khan Khoso	Farmer Representative (Chairman)
Mr. Muhammad Siddique Rind	Farmer Representative
Abdul Hameed Lakhti	Technocrat Area Water Board
Dr. Taj Muhammad Jamali	Technocrat Area Water Board

Farmers of Lasbela Canal

- 1 Mr. Muhammad Siddique Rind
 - 2 Mr. Muhammad Ishaque Mengal
 - 3 Mr. Muhammad Baboo Siapad
- #### Farmers of Patfeeder Canal System Naseer Distributary
- 4 Mr. Iltaf Khan Khosa
 - 5 Mr. Bashir Khan Khosa
 - 6 Mr. Sardar Khan Khosa
 - 7 Mr. Muhammad Ayoub Khosa
 - 8 Mr. Imtiaz Khan Gola (Sarwar Gola)
 - 9 Haii Abdul Sattar Khan Khosa
 - 10 Mr. Asadullah Khan Khosa
 - 11 Ha i Abdul Khaliq Umrani
 - 12 Mr. Muhammad Amin Khosa
 - 13 Mr. Muhammad Khair Brohi
 - 14 Mr. Malguzar Khosa
 - 15 Sakhi Sikandar Khan Khosa
 - 16 Mr Muhammad Azim Khan Magsi
 - 17 Mir Nasibullah Khan Khosa
 - 18 Mr. Nasar-u-Din Khan Khosa
 - 19 Hafiz Roshan Khan Khosa
- #### Judher Distributary
- 20 Ha i Ali Madad Umrani
 - 21 Syed Abdullah Shah
 - 22 Syed Inayat Shah
 - 23 Syed Irshad Ahmed Shah
 - 24 Mr. Shah Murad Khosa
 - 25 Mr. Pir Bakhsh Shar
 - 26 Mr. Sher Muhammad Bhangar
 - 27 Syed Akhtar Zaman Shah
 - 28 Haji Qaiser Umrani
 - 29 Mr. Jagan Khan Umrani

- 30 Mr. Muhammad Amin Jakhrani
 - 31 Mr. Arz Muhammad Bhangar
 - 32 Mr. Dilmurad Umrani
 - 33 Mr. Barkat Khan Jakhrani
 - 34 Mr. Sanaullah Khan Khosa
 - 35 Mr. Hazoor Bakhsh Baghdar
 - 36 Mr. Wahidd Bakhsh Khosa
 - 37 Mr. Hazar Khan Chandio
 - 38 Mr. Nobat Khan Khosa
 - 39 Syed Faqir Shah
 - 40 Mr. Mehar Dil Khan Umrani
- #### Temple Distributary
- 41 Sardar Allah Waraya Shar
 - 42 Mr Suleman Shar
 - 43 Mr. Shahnawaz Khan Umrani
 - 44 Mr. Muhammad Siddique Talani
 - 45 Mr. Shah Muhammad Abro
 - 46 Mr. Sikandar Khan Umrani
 - 47 Rais Nazim Khan Umrani
 - 48 Mr. Fazal Din Abro
 - 49 Mr Ghulam Qadir Bugti
 - 50 Mama Khair Bakhsh Gola
 - 51 Sardar Daud Khan Khosa
 - 52 Mr. Abdul Rehman Khan Shar
 - 53 Mr. Mureed Khan Bugti
- #### Jhatpat Distributary
- 54 Mir Khan Muhammad Khan Jamali
 - 55 Mr Muhammad Murad Lashari
 - 56 Mr Sikandar Ali Lashari
 - 57 Mr. Abdul Rehman Hijwani
 - 58 Haji Muhammad Sharif Hijwani
 - 59 Mr Manzoor Khan Khoso
 - 60 Haji Hussain Bakhsh Gola

