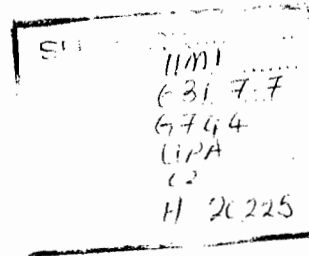


IRMU RESEARCH PAPER



Monitoring Farmers' Involvement in Rehabilitation: Phase II
Farmer Participation in Rehabilitation: Process and Impacts

W.J.J. Upasena



IRRIGATION RESEARCH MANAGEMENT UNIT
IRRIGATION DEPARTMENT, SRI LANKA
AND
SRI LANKA NATIONAL PROGRAM
INTERNATIONAL IRRIGATION MANAGEMENT INSTITUTE

Contents

Acronyms	v
1.Executive Summary	vii
2. Introduction	1
Goals of Farmer Participation.	1
3. Objectives.....	3
4. Method	5
Sample	6
5. Literature review	9
6. Results	11
Ordinary Farmers	11
Sample Characteristics.....	11
Farmer Organization (FO).....	12
Rehabilitation Planning and Design.....	17
Ten Percent Contribution	18
Construction Contracting	19
Construction Supervision.....	19
Turnover.....	20
Farmer Organization Office Bearers (FOOB).....	20
Sample Characteristics.....	20
Farmer Organizations (FOs)	21
Rehabilitation Planning and Design.....	27
Ten Percent Contribution	29
Construction Contracting	30
Construction Supervision.....	32
Turnover.....	33
Institutional Development Officers (Divisional Officers of the DAS)	34
Sample Characteristics.....	34
Rehabilitation Planning and Design.....	36
Ten Percent Contribution	38
Construction Contracting	39
Construction Supervision.....	39
Turnover.....	39
Institutional Organizers (IO).....	40
Sample Characteristics.....	40

Farmer Organization	40
Farmer Participation in Rehabilitation	43
Turnover	45
Irrigation Officers (Technical Assistants [TAs])	45
Sample Characteristics	45
Irrigation and Agriculture Situation of the Scheme	45
Rehabilitation Planning and Design.....	47
Ten Percent Contribution	49
Construction Contracting	49
Construction Supervision.....	50
Turnover	51
7. Conclusion.....	53
Farmer Organization	53
Rehabilitation Planning and Design.....	55
Ten Percent Contribution	56
Construction Contracts.....	56
Construction Supervision	57
Turnover	57
8. Bibliography.....	59

Acronyms

AGM	-	Annual General Meeting
APT	-	Agricultural Planning Team
ASC	-	Agrarian Services Center
DAS	-	Department of Agrarian Services
DC	-	Distributary Canal
DO	-	Divisional Officer
EEC	-	European Economic Commission
FC	-	Field Canal
FCG	-	Field Canal Group
FO	-	Farmer Organization
FOOB	-	Farmer Organization Office Bearers
FR	-	Farmer Representatives
GM	-	General Meeting
GS	-	<i>Grama Sevaka</i>
ID	-	Irrigation Department
IDA	-	International Development Agency
IIMI	-	International Irrigation Management Institute
IMD	-	Irrigation Management Division
IMPSA-		Irrigation Management Policy Support Activity
INMAS-		Integrated Management of irrigation Systems
IO	-	Institutional Organizer
IRMU	-	Irrigation Research Management Unit
MC	-	Main Canal
MFIR	-	Monitoring Farmers Involvement in Rehabilitation
MIRP	-	Major Irrigation Rehabilitation Project
NGO	-	Non Governmental Organization
NIRP	-	National; Irrigation Rehabilitation Project
O&M	-	Operation & Maintenance
OB	-	Office Bearer
OFC	-	Other Field Crops
PEU	-	Provincial Engineering Unit
PM	-	Participatory Management
PMC	-	Project Management Committee
RRA	-	Rural Rapid Appraisal
SLFO	-	Sri Lanka Field Operation
TA	-	Technical Assistant
TIMP	-	Tank Irrigation Modernization Project
VIRP	-	Village Irrigation Rehabilitation Project

Executive Summary

PHASE II OF the study on Farmer Participation in Rehabilitation was conducted in 20 National Irrigation Rehabilitation Program (NIRP) schemes--15 minor and 5 medium. In this study, 23 Institutional Organizers (IOs), 20 Technical Assistants (TAs), 19 Divisional Officers (DOs) of the Department of Agrarian Services (DAS), 49 Farmer Organization (FO) office bearers (OBs) and 448 ordinary farmers were interviewed separately using five structured questionnaires.

Awareness of the sample of the FO is at a satisfactory level and all the FOs have been registered in the DAS. Holding meetings and farmers attendance in the meetings were also at a higher level, probably because rehabilitation was going on in almost all the schemes. According to the IOs, existing structures of the FOs are appropriate for system management. However, the activities of the FOs across the sample vary. Some are performed better while some are not. But the overall opinion is on the positive side. FOs have varied and vast funds. There are rules in the FOs governing funds. It is not necessary to get approval from the agency officers to withdraw funds from the bank. Lack of cooperation from farmers and the agencies, lack of resources, lack of interest of economically powerful farmers and agency officers, lack of coordination between agencies, lack of knowledge, and political problems are reported as barriers in achieving benefits from the FOs.

Help from the agency depends upon what agency is involved in implementing the rehabilitation program. DAS is in the highest place as they are involved even in registering FOs. Farmers are satisfied with IO assistance. DOs are not satisfied with IOs in the medium schemes. These IOs are appointed by the Irrigation Department (ID) but coordination with the ID is less.

Farmer participation in rehabilitation planning and design was at a satisfactory level. Operation and maintenance (O&M) plans after rehabilitation had not been discussed in the planning meetings. Farmers' suggestions were included in the plans. In some places, important items suggested by the farmers had not been incorporated into plans due mainly to lack of funds, NIRP rules and technical reasons. At the ratification meetings, FOs plan to contribute 10 percent as part of the overall planning process. Even though they have problems in getting this work done, they manage to complete it. Negligence of the short-term farmers and difficulties in enforcing FO rules against defaulters are the major problems.

