Social Mobilization for Poverty Alleviation: Experience and Lessons from Small Dam Areas in Pakistan

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Today, almost one-third of the population in Pakistan is poor. This translates into 46 million people currently living below the poverty line. At the beginning of the 1990s, one in five families was living in poverty, however, this proportion has increased to one in three in late 1990s. Overall, the incidence of poverty has increased in the last decade. The incidence of poverty varies substantially across Pakistan, with poverty being significantly higher in rural areas. Pockets of extreme poverty, in which over half of the population lives, exist in rural Sindh and Baluchistan. Poverty tends to be concentrated in large families that have few earners and high dependency ratios; households in which the head of the household is illiterate or has only primary education and is under employed; and households that do not own assets.

BACKGROUND OF THE PROJECT

The Pothwar area is characterized by deteriorating land resources and fragmented landholdings with limited water resources. The land tenure system in the area is mainly dominated by small owner-operated units with the average farm size between 3.5 and 4.5 hectares which is further declining on account of population pressure and inheritance customs. The rain-fed farmers in Pothwar area are under great income stress as yields are very low on account of shortage of water and age-old agricultural practices.

The International Water Management Institute (IWMI, formerly IIMI), in collaboration with the Water Resources Research Institute (WRRI) of the National Agricultural Research Center (NARC) of Pakistan and the Small Dams Organization of the Punjab Irrigation and Power Department, conducted an action research program on "Social Organization for Improved System Management and Sustainable Irrigated Agriculture in Small Dams" from April 1996 to March 1999. The project was funded by the Department for International Development (formerly ODA) of the UK through its Competitive Research Facility (formerly Holdback Facility). The program aimed to test the potential for improved irrigation systems management and command area development in small dams in the Punjab Province through the involvement of water user organizations at two pilot sites.

IWMI's social organization program in the small dams area was motivated by two considerations. First, the 31 dams systems in the Punjab Province experience significant constraints, which impede the successful establishment of irrigated agriculture in the rainfed tract.

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- After the construction of the dams and irrigation channels, further physical improvement, command area development or institutional development activities were not carried out.
- Farmers were not successfully adopting adequate irrigation practices.
- A system of rules for the coordinated allocation and distribution of water was not developed.
- Less than 30 percent of the total command area was irrigated.
- Erosion in the catchment area causes deteriorating storage capacity of the reservoirs due to heavy sediment load.

Second, Pakistan currently seeks to implement a comprehensive institutional reform of the irrigation and drainage sector, and the small dams systems were identified as suitable sites to test new institutional arrangements.

Pakistan's irrigation system is characterized by a persistently low return in investment (World Bank 1994). The deterioration of physical infrastructure, environmental decline, an unfavorable ratio of costs to revenues, and unreliable, inefficient water delivery are considered typical problems. As in the case of small dams, the performance of irrigation systems generally remains low, despite major technical development efforts. The causes of such performance deficits are identified as institutional in nature. For that reason, solutions are sought through institutional reforms.

The participatory management of water resources is a central component of globally tested reform models, where rights and responsibilities for the management of local water supply subsystems are transferred to organized water users. Participatory irrigation management is being promoted by irrigation management experts, research institutes and non-governmental organizations worldwide, and has been adopted by several countries in their institutional reforms.

The major basic research questions were:

- What are the causes of the present low level of performance of the small dams in the Punjab Province of Pakistan?
- Can this situation be remedied and the performance improved by organizing water users so that they would assume greater responsibilities for the operation and maintenance of the small dam systems?
- To what extent can this strategy improve agricultural production in the small dam command area?
- What is the most appropriate method of organizing water users under the conditions prevailing in the small dam command area?

Following the conceptual logic of action research, these keys research questions were translated into five specific project objectives, the implementation of which would yield comprehensive data to answer the key research questions. The projective objectives were as follows:

- 1. Identify the extent of current problems related to the system of management and command area development.
- 2. Facilitate the formation of appropriate water user organization in each of the selected small dam pilot area.
- 3. Assist the organizations to become as functional as possible in the management of operation and maintenance, as well as in command area development, with an emphasis on improved irrigated agricultural practices.
- 4. Develop methodologies for water user organizations under the given technical, socioeconomic and institutional conditions.
- 5. Assess the viability of these chosen social organization strategies and their shortterm effects on the operation and maintenance of small dams systems and on their command area development.

APPROACH

The approach of the IWMI project team to the task of the social organization of water users at the small dams entailed the following salient components.

- The organizing process itself is participatory, as the water users themselves decide on the form, structure and functions of their organizations. All decisions regarding activities are to be taken by the members.
- The process of organization needs to be slow and follow a series of steps in order to establish rapport between farmers and facilitators. Farmers tend to be suspicious of outside interventions as a result of difficult experiences with government agency personnel and previous development projects. The step-wise iterative process strives to develop mutual trust, information change, consultation for consensus, development of options and implementation of an appropriate organization design.
- The incentives for social organization would be primarily non-physical and nonmonetary. The project experiences in the past show that monetary or material incentives are merely temporary and fail to generate sustained organizational efforts among project beneficiaries. The action research approach seeks to motivate farmer participation by convincing them of the benefits of organized

collective action, such as improved water delivery, equitable distribution, improved agriculture, and empowerment.