- 61 Haji Amir Bakhsh Khoso
 62 Mr. Sikandar Khan Lashari
 63 Naib Piral
 64 Mr. Muhammad Ayoub Khoso
 65 Mr. Mehrullah Pathan
 66 Mr. Abdul Samad Lehri
Mohbat Pur Distributary
 67 Mr. Illahi Bakhsh Khan Khoso
 68 Mr. Changaiz Khan Jamali
 69 Mir Muhammad Aslam Khan Jamali
 70 Mr. Sobdar Khan Jamali
 71 Mr. Shahan Khan Mundrani
 72 Mr. Gahwanar Khan Jamali
 73 Mr. Manzoor Khan Hijwani
 74 Mr. Sher Muhammad Rind
 75 Mr. Ghulam Hussain Rind
Ballan Distributary
 76 Mr. Pir Muhammad Mengal
 77 Mr. Jan Muhammad Mengal
 78 Mr. Muhammad Yaqoob Sarpara
 79 Mr. Muhammad Ismail Chalgari
 80 Mr. Abdul Rashied Chalgari
 81 Mr. Gaji Khan Zehri
 82 Mr. Muhammad Ali Umrani
 83 Mr. Abdul Ghaffar Rind
 84 Syed Khakan Shah
 85 Mr. Ali Muhammad Lashari
 86 Mr. Abdul Hameed Jattak
Bari Distributary
 87 Mr. Nawab Khan Khoso
 88 Mr. Abdul Shakoor Khoso
 89 Mr. Abdul Fatah Khoso
 90 Mr. Muhammad Ilyas Jamali
 91 Haji Jamal Khan Mastoi
 92 Mr. Ali Hassan Gola
 93 Mr. Mumtaz Ali Rind
 94 Mr. Behram Khan Buledi
 95 Haji Abdul Fatah Rind
 96 Haji Muhammad Murad Rind
 97 Mr. Din Muhammad Mastoi
Umrani Distributary
 98 Mr. Taj Muhammad Lehri
 99 Mr. Muhammad Sadiq Khan Umrani
 100 Mr. Wazir Khan Umrani
 101 Mr. Habibullah Bangalzai
 102 Mr. Ubedullah Umrani
 103 Mr. Allah Dad Umrani
 104 Malik Pir Jan
 105 Haji Dur Muhammad Lehri
 106 Mr. Muhammad Alam Jalbani
Rupa Distributary

- 107 Mr. Abdul Hakem Rid
 108 Mr. Sultan Brohi
 109 Mr. Qaiser Khan
 110 Mr. Mohbat Faqir
 111 Haji Khan Rind
 112 Mr. Shahrair Rind
Magsi Distributary
 113 Mr. Allah Bakhsh Umrani
 114 Molvi Abdul Hakeem
 115 Mr. Abdul Hameed Khan Lakhti
 116 Molvi Saleh Muhammad
 117 Mr. Safar Khan Umrani
 118 Mr. Pehlwan Khan Umrani
 119 Mr. Khuda Bakhsh
 120 Mr. Hamidullah
 121 Mr. Abdul Ghafoor
Baroon Patfeeder Area.
 122 Mr. Karim Bakhsh Bangalzai
 123 Mir Muhammad Aslam Jamali
 124 Mr. Muhammad Siddique Bangalzai
 125 Haji Ghulam Mustafa Khan Rind
 126 Mr. Abdul Fateh Khosa
Hairdin Irrigation Sub Division
 127 Mir Abdul Majeed Khan Khosa
 128 Mir Fazal-ur-Rehman Khan Khosa
 129 Haji Ahmed Ali Khan Khosa
 130 Mr. Shuja Ahmed Khan Khosa
 131 Dr. Luqman Khosa
 132 Haji Dildar Khan Khosa / Zahoor Khan Khosa
 133 Haji Mushraf Khan Khosa
 134 Mr. Abdul Ghaffoor Khan Khosa
 135 Mr. Ikhtiar Khan Khosa
 136 Mr. Azam Khan Khosa
 137 Mir Budha Khan Gajani
Farmers Of Khirther Canal System
Upper Khirther Sub Division
 138 Mir Amanullah Khan Jamali
 139 Mir Ghulam Nabi Jamali
 140 Mir Khan Muhammad Khan Jamali
 141 Haji Jamal-u-Din Mastoi
 142 Mr. Nazir Ahmed Bangalzai
 143 Haji Niaz Ahmed Umrani
 144 Mr. Allah Rakhia Khan Jamali
 145 Haji Shabir Ahmed Umrani
 146 Mr. Muhammad Ali Umrani
 147 Haii Jahangir Khan Pandrani
 148 Mir Ali Gohar Khan Jamali
 149 Wadera Fida Hussain Jamali
 150 Mir Ali Hassan Khan Jamali
 151 Mr. Liaqat Khan Pandrani