Sub-contracting the construction contracts taken by FOs to outsiders or to members of the FO is evident. Although it is said that FOs manage it as a unit, a few able members do it on sub-contracts. The number of farmers who did contract works is very low. Lack of knowledge and experience, lack of resources and management abilities are the problems faced by FOs in construction contracting. However, agencies fully support them to achieve quality work.

FOs were involved in construction supervision with the help of agencies which ultimately helped improve the quality of work. Farmers expressed their willingness to take over O&M of the schemes and agency officers confirmed it. When the active implementation of NIRP commenced it was able to achieve more with farmer participation in rehabilitation. However, the sustainability of the FOs is still in question. Post-project evaluation will provide answers for that and with due will and commitment, these are not unachievable tasks for the FOs.

Executive Summary

PHASE II OF the study on Farmer Participation in Rehabilitation was conducted in 20 National Irrigation Rehabilitation Program (NIRP) schemes--15 minor and 5 medium. In this study, 23 Institutional Organizers (IOs), 20 Technical Assistants (TAs), 19 Divisional Officers (DOs) of the Department of Agrarian Services (DAS), 49 Farmer Organization (FO) office bearers (OBs) and 448 ordinary farmers were interviewed separately using five structured questionnaires.

Awareness of the sample of the FO is at a satisfactory level and all the FOs have been registered in the DAS. Holding meetings and farmers attendance in the meetings were also at a higher level, probably because rehabilitation was going on in almost all the schemes. According to the IOs, existing structures of the FOs are appropriate for system management. However, the activities of the FOs across the sample vary. Some are performed better while some are not. But the overall opinion is on the positive side. FOs have varied and vast funds. There are rules in the FOs governing funds. It is not necessary to get approval from the agency officers to withdraw funds from the bank. Lack of cooperation from farmers and the agencies, lack of resources, lack of interest of economically powerful farmers and agency officers, lack of coordination between agencies, lack of knowledge, and political problems are reported as barriers in achieving benefits from the FOs.

Help from the agency depends upon what agency is involved in implementing the rehabilitation program. DAS is in the highest place as they are involved even in registering FOs. Farmers are satisfied with IO assistance. DOs are not satisfied with IOs in the medium schemes. These IOs are appointed by the Irrigation Department (ID) but coordination with the ID is less.

Farmer participation in rehabilitation planning and design was at a satisfactory level. Operation and maintenance (O&M) plans after rehabilitation had not been discussed in the planning meetings. Farmers' suggestions were included in the plans. In some places, important items suggested by the farmers had not been incorporated into plans due mainly to lack of funds, NIRP rules and technical reasons. At the ratification meetings, FOs plan to contribute 10 percent as part of the overall planning process. Even though they have problems in getting this work done, they manage to complete it. Negligence of the short-term farmers and difficulties in enforcing FO rules against defaulters are the major problems.

Sub-contracting the construction contracts taken by FOs to outsiders or to members of the FO is evident. Although it is said that FOs manage it as a unit, a few able members do it on sub-contracts. The number of farmers who did contract works is very low. Lack of knowledge and experience, lack of resources and management abilities are the problems faced by FOs in construction contracting. However, agencies fully support them to achieve quality work.

FOs were involved in construction supervision with the help of agencies which ultimately helped improve the quality of work. Farmers expressed their willingness to take over O&M of the schemes and agency officers confirmed it. When the active implementation of NIRP commenced it was able to achieve more with farmer participation in rehabilitation. However, the sustainability of the FOs is still in question. Post-project evaluation will provide answers for that and with due will and commitment, these are not unachievable tasks for the FOs.

Introduction

THE NATIONAL IRRIGATION Rehabilitation Project (NIRP) is one of the major development projects undertaken by the Government of Sri Lanka which was proposed to be implemented within a seven- year period starting from 1991. The estimated cost of NIRP is over US\$50 million which is provided from the International Development Agency, the European Union, the World Bank and the Government of Sri Lanka. Although implementation was proposed to be begun in 1991, actual implementation began only in 1993. Therefore, the project period will go beyond 1997. The NIRP aims to rehabilitate 1,000 minor schemes and 60 major/medium schemes. A major aspect of this project compared to previous rehabilitation projects is to get farmers' participation in the rehabilitation process and to hand over the O&M responsibilities of the rehabilitated schemes to the farmers. Therefore, establishing FOs in the schemes selected for rehabilitation is a vital need in achieving this objective (World Bank 1991).

Goals of Farmer Participation

Goals of farmer participation in rehabilitation can be defined in two ways:

- achieving better rehabilitation which means cost- effectiveness and better quality
- preparing farmers for management of O&M of the rehabilitated schemes by strengthening FOs through group work experiences and providing funds, giving technical knowledge needed for maintenance, and creating a sense of ownership among the farmers

In achieving these goals, NIRP expects to incorporate farmers' suggestions in rehabilitation planning and design to assure that rehabilitation would do exactly what is required by farmers and not to impose bureaucratic needs, as has happened in previous projects which were unable to achieve expected results and were criticized by farmers. In implementing rehabilitation, NIRP expects farmers to contribute 10 percent of the base cost of rehabilitation which would help achieve the goal of cost-effectiveness and increase group morale of the farmers required for future O&M activities to be successful. They can also actively engage in rehabilitation having construction contracts which simultaneously give them an opportunity to raise funds for the FO, allow them both to have some knowledge and experience for handling future O&M activities and to achieve better quality of work. The implementing agencies provide them with training for these activities and continue support to achieve their targets. FOs can help the implementing agencies in supervision of the work done by private contractors to ascertain the quality which should be to the satisfaction of the FO. Agencies are supposed to help FOs in preparing schedules and procedures for supervisory activities and to respond to reports of the FO to rectify any errors.