During a detailed socioeconomic survey of the project followings problems were identified (Cheema and Bandaragoda 1997).

- Some services essential to mobilization activity, such as communication, transport and banking are restricted.
- Predominance of smallholders and lack of experience with irrigated agriculture may limit motivation to use innovative agricultural practices.
- The relatively low level of education and high number of illiterate farmers may constrain their ability to manage a water user organization.
- Experience among farmers in collective action was low and culture of organizational behavior for management of resources was scarcely developed, except in the religious sphere.
- The majority of farmers favored traditional crops, such as wheat, as a means of basic food security. They were relatively unfamiliar with irrigated agricultural practices. If reliable water supply could be assured, farmers showed an interest in combined subsistence and cash crops.
- Crop yields were generally below national average.
- The actual irrigated area was far below the anticipated culturable command area due to insufficient command area development, as well as lack of rational and equitable distribution of water.
- Design, construction, operation and maintenance of the small dam irrigation systems were deficient. The small dam systems were not managed through collective action i.e., participatory irrigation management.

METHODOLOGY AND PRACTICE OF SOCIAL MOBILIZATION

The following were the main features of the methodology used in the project.

- Participatory approach;
- Slow step-wise process;
- Small field team of social organizers;
- Involvement of community based volunteers; and
- Non-physical incentive.

PHASES OF STEP-WISE PROCESS

Support Mobilization Phase

Step-wise process used in the project was originally provided in the article by Skobergoe and his associates (1993). Support mobilization phase refers to the establishment of institutional arrangements and methods in project activities in collaboration with the partners. This includes site selection, training and deployment of social organizers, start of project implementation coordination committee (PICC). Based on the criteria laid down in the Inception Report, three sites were chosen at Mirwal, Shahpur and Kot Raja Dams.

Three social organizers, recruited for the project, were trained at the IWMI's office in Lahore and Field Station in Haroonabad, where social organization activities are carried out. Initial meetings between IWMI staff and representatives from WRRI, OFWM, SDO, ABAD and Agricultural Extension Directorate (AED) took place during this phase to discuss project concepts, site selection and potential areas of collaboration.

The project implementation coordination committee (PICC) was constituted in 1998 with the participation of WRRI, ABAD, OFWM, SDO, AED and the water user organizations of Mirwal and Shahpur small dams.

DIAGNOSTIC ANALYSIS PHASE

This involves collection of detailed socioeconomic and technical information through the participation of key informants. WRRI and IWMI staff conducted a detail problem analysis using various research methods, such as walk-through surveys, socioeconomic and technical baseline surveys (WRRI 1997), and informal meetings with key informants. During this phase community based Social Organization Volunteers (SOVs) were sought and trained. These members of the communities were found to be valuable links with the farmers. Most SOVs were farmers with small to medium-size holdings, and school teachers or unemployed educated youth willing to gain experience in a social organization. A training need assessment was commissioned from ActionAid Pakistan (1998), which identified needs in areas of health, agriculture, livestock, income generation, insfrastructure and education.

THE ORGANIZATIONAL DEVELOPMENT PHASE

This follows five dialogic steps involving various types of meetings, which progressively intensify interactions with and among farmers, involving increasingly large number of participants. In this phase of social organization, five dialogic steps were followed.

- Familiarization meetings;
- Rapport building meetings;
- Consultation meeting;
- Selection meeting; and
- Selection of WUO office bearers.

THE ORGANIZATIONAL PHASE

This involves further training and development of plans of operation and maintenance as well as command area development, based on a detailed assessment of the problems on the ground. Collaborative activities with partners in the irrigation and agriculture sectors were initiated and carried out. In the course of organizational activities, the WUOs established their offices, opened bank accounts, raised funds from among their membership, held monthly meetings and kept minutes as well as other organizational records. IWMI staff assisted the leadership in the WUOs in all these activities. The WUOs drafted their bylaws with the assistance of IWMI staff.

Most importantly, the WUOs in Mirwal and Shahpur dams undertook a number of collaborative activities with government agencies to improve the operation and maintenance of the irrigation systems and to develop their command areas.

Farmers' organizations were successfully established by the IWMI staff with the active collaboration of WRRI and SDO staff. Besides training of farmers and the office bearers, the collaboration activities in operation and maintenance of irrigation systems and in command area development were undertaken successfully. This resulted in equitable water distribution among farmers, more cropped area under irrigation, improved cropping pattern (more cash crops), higher yield of wheat crop, reduction in water disputes etc.

PROJECT INTERVENTIONS AND EXPECTED IMPACTS

The project inception report (IIMI 1996) provides a framework for the analysis of key project interventions and expected impacts.

CONFLICT RESOLUTION

Agreed farmer-run mechanisms for discussion of land and water related issues and conflicts were agreed under the project. Total number of disputes appeared during the project period was 39. The proportion of disputes resolved through agreed mechanism was 26 i.e., 66 percent.