- 152 Mir Bagan Khan Umrani
 153 Mr. Muhammad Anwar Marri
 154 Mr. Khan Muhammad Khan Marri
 155 Mr. Nisar Ahmed Rind
 156 Mir Allah Bakhsh Jamali
 157 Mir Hassan - Din Khan Jamali
 158 Mir Muhammad Nawaz Khan Jamali
 159 Haji Abdullah Hijwani
 160 Mr. Mumtaz Khan Jamali
 161 Dr. Mehboob Ali Jamali
 162 Mr. Ghulam Qadir Hijwani
 163 Dr. Qudratullah Jamali
 164 Mir Samandar Khan Jamali
 165 Mr. Qurban Khan Umrani
 166 Mr. Safar Khan Jattak

Lower Khirther Sub Division

- 167 Haji Ali Nawaz Magsi
 168 Mr. Harnza Bangalzai
 169 Mr. Sooba Khan Rind
 170 Haji Khan Muhammad Shahwani
 171 Mr. Abdullah Shah
 172 Mr. Muhammad Salah Shahliani
 173 Haji Juma, Khan Roongha
 174 Mr. Ghulam Hyder Pandrani
 175 Mr. Qurban Palal
 176 Mr. Allah Bakhsh Rahooja
 177 Mr. Abdullah Pilal - Mehrullah Palal
 178 Mr. Imclad Khan Jamali
 179 Mr. Itbar Khan Jamali

- 180 Mr. Habibullah Bugti
 181 Mr. Fareed Bhatti
 182 Mr. Abdul Wahid Brohi
 • **Hairdin Drainage Sub Division**
 183 Mr. Daood Khan Khosa
 184 Mir Mehrullah Khan Khosa
 185 Mir Khuda dad Khan Khosa
 186 Mir Meva Khan Khosa
 187 Mr. Sanauallah Khan Khosa
 188 Mir Akbar Khan Khosa
 189 Mir Akram Khan Khosa
 190 Mir Aftab Khan Khosa
 191 Mir Naseebullah Khan Khosa
 192 Mir Ishfaque Ahmed Gola
 193 Mr. Dur Muhammad Khan Khosa
 194 Mir Izhar Khan Khosa
 195 Mir Juma Khan Gajani
 196 Mir Muhammad Ibrahim Khan Gajani
 197 Mir Shah Pasand Khan Kanrani
 198 Wadera Lashkar Khan Kanrani
 200 Mir Manzoor Ahmed Khan Khosa
 201 Mr. Yar Muhammad Khosa
 202 Haji Zain-ul-Abidin Khosa
 203 Mir Sikandar Khan Khosa
 204 Mir Shah Dost Khan Khosa
 205 Haji Abdul Sattar Khosa
 206 Haji Safar Khan Jamali.
 207 Muhammad Rahim Gajam