At the initial phase of implementation, NIRP wanted to have feedback from the work that was already done; the IRMU of the ID in collaboration with IIMI-SLFO launched a study to monitor farmers' involvement in rehabilitation at NIRP's request. In latter part of 1993, a rapid rural appraisal (RRA) was carried out as the first phase of this study in five selected schemes being rehabilitated under NIRP. The outcome of this phase suggested the need for further investigation in some areas to have full understanding of the farmer participation in rehabilitation. As a result of this, Phase II was designed and carried out to cover a larger sample which aimed at a comprehensive analysis of the problem with a better database.

Objectives

THE OBJECTIVES OF the study remain the as same as stated in Phase I. The overall goal of the study is to review NIRP practices with respect to the development of sustainable FOs and to suggest suitable options wherever applicable.

The objectives of this study are:

- to evaluate the strength and preparedness of the farmer organizations
- to assess farmer involvement in rehabilitation planning and implementation
- to evaluate the contributions of farmer participation in rehabilitation to prepare the FOs for taking over O&M responsibilities after rehabilitation with regard to a) organizational management abilities, b) technical knowledge concerning O&M, and c) financial standing and management abilities
- to determine the constraints for effective farmer participation in rehabilitation in the sample schemes

Method

THE METHOD USED to collect information is different from that adopted for Phase I. A questionnaire survey in a larger sample was adopted, which aimed to have a better database for comprehensive analyses contrary to the RRA carried out in a smaller sample in Phase I. Five structured questionnaires were used to collect information from the following agents in the sample schemes.

- Irrigation Officers (TA responsible for implementing the rehabilitation)
- Institutional Development Officers (DO of the DAS, who is in-charge of the agrarian division to which the scheme belongs)
- IO in the scheme
- FOOBs—maximum two
- Ordinary farmers—a representative sample in each scheme

Agents from first four categories were individually interviewed by the research officers in the institute from July to December 1994 and a sample of the ordinary farmers was interviewed by the trained and experienced investigators who were deployed in the field in the fourth quarter of 1994.

Table 1. Sample of the ordinary farmers in the sample schemes.

Scheme	District	Agency	ASC	Sample Size
<i>Minor Schemes</i>				
Haltota Anicut	Kalutara	ID/Kalutara	Millaniya	15
Halpanbissa Anicut	Galle	DAS	Baddegama	17
Kimbulawala Anicut	Galle	DAS	Niyagama	17
Ittawala Anicut				
Scheme	Matara	ID/Matara	Kananke	20
Palugas Wewa	Hambantota	DAS	Weerawila	10
Aluthwela Amuna	Monaragala	DAS	Dambagalla	15
Dalawagalla Amuna	Monaragala	ID/Bibile	Medagama	15
Kirimetiya Wewa	Badulla	ID/Mapakada	Ridimaliyadda	15
Kolonyaya Pahala				
Anicut	Kandy	PEU	Morayaya	10
Karambewa Tank	Anuradhapura	PEU	Gambirisgaswewa	21
Gonewa Tank	Anuradhapura	PEU	Kallanchiya	21
Elapath Wewa	Anuradhapura	PEU	Galenbindunuwewa	15
Paluwaddana Wewa	Polonnaruwa	DAS	Hingurakgoda	16
Aulegama Wewa	Kurunegala	ID/Nikaweratiya	Mahagirilla	19
Ihala Kadadeka Wewa	Kurunegala	ID/Galgamuwa	Moragollagama	18
<i>Medium Schemes</i>				
Uyanwatta Tank	Kalutara	ID/Kalutara	Bandaragama	41
Borale Tank	Matara	ID/Matara	Weligama	41
Buttala	Monaragala	ID/Monaragala	Buttala	41
Dewahuwa Tank	Matale	ID/Dambulla	Dewahuwa	61
Erige Oya	Polonnaruwa	ID/Minneriya	Hingurakgoda	20
				448

Note: ASC=Agrarian Service Centre.

Sample

Fifteen minor schemes and five medium schemes were selected using random numbers from a list of 157 minor schemes and from a list of 42 major/medium schemes received at NIRP where rehabilitation was initiated by mid-1993. The sample of ordinary farmers in each scheme was decided on the basis of number of farmer families in the schemes. Criteria for selecting the number are as follows:

As the maximum number of farmer families in the sample schemes was around 100, 10 farmers were selected if this number was below 33, 15 if the number was between 33 and 66, and 20 farmers if the number was above 66. Table 1 gives some basic information of the distribution and size of the sample. In

medium schemes where the number of FOs is more than one compared to the single FO in minor schemes, 2 to 3 FOs were selected representatively and the sample of farmers was drawn randomly according to the above criteria.

The total sample in each category is as follows;

Irrigation Officers - TA	20
Institutional Development Officers - IDO	19
(one represent two schemes)	
Institutional Organizer - IO	21
(Borale and Dewahuwa 2, Uyanwatta 0)	
Farmer Organization OBs - FOOB	49
Ordinary Farmers	448

Literature Review

THE UNSATISFACTORY O&M situation has led the irrigation schemes to be deteriorated up to the point where rehabilitation works are necessary. Several attempts have been made by the government in recent years to address this issue through many programs such as INMAS of IMD and APT approach of DAS, etc. These programs have been most successful when combined with rehabilitation or modernization works such as MIRP and VIRP. Experience also indicates that close involvement of the beneficiaries in the planning and implementation of rehabilitation and improvement works is an important requirement for success (World Bank 1991). Active participation of the beneficiaries from the planning stage of rehabilitation is emphasized in the evaluation of the VIRP too (TEAMS 1992). The encouraging results of these programs and the failure in the collection of O&M fees for major irrigation projects prompted the government in 1988 to adopt a new management policy for the irrigation sector which increases the participation and responsibilities of the farmers and reduces the role of the public sector (World bank 1991). By the end of the 1990s, farmers will be responsible for 100 percent of the O&M cost of the portions of irrigation systems under their management. During the 1990s, based on the lessons learned in the 1980s, rehabilitation and improvement projects will be implemented so as to be cost-effective, respond to the real needs of farmers (i.e., demand-driven), contribute to developing farmers' commitment and sense of ownership toward their systems, and to act as a vehicle for building and strengthening FOs which would take over increasing management responsibility (IMPISA 1991).