The conflict on water share at the distribution point of the main channel of Shahpur Dam was resolved amicably by the timely intervention of IWMI staff that saved farmers from both sides of the channel, that is RBC and LBC, from a possible blood shed. Depending upon the land on RBC, the share of water was 60 percent, while LBC has a share of water equivalent to 40 percent. But the situation on March 30, 1998 was just the opposite. After farmers from both command areas were satisfied with the sufficiency of the new distribution regime, a permanent weir was installed. IWMI provided the equipment, expertise and financial resources, while SDO sanctioned the process and provided a mason to construct the permanent weir. Measured channel flows have been changed from 2.67 cusecs for RBC and 4.01 cusecs for LBC before March 31, 1998 to 4.08 cusecs for RBC and 2.60 cusecs for LBC from April 1, 1998. For details see table 1.

| Channel | Before | After | |
|---------|------------------|-----------------|--|
| | (March 30, 1998) | (April 1, 1998) | |
| RBC | 2.67 | 4.08 | |
| LBC | 4.01 | 2.60 | |

Table 1.Water distribution (cfs) between RBC and LBC at Shahpur Dam.

OPERATION AND MAINTENANCE

IWMI agreed to finance the essential outstanding repairs of the LBC and some watercourses with the labor power contributed by WUO members. Although IWMI generally avoid the provision of material incentives for organizing farmers, the exception was considered vital for the success of the project. The alterations of the flow regime accepted by LBC cultivators reduced their apportionment, and therefore, required that their subsystem be well maintained to ensure reliable water delivery throughout the branch canal. The rehabilitation of the irrigation systems at Shahpur Dam during 1998 cost the government Rs. 122,000. IWMI contributed Rs. 57,814 and farmers contributed Rs.52,650 as labor cost. Farmers also received training in operation and maintenance of irrigation facilities.

LAND USE PATTERN

The water user organization attended to land preparation in the command area. This resulted in increasing the area under irrigation. Area under irrigation during rabi seasons of 1997/98 and 1998/1999 increased from 140 to 220 acres in the Shahpur Dam command area i.e., 57 percent. For the Mirwal Dam command area the increase was from 180 to 331 acres i.e., 64 percent. A comparison of the 1997 and 1998 kharif seasons showed a slight decline of 5-6.5 percent, respectively (table 2). As a result, the actual irrigated area, when compared to CCA, has overall increased from 11 to 18 percent in Shahpur Dam and from 17 to 26 percent

in Mirwal Dam. Although it still falls short of the assumed irrigation potential, gains were considerable. Further increases in irrigated area were mainly dependent on land leveling and the extension of the existing irrigation system network, both of which are costly and dependent on sufficient support services from government agencies.

| Table 2. Comparison og | f pre- and | post-improvement | cropped areas | (acres). |
|------------------------|------------|------------------|---------------|----------|
|------------------------|------------|------------------|---------------|----------|

| | Kharif | | | Rabi | | |
|------------|--------|------|--------|---------|---------|-------|
| | 1997 | 1998 | Trend | 1997-98 | 1998-99 | Trend |
| Shahpur | | | | | | |
| (CCA=1231) | | | | | | |
| | 140 | 133 | -5% | 140 | 220 | 57% |
| Mirwal | | | | | | |
| (CCA=1051) | 184 | 172 | -6.52% | 180 | 331 | 84% |

FARMER'S TRAINING IN IRRIGATED AGRICULTURE AND IN AGRICULTURAL PRACTICES

The farmers were trained in irrigated agriculture and agricultural practices to shift their practice from barani land cultivation to irrigated agriculture i.e., use of high yield varieties, fertilizers and pesticides. This resulted in an increase in yield per acre of wheat by 34 percent between 1996/97 and 1997/98. During this period, fertilizer use per acre increased by 14 percent.

EQUITY IN WATER DISTRIBUTION

IWMI staff assisted the WUOs to develop water rights and related allocation rules and shift from adhoc water distribution to area-proportional allocation. This helped in improving equity in water distribution at the branch canal level. Revised warabandi was accepted and partially implemented at the Mirwal and Shahpur pilot sites.

CROPPING PATTERN

With the assistance of IWMI staff, farmers in the project areas changed the cropping pattern from growing traditional crops to cash crops even where dam water was available. With the

availability of reliable dam water, farmers started growing cash crops like, citrus plants, vegetables, sugarcane etc.

CONCLUSIONS

The project lasted for about three years, starting from April 1996 to March 1999. During the project period, with a small team of IWMI staff, the achievements were commendable. The method used in the project was participatory at every phase of the project.

With the successful formation of WUOs at the project sites, not only the water and land conflicts were reduced, it was also possible for farmers to improve their socioeconomic status and increase their financial resources by bringing more acreage under irrigation and improving their cropping pattern. Farmers' training in irrigated agriculture helped in improving distribution of water, in terms of equity and reliability, and in improving operation and maintenance of water channels. Overall, the project had positive impacts in terms of reducing poverty in the project area.

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