LIST OF THE GOVT. OFFICERS/OFFICIALS

Civil Administration

Mr. Mir Muhammad Aslam Jamali
Mr Mir Khhuda Bakhs Baloch

Deputy Commissioner Nasirabad
Deputy Commissioner Jaffarabad

Agriculture Department

Mr. Abdus Salam Baloch
Mr. Ghulam Rasool Gujar
Mr. Edwen Islata
Mr. William C. Bell
Mr. Irfan Bakhtiari
Mr. Bashir Ahmed Baloch
Hazoor Bakhsh Gopang
Hazoor Bakhsh Bhainger
Ghhulam Sarwar Safi
Mr. Mustafa Rind
Mr Shah Muhammad Mahsood
Mr Abdul Rehman Zehri
Mr. Riaz Rehman
Mrs Shaheen Ejaz
Miss Rubina Aziz
Miss Nargis Bibi
Miss Rukhsana Bibi
Miss Shazia Khoso
Mr Khaliq Dad Shah

Director General Agriculture
Team Leader/Coordinator PFCAD Proj:
Rural Sociologist PFCAD Project
S.T.A. PFCAD Project
Assistant Agricultural Engineer PFCAD
Project Director NDP
Deputy Director NDP
Deputy Director NDP
Agriculture Officer
Agriculture Officer
Agriculture Officer
Agriculture Officer
Assistant Director
Assistant Director
F.A.
F.L.A.
F.L.A.
F.L.A.
Deputy Director Institution

Irrigation Department

Mr. Abdul Hameed Mengal
Mr Abdul Razaq
Mr Muhammad Akbar Khoso
Ch: Muhammad Akbar
Mr. Ghulam Qadir Rind
Mr. Nazir Ahmed Zehri
Mr. Irshad Ali Jamali
Mr. Bashir Ahmed Magsi
Mr Ram Chand
Mr. Ghulam Sarwar
Mr. Allah Diwaya
Mr. Amanullah
Mr. Khadim Hussain
Mr. Irshad Ali
Mr. Sheharyar Khan
Mr. Abdul Shakoor
Mr. Karim Bakhsh
Mr. Shafi Muhammad
Mr. Ali Dad Mastoi
Mr. Fateh Khan Silachi
Mr. Muhammad Hanif
Syed Azim Shah
Mr. Khalid Hussain
Mr. Ghulam Qadir
Mr. Adam Khan Chandio
Mr. Lal Dina

SDO DM Jamali
SDO Dera Allah Yar
SDO Hairdin
SDO Goth Tagia Khan
SDO Hairdin Drainage
SDO Upper Khirther
SDO Lower Khirther
Assistant Engineer Mechanical
SDO MCC
Junior Engineer
Junior Engineer
Sub Engineer
Sub Engineer
Sub Engineer
Sub Engineer
Sub Engineer
Sub Engineer
Sub Engineer
Sub Engineer
Sub Engineer
Sub Engineer
Sub Engineer
Deputy Collector
Divisional Accountant
Zilladar
CHDM
Stenographer
Divisional Head Draftsman
Draftsman

Mr. Saifullah	Head Clerk MCC
Mr Shakar Khan	S.A.C.
Mr. Ghulam Mustafa	Junior clerk
Agha Bore Jan	Govt. Contractor
Ch: Ghulam Nabi.	Govt. Contractor

PDC NDP

Mr. Pir Muhammad Sand	Construction Engineer
Mr. Sabir Khan	Junior Engineer
Mr. Abdul Rehman Gormani	Junior Engineer
Mr. Arif Nadeem	Inspector
Mr Zulfiqar Baloch	Inspector
Mr. Yasin Lashari	Inspector
Mr. Muhammad Sadiq	Inspector

Journalist

Mr. Azizullah Umrani
 Mr. Abdul Razaq Bbangalzal
 Agha Niaz Magsi
 Mr. M.U. Qambrani
 Mr. Abdul Sattar Tareen
 Mr. Saeed Numani
 Mr. Ghulam Hyder Chhahlgari
 Mr. Faiz Muhammad Baloch
 Mr. Mannthar Mangi
 Mr. Naseer Ahmed Mastoi
 Shaikh Abdul Razaq
 Mr. Muhammad Ayoub Zahid
 Sofi Muhammad Ibrahim
 Mr. Habibullah Baloch
 Mr. Khadim Hussain Omani
 Mr. Wali Muhammad Zehri