Participatory management has now been accepted as an appropriate technique for improving the performance of irrigation schemes. At present, farmer participation is defined as a transferring of the decision-making process or system development and management to farmers (IIMI 1990a). This has been the practice even in ancient times when customary laws and regulations had been adopted in managing irrigation schemes (Abeywickrama 1986; Paranavithana 1958). Proper maintenance of irrigation schemes by farmers was the principle consideration which motivated the colonial government to revive ancient customs relating to rice cultivation. Participatory management has been legislated through the Irrigation Ordinance with the provision for *kanna* meetings (Alwis 1986). But the sole objective of the beneficiary participation is not achieved through this process. At present, the state provides direct and indirect assistance to meet O&M costs of the irrigation schemes and spends a substantial amount of money each year. The O&M of minor schemes are performed with the participation of the beneficiaries. But, it was the understanding that, unlike in the case of minor village schemes, participatory management in major schemes was difficult. But in the course of time, examples like *Kimbulwana* proved that it is feasible to develop participatory management with sustained effort and an enlightened leadership (Abeywickrama 1986). The lessons from the Gal Oya farmer organization program provide guidelines in developing FOs (Perera 1986). The experiences of TIMP have also emphasized farmer involvement in the projects leading to improvement of the schemes. There is also the suggestion to have a suitable institutional mechanism at the time of planning and implementation of the project and to increase the number of *vel vidanes* (farmer leaders, one for 20 to 30 farmers) to facilitate farmer involvement (Abeysekara 1986).

The experiences in Nepal have revealed that the FOs within a system are not the same throughout the system. They have a location-specific nature of action and little interactions (Shrestha 1988). But where the organizations are strong, farmers at the head end cannot influence the share of water of the tail- end farmers (Martin and Yoder 1988). Further, to perform effectively, FOs should not remain static. To adapt to

the changing needs of the system, an FO, its rules, leaders, and structure should also be adapted to accommodate new situations (Pradan, Giri and Tiwari 1988). Experiences from India show that building up a viable FO to take responsibility for managing the small irrigation tank systems may be complicated and extremely delicate, especially in the heterogeneous caste society found in many Indian villages. But there is a general awareness among the farming community of the need to unite on common issues such as acquisition of adequate water in their tanks (Sakthivadivel and Killapiran 1990). Many studies on farmer participation in irrigation management around the world have emphasized the positive results achieved through the active participation of the beneficiaries in the process of design and construction (Lubis 1990; IIMI 1990b). FOs can execute the work with the assistance of the government. Contractors should be kept out of these items of work (Lubis 1990; TEAMS 1992). Farmer participation varies according to the type of the system management as agency-managed, farmer-managed, or jointly managed (IIMI 1990a; Pradhan 1989). For the best results, FOs should be strengthened with the assistance of the IOs who help attain the following benefits (IIMI 1990a):

- cohesiveness among farmers
- reduced social problems leading to irrigation development
- improved equity in water distribution
- greater certainty of water delivery
- enhanced internal resource mobilization to sustain O&M through farmer participation
- increased capital build-up and improved self-reliance

Results

THE RESULTS OF the questionnaire survey are presented in this section. The outcome of the five questionnaires is explained in separate subsections. This section will be followed by the concluding section which discusses and interprets the results of this section.

Ordinary Farmers

Sample Characteristics

Out of 448 farmers interviewed, 244 farmers are from 15 minor schemes and 204 from 5 medium schemes. Twenty females from minor schemes and 15 females from medium schemes have been included in the sample. The educational level of the farmers revealed that in 50 percent of the minor schemes, farmers fall into the category of those who attended school for 6 to 10 years. Only 43 percent of farmers in the medium schemes belongs to this group and 44 percent of them are in the category of those who attended school for 1 to 5 years.

Table 2. Educational level of the sample farmers.

Level of Education	Minor		Medium	
	No.	%	No.	%
No formal education	8	3.3	11	5.4
1-5 years	95	38.9	90	44.1
5-10 years	121	49.6	87	42.6
11-12 years	18	7.4	11	5.4
>12 years	2	0.8	2	1

The main source of income of 90 percent of the sample farmers in both minor and medium schemes is agriculture. Around 16 percent in minor schemes and 11 percent in medium schemes are employed on a salary basis. Of the farmers in both minor and medium schemes 9 percent is involved in trading while 18 percent from minor and 9 percent from medium schemes are involved in some other income-generating activities which are not regular in nature.

The maximum landholding size in minor schemes in both lowland and highland is 10 acres. The minimum size is 0.25 acre in lowlands and 0.15 acre in highlands. In medium schemes, the maximum size in lowland is 5.5 acres while it is 7 acres in highland. The minimum in both lowland and highland is 0.25 acre. In minor and medium schemes 39 percent and 30 percent, respectively, of farmers own less than 1 acre of lowland. In the minor and medium schemes 34 percent and 32 percent, respectively, of farmers own lowland between 1 acre and 2 acres.

Table 3. Sources of income of the sample farmers.

Source	Minor		Medium	
	No.	%	No.	%
a) Agriculture	219	89.8	185	90.7
b) Employment on				
c) a salary basis	40	16.4	23	11.3
d) Trading	23	9.4	18	8.8
e) Unspecified	45	18.4	19	9.3

Table 4. Landholding size.

Acres	Minor				Medium			
	Lowland		Highland		Lowland		Highland	
	No.	%	No.	%	No.	%	No.	%
> 1	95	38.9	116	47.5	61	29.9	101	49.5
1 and 2	83	34.0	64	26.2	65	31.9	51	25.0
2 and 3	21	8.6	10	4.1	26	12.7	45	22.1
3 and 4	4	1.6	5	2.0	17	8.3	1	0.5
> 4	11	4.5	9	3.7	34	16.7	4	2.0
Total	214	87.7	204	100.0	203	99.5	202	99.0

Almost all the farmers in both minor and medium schemes own a piece of land. The location of the plots are well distributed along the canals (head, middle, tail) and well represented in the scheme. However, the farmers' opinions on the operations in the scheme before rehabilitation are varied. In minor schemes 81, 79.5, 55.5 and 43.9 percent said that they get continuous flow for land preparation and crop growth stages, respectively, in both maha and yala while 13.5, 16.45, 23.8, and 36.1 percent said that they get rotational issues. In medium schemes 98, 96.1, 34.3 and 31.9 percent said that they get continuous flow for land preparation and crop growth stages, respectively, in both maha and yala while 0.5, 2.5, 64.2, and 66.7 percent said that they get rotational issues (table 5).

More than 78 percent of farmers in both minor and medium schemes said that irrigation services are fair or good while less than 20 percent reported that it is poor.

Farmer Organization (FO)

About 98 percent of the farmers in minor schemes are aware of the FO. This is only 87 percent for medium schemes. More than 80 percent of the farmers in both minor and medium schemes know the name of the FO. About 90 percent of the sample farmers in the minor schemes are members of the FO while the value for medium schemes is 81 percent. Those who know how much the membership fee in minor schemes is 87 percent while the corresponding figure for medium schemes is 70 percent. Those farmers in minor

schemes who know more or less accurately when the FO was formed comprised 88 percent; the corresponding figure for medium schemes is 78 percent.

Table 5. Types of operations on your channel (before rehabilitation).

	CF	Minor		ROT	%	Medium		ROT	%
		%				CF	%		
a) during maha land preparation	198	81.1		33	13.5	200	98.0	1	0.5
b) during maha crop growth	194	79.5		40	16.4	96	96.1	5	2.5
c) during yala land preparation	135	55.3		58	23.8	70	34.3	131	64.2
d) during yala crop growth	107	43.9		88	36.1	65	31.9	136	66.7

CF = Continuous flow, ROT = Rotational issues.

Farmers indicated the following activities that are done by the FO. Only about 50 percent of the minor scheme farmers responded to the question whether the FO performed in those activities well. However, 75 percent of the medium scheme farmers said that the FO performed those activities at a satisfactory level.

More than 93 percent minor and 98 percent medium farmers said that the FRs are selected by the farmers themselves. According to 94 percent the minor and 84 percent of the medium scheme farmers, OBs are selected by the general membership while according to 12.5 percent the medium scheme farmers said that the OBs are selected by the FRs. However, 92 percent of the medium scheme farmers are satisfied with the present leadership but only 77 percent of the minor farmers said so. More than 75 percent of farmers in both types of schemes confirmed the reasons for their satisfaction with the leadership. These results are summarized in the table 7.

More than 90 percent of the farmers confirmed that they attend the general membership meetings. About 20 percent of the respondents from minor schemes and 17 percent from medium schemes attend committee meetings too. Those farmers who attend committee meetings rarely are 35 percent from minor schemes and 12 percent from medium schemes. Seventy six percent of farmers from minor schemes said that the FOs have funds while about 22 percent of them said they did not know it exactly. In medium schemes only 11 percent responded affirmatively. Sixty seven percent minor farmers said that they are satisfied the way FO handles the funds while 79 percent of medium farmers declared that they are confident of the leaders. Table 8 summarizes the reasons for the dissatisfaction of some farmers with the handling of funds. Farmers pointed out the benefits they received from the FOs (table 9).

Table 6. Activities of the FO indicated by the farmers.

	Minor		Done Well		Medium		Done Well	
	Y	%	Y	%	Y	%	Y	%
a) seasonal planning	224	91.8	121	49.6	190	93.1	171	83.8
b) help operate the system	196	80.3	100	41.0	169	82.8	158	77.5
c) organizes seasonal maintenance	165	67.6	105	43.0	172	84.3	159	77.9
d) work on rehabilitation	196	80.3	120	49.2	168	82.4	142	69.6
e) take construction contracts	129	52.9	85	34.8	98	48.0	92	45.1
f) solve disputes /problems	147	60.2	77	31.6	112	54.9	106	52.0
g) sell inputs	47	19.3	20	8.2	18	8.8	17	8.3
h) facilitate loans	70	28.7	32	13.1	29	14.2	29	14.2
i) marketing	8	11.5	12	4.9	4	2.0	4	2.0
j) nothing	3	1.2	1	0.4	0	0.0	0	0.0
k) don't know	1	0.4	1	0.4	0	0.0	0	0.0

Table 7. Reasons for farmers' satisfaction with the leadership.

	Minor		Medium	
	Y	%	Y	%
a) they solve problems	185	75.8	166	81.4
b) they are honest with regard to funds	162	66.4	151	61.9
c) they support farmers' interests	182	74.6	187	76.6
d) they are not biased toward one segment of the farmers	160	65.6	151	61.9

Note: Y=yes in this table and others.

Table 8. Reasons for some farmers' dissatisfaction with the handling of funds.

	Minor		Medium	
	Y	%	Y	%
a) amount of funds not reported to membership	34	13.9	13	6.4
b) office-bearers use the funds for their own benefit	16	6.6	3	1.5
c) funds not used for the benefit of FO members	29	11.9	12	5.9
d) not responded	208	85.2	190	93.1

Table 9. Benefits from the FOs as indicated by the farmers.

	Minor		Medium	
	Y	%	Y	%
a) rehabilitation of the scheme	219	89.8	192	94.1
b) improved irrigation service	198	81.1	177	86.8
c) resolution of disputes	181	74.2	163	79.9
d) decreased cost of production	59	24.2	125	61.3
e) increased yield and income	52	21.3	86	42.2
f) improved relations with other farmers/better group morale	142	58.2	80	39.2
g) no benefits	14	5.7	4	2.0

There is a Project Management Committee (PMC) in medium schemes which consists of the representatives from all the FOs in the schemes. The need for a PMC does not arise in the case of minor schemes since there is only one FO for each. However, only 34 percent of the medium scheme farmers said that they had a PMC. This low figure was given because the PMC was had not been formed in some medium schemes at the time of the study. The activities of the PMC as given by the farmers are presented in table 10.