WORKSHOP ORGANIZING COMMITTEE

- 1 Mr. Ibrahim Rind , SE/Director Area Water Board, Pat Feeder Canal
- 2 Ali Akbar Zehri , XEN Pat Feeder Canal
- 3 Abdul Hameed Managle, XEN Minor Canals
- 4 Ali Muhammad Shah, PD Minor Canals
- 5 Bashir Ahmad, Deputy Director PCRWR
- 6 Zafar-ul-Haq Hashmi, IWMI
- 7 Mohsin Hamid Dar, Maintenance Officer, IWMI
- 8 Tberez Ahmad, Secretary , IWMI
- 9 Zafar Iqbal Mirza, Irrigation Agronomist IWMI
- 10 Waheed-uz-Zaman, Senior Irrigation Engineer IWMI,

PROGRAM OF THE WORKSHOP

First Day: Chief Guest Irrigation Minister, Balochistan

10:00 – 10:05	Recitation of Holy Quran	
10:05 – 10:15	Inaugural address: Institutional Reforms in Balochistan	Mr. Abdus Salam Khan
10:15 – 10:30	Address	Secretary Irrigation
10:30 – 10:45	Address	Irrigation Minister
10:45 – 11:00	Concept of NDP and BIDA	Former Member BIDA
11:00 – 11:30	Restructuring of Irrigation Department into BIDA	Mr. Usman Babie
11:30 – 12:00	Participatory Irrigation Management 'Need of the Time'	NDP Coordinator
12:00 – 12:15	Achievements of FO from Punjab (Hakra 4-R Disty)	Mr. Waheed-uz-Zaman
12:15 – 12:30	Effectiveness of Organizational Structure, Experiences from Hakra 4-R Farmer's Organization	Senior Irr. Engineer
12:30 – 13:00	Video Film Participatory Irrigation Management 'Need of the Time'	Mr. Zafar Iqbal Mirza
13:00 – 14:00	Lunch and Prayer Break	Irrigation Agronomist
14:00 – 15:15	Group Discussion on "Problems and Solutions Related to Irrigated Agriculture in Balochistan"	Mian Abdul Wahid
15:15 – 15:45	Findings of the Group Discussions (Five minutes each)	President FO Hakra 4R
15:45 – 16:00	Announcement of Next Day's Program	Mr. Naeem, Leader FO Hakra 4-R
		IIMI-Pakistan
		Group Leaders
		Workshop Secretary

SECOND DAY: CHIEF GUEST MANAGING DIRECTOR BIDA

09:00 - 09:05	Recitation of Holy Quran	
09:05 – 09:15	Remarks	Dr. S.A. Prathapar
09:15 – 09:25	Address	Director IIMI-Pakistan
09:25 – 09:40	Formation Process of FO in Punjab, Experiences from Hakra 4-R Distributary	D.G. Agriculture
09:40 – 09:55	Institutional Reforms, Experiences from Sindh	Mr. Abdul Hameed
09:55 – 10:10	Achievement of FO in Sindh	Social Organizer, IIMI
10:10 – 10:25	Effectiveness of Organizational Structure in Sindh	Dr. M. Yamin Memon
10:25 – 10:40	FO Experience in Balochistan	TL IIMI Hyderabad
10:40 – 11:10	Group Discussion on "Leadership Qualities and Representative Structure in Balochistan"	FO Leader
11:10 – 11:40	Why Participatory Reforms Results from Other Countries of the World	FO Leader
11:40 – 11:45	Request by the M.D. BIDA to Chief Minister Balochistan for Formal Announcement of Area Water Board of Balochistan	P.D. OFWM
11:45 – 12:15	Closing Address	Mr. Waheed-uz-Zaman
12:15	Lunch	Chief Minister