Ninety five percent minor and 92 percent medium farmers said that DAS supported the formation of the FO. Sixty two percent minor and 64 percent medium scheme farmers said that the formation of the FO was supported by the ID. Eleven percent minor and 4 percent medium scheme farmers said that the IMD supported it while 11 percent minor and 1.5 percent medium scheme farmers said the support was given by the People's Bank. Those minor scheme farmers who said that it was the GS who helped in forming FO comprised 1.2 percent.

Table 10. Activities of the PMC.

	Medium schemes only		Done well	
	No.	%	No.	%
a) seasonal planning	71	29.1	61	25.0
b) solves irrigation problems	70	28.7	60	24.6
c) plans work on rehabilitation	66	27.0	59	24.2
d) solves agricultural problems	5	2.0	3	1.2
e) don't know	0	0.0	0	0.0

Those minor scheme and medium scheme farmers who are aware of the presence of an IO comprised 94 and 83 percent, respectively. The activities of the IOs as perceived by the farmers are indicated in table 11. More than 80 percent of the farmers in both types of schemes are satisfied with the assistance from the IO.

Table 11. Duties of the IO.

	Minor		Medium	
	No.	%	No.	%
a) organizes meetings of the FOs and PMC	218	89.3	162	79.4
b) trains/advises farmers in O&M	189	77.5	146	71.6
c) trains/advises farmers in rehabilitation	178	73.0	136	66.7
d) trains/advises farmers in other subjects	63	25.8	67	32.8
e) carries messages/information from officers to farmers	157	64.3	161	78.9
f) carries messages/information from farmers to officers	180	73.8	160	78.4
g) audits FO accounts	118	48.4	117	57.4
h) assists FOs solve problems with agencies	89	36.5	141	69.1
i) helps resolve disputes	92	37.7	46	22.5

Rehabilitation Planning and Design

Those farmers from each category of scheme who are aware of the NIRP comprised exactly 97.1 percent. Those minor and medium scheme farmers who received information about FOs from the DO comprised 47 and 67 percent, respectively. According to 31 percent minor scheme farmers and 10 percent medium scheme farmers received the information from the FO itself. Those who received information from the irrigation or agriculture officers comprised 18 percent from both types of schemes. Only about 1 received this information from the communication media. Table 12 summarizes the NIRP activities in the sample schemes.

Table 12. NIRP activities in the sample schemes.

	Major		Medium	
	No.	%	No.	%
a) fix the structures in the system	230	94.3	187	91.7
b) line some channels	211	86.5	179	87.7
c) improve the tank capacity	157	64.3	103	50.5
d) get more water for the scheme	48	19.7	20	9.8
e) turn over O&M responsibilities to farmers	117	48.0	72	35.3
f) don't know	2	0.8	0	0

Those minor scheme and medium scheme farmers who said that the O&M plan was discussed in the planning and design stage of rehabilitation comprised 63 and 55 percent, respectively, while 16 percent minor and 32 percent medium scheme farmers answered negatively. Those who were not aware of this comprised 16 percent minor and 8 percent medium scheme farmers. However, more than 85 percent of the total sample expects that the changes in the O&M plan will improve the irrigation service significantly after rehabilitation. Table 13 summarizes how farmers participated in the planning and design of rehabilitation.

Fifty eight percent minor and 49 percent medium scheme farmers said that they did not have any difficulties in understanding what was discussed at the meetings. Thirty two percent minor and 39 percent medium scheme farmers did not answer the question. Only 10 percent minor and 5 percent medium scheme farmers said that they could not understand the discussions at the meetings.

Table 13. How farmers participated in the planning and design of rehabilitation.

	Major		Medium	
	No.	%	No.	%
a) participated in walk-through survey(s)	131	53.7	80	39.2
b) participated in meetings with engineers/TA s on rehabilitation plans	134	54.9	75	36.8
c) participated in farmer meetings to discuss rehabilitation plans	140	57.4	95	46.6
d) did not participate	61	25.0	83	40.7

Eighty six percent minor and 93 percent medium scheme farmers said that their suggestions were incorporated into the rehabilitation plans. Eighty six percent minor and 95 percent medium scheme farmers are satisfied with the rehabilitation plans. Only 13 percent minor and 2.5 percent medium scheme farmers are not satisfied with the plans. Also only 18 percent minor and 16 percent medium scheme farmers have informed that very important items were not included in the rehabilitation plans. The reasons for noninclusion of these items are given in table 14.

Table 14. Reasons for noninclusion of important items in the plans.

	Major		Medium	
	No.	%	No.	%
a) the engineers said NIRP rules not allow funding these items	3	1.2	0	0.0
b) the engineers said that there was not enough funds	21	8.6	21	10.3
c) the other farmers did not want them	3	1.2	0	0.0
d) don't know	13	5.3	2	1.0

Ten Percent Contribution

Seventy nine percent minor and 74 percent medium scheme farmers said that farmers are contributing to the rehabilitation work. More than 90 percent from both types know that the contribution is 10 percent of the cost. Sixty seven percent minor and 90 percent medium scheme farmers do not know the amount (money value) of the contribution in their schemes. Their contribution is mainly labor for earth works and other works. Seventy percent of both types said that the targets are achieved through individual assignments.

Forty four percent minor and 60 percent medium scheme farmers said one way of getting this work done is by *shramadana*. Seventy nine percent minor and 67 percent medium scheme sample farmers had been involved in these activities by themselves. If they had not attended these activities it was only because the work had not begun at the time of study. Seventy six percent minor and 68 percent medium scheme farmers said that the 10 percent work was completed according to the schedules. Where this work was not completed so, 14 percent minor scheme farmers said that it was due to the difficulties in getting labor. Twenty five percent medium scheme farmers said that the reason for noncompletion was that the work had not begun.

Construction Contracting

Fifty two percent minor and 60 percent medium scheme farmers said that their FO had taken construction contracts. Table 15 explains how they managed to do this work. Twenty nine percent minor and 17 percent medium scheme farmers had been involved in these activities by themselves. Although this is a very minor amount, 12-16 percent have worked as wage laborers in the contract works.

Table 15. The way FOs managed to do contracts.

	Major		Medium	
	No.	%	No.	%
a) taken on subcontract by FO office-bearers	63	25.8	46	22.5
b) subcontracted to outsiders	59	24.2	19	9.3
c) managed by the FO as a unit	81	33.2	72	35.3
d) other (specify)	3	1.2	4	2.0
e) don't know	8	3.3	11	5.4

Sixty eight percent minor and 73 percent medium scheme farmers said that they are satisfied with the work done by the FO. Only 28-29 percent said that the FO made a profit from the contracts. Thirty six percent minor and 30 percent medium scheme farmers were not aware whether the FO made a profit or not.

Construction Supervision

Ninety six percent minor and 66 percent medium scheme farmers informed that the construction work of their schemes had begun. Twenty five percent minor and 34 percent medium scheme farmers said that they underwent a course of training in construction supervision. Although a very small number of farmers responded to the question as to who provided the training it was the ID officers, DAS officers and IOs who had helped train the farmers. Fifty five percent minor and 57 percent medium scheme farmers said that the FO made plans for construction supervision and 54 percent minor and 41 percent medium scheme farmers said that the prepared plans were carried out. Sixty seven percent minor and 53 percent medium scheme farmers said that supervision by the farmers helped improve the quality of the construction work.

Turnover

When farmers were asked whether they wish to take over the O&M responsibility of the schemes after rehabilitation, 94 percent minor and 88 percent medium scheme farmers expressed their willingness to do so and 87 percent from both types expressed the ability of farmers to handle it.

Farmer Organization Office Bearers (FOOB)

Sample Characteristics

Thirty OBs from minor schemes and 19 from medium schemes were interviewed to collect information on the FO activities. Only one female office bearer had been included in the sample. More than 70 percent of them have attended school for 5 to 10 years. Twenty seven percent of them have studied beyond Grade 10. The main source of income is agriculture. Table 16 presents the results about the sources of income of the OBs.

Table 16. Sources of income.

Subject	Minor		Medium	
	No.	%	No.	%
a) Agriculture	28	93.3	19	100.0
b) Salaried employment	5	16.7	2	10.5
c) Trading	1	3.3	0	0.0
d) Other (specify)	6	20.0	2	10.5

Table 17 indicates the composition of OBs in the sample. Sixteen presidents, 17 secretaries, 13 treasurers, 2 vice presidents and 1 co-secretary are in the sample.

Table 17. Composition of the sample.

Subject	Minor		Medium	
	No.	%	No.	%
a) President	10	33.3	6	31.6
b) Secretary	9	30.0	8	42.1
c) Treasurer	10	33.3	3	15.8
d) Vice president	0	0	2	10.5
Co-Secretary	1	3.3	0	0.0

The OBs are not certain about the number of year they have to be in office. In minor schemes 3 percent said that the tenure is for one year, 27 percent that it is for two years, 17 percent that it is for three years and 10 percent that it is for four years. However, 43 percent did not respond to this question. In medium schemes 32 percent said the tenure is for is one year, 32 percent that it is for two years, 15 percent that it is for three years and 5 percent that it is for four years.

The maximum size of landholdings in minor schemes for lowlands is 12 acres while for highlands it is 7 acres. The minimum size in minor schemes for both lowlands and highlands is 0.5 acre. The maximum size in medium schemes for lowlands is 5 acres while for highlands it is 3 acres. The minimum size in medium schemes for both lowlands and highlands is 0.5 acre. Table 18 depicts the distribution of landholding sizes among OBs.

Table 18. Distribution of the landholding sizes.

Group	Minor				Medium			
	Lowland		Highland		Lowland		Highland	
	No.	%	No.	%	No.	%	No.	%
> 1 acre	13	43.3	10	33.3	6	31.6	11	57.9
>1 and 2	8	26.7	9	30.0	5	26.3	6	31.6
>2 and 3	1	3.3	1	3.3	5	26.3	2	10.5
>3 and 4	3	10.0	2	6.7	1	5.3	0	0.0
>4 acres	4	13.3	2	6.7	2	10.5	0	0.0
Total	29	96.7	24	80.0	19	100.0	19	0.0

Seventy three percent OBs in minor schemes and 63 percent in medium schemes privately own their land while 11 percent in medium schemes and 3 percent in minor schemes are permanent tenants. Twenty six percent OBs in medium schemes and 3 percent in minor schemes cultivate rented lands. Of the minor scheme OBs 7 percent cultivated encroached lands. The location of plots well represent the head, middle and tail of the MCs although it does not equally represent the head, middle and tail of the DCs and FCs. The types of operations in the schemes before rehabilitation are summarized in table 19.

Seventy nine percent medium scheme OBs and 37 percent minor scheme OBs said that water is adequate and timely, all the time in their schemes while 26 percent medium and 40 percent minor OBs said that the irrigation services are fair, i.e., although water is adequate much of the time, sometimes it comes late or too little. But 11 percent medium and 20 percent minor OBs reported that often there is not enough water so the irrigation services are poor.

Farmer Organizations (FOs)

Forming FOs in minor schemes commenced in 1989. Except for one medium FO, all other FOs have a constitution and all the FOs have been registered. Ninety percent minor scheme and 84 percent medium scheme OBs reported that their FOs are registered with DAS under Article 56 A of the Agrarian Services

Act. Seven percent minor scheme OBs said their FO is registered under 56 B. One medium scheme OB said it is registered with the ID and one OB in a medium scheme did not know about this.

Table 19. Types of operations on your channel (before rehabilitation).

	Minor				Medium			
	CF	%	ROT	%	CF	%	ROT	%
a) during maha land preparation	21	70.0	3	10.0	19	100.0	0	0.0
b) during maha crop growth	17	56.7	9	30.0	16	84.2	3	15.8
c) during yala land preparation	11	36.7	10	33.3	7	36.8	11	57.9
d) during yala crop growth	7	23.3	14	46.7	5	26.3	13	68.4

CF = Continuous flow; ROT - Rotational issues.

FRs in minor schemes are selected at the AGM. In medium schemes 32 percent said that FRs are selected by field canal groups and 31 percent said it was done at the AGM. The majority said that FRs are selected each year. There are 3-13 OBs in minor schemes including committee members while this number is 4-13 in medium schemes. Fifty three percent minor scheme and 74 percent medium scheme OBs said that there are 5 OBs in the FO. It is possible that they have not included the number of committee members in this counting. These are the president, secretary, treasurer, vice president and co-secretary. Sixty percent minor scheme and 68 percent medium scheme OBs said that all the OBs are FRs. Ninety three percent minor scheme and 68 percent medium scheme OBs said that the OBs are selected by the general membership while 3 percent minor scheme and 26 percent medium scheme OBs said that OBs are selected by the OBs. Eighty percent minor scheme and 68 percent medium scheme OBs said that OBs are selected/re-elected each year. Sixteen percent medium scheme OBs said that this is done every three years. Activities of the FOs as indicated by the OBs are given in table 20.

In minor schemes 60 percent OBs said that the committee meetings (CMs) are held monthly and 20 percent said this is done bimonthly. Three percent of them said that CMs are held once in three months and another 3 percent said that this was done occasionally. Twenty seven percent said that the general meeting (GM) of the FO is held monthly, 20 percent said once in two months and 23 percent said annually. Thirteen percent said that the GM is held seasonally while another 13 percent said it is held occasionally. Seven percent said that the FC group meeting is held monthly. In medium schemes, 79 percent said that the CMs are held monthly, 11 percent said it is held bimonthly and 5 percent said it is held annually. Thirty two percent said that the GM is held monthly, 26 percent that it is done annually, 10 percent that it was done occasionally and 16 percent that it is done once in three months. Twenty one percent said FC group meetings are held monthly while 11 percent said that it was done bimonthly.

Ninety three percent minor scheme and 89 percent medium scheme OBs reported that their FOs have funds which vary from Rs 200.00 to Rs 20,000.00 in minor schemes and from Rs 100.00 to Rs 80,000.00 in medium schemes. Seventeen percent minor scheme and 11 percent medium scheme OBs said that the FO owns a tractor. Seven percent minor scheme and 26 percent medium scheme OBs said that the FO owns some buildings. Sources of income of the FOs are listed in table 21.

Table 20. Activities of the FO as indicated by the OBs.

Activity	Minor		Done well		Medium		Done well	
	No.	%	No.	%	No.	%	No.	%
a) seasonal planning	28	93.3	21	70.0	15	78.9	11	57.9
b) helps to operate the system	24	80.0	15	50.0	17	89.5	13	68.4
c) organizes seasonal maintenance	25	83.3	17	56.7	15	78.9	12	63.1
d) work on rehabilitation	27	90	22	73.3	16	84.2	11	57.9
e) take construction contracts	21	70	15	50	10	52.6	6	31.6
f) solve disputes/problems	27	90	14	46.7	12	63.2	8	42.1
g) sell inputs	3	10	2	6.7	5	26.3	5	26.3
h) facilitate loans	12	40	5	16.7	8	42.1	6	31.6
i) marketing	3	10	3	10	1	5.3	0	0
j) nothing	0	0	0	0	0	0	0	0
k) don't know	0	0	0	0	0	0	0	0

Forty three percent minor scheme and 21 percent medium scheme OBs said that the FO has rules specifying how much it can spend; 37 percent minor scheme and 11 percent medium scheme OBs said that there are such rules for committee members too. Thirty three percent minor scheme and 26 percent medium scheme OBs said that the FO required an approval from an agency officer for withdrawal of funds from the bank. Around 60 percent from both types said that the FO does not need such approval. More than 90 percent of them said that the FO is maintaining accounts books such as the general ledger, receipt books, accounts payable books and accounts receivable books.

Table 21. Sources of income of the Fos.

Source	Minor		Medium	
	No.	%	No	%
a) membership fees/shares	29	96.7	19	100
b) rehabilitation construction /other contracts	14	46.7	5	26.3
c) O&M allocation from agency	1	3.3	19	100
d) DAS contributions	3	10	2	10.5

Twenty seven percent minor scheme OBs said that finances are reported to the general membership monthly. Ten percent of both categories said that it is reported seasonally. Fifty percent minor scheme and 63 percent medium scheme OBs said that it is reported annually. Seven percent minor scheme and 16 percent medium scheme OBs said that finances were never reported to the general membership. The benefits from the FOs to farmers as reported by the OBs are summarized in table 21.

Table 22. Benefits from the FOs to farmers as indicated by the OBs.

Benefits	Minor		Medium	
	No.	%	No.	%
a) rehabilitation of the scheme	29	96.7	18	94.7
b) improved irrigation service	25	83.3	17	89.5
c) resolution of disputes	26	86.7	17	89.5
d) decreased cost of production	6	20	7	36.8
e) increased yield and income	8	26.7	8	42.1
f) improved relations with other farmers/better group morale	23	76.7	13	68.4
g) betterment of farmer life	11	36.7	2	10.5
h) no benefits	0	0	0	0

OBs also informed that there are problems associated with achieving these benefits. Table 23 gives information on these problems.

Table 23. Problems associated with achieving the benefits.

Benefits	Minor		Medium	
	No.	%	No.	%
a) lack of cooperation from farmers	10	33.3	14	73.7
b) lack of resources (funds and others)	10	33.3	6	31.6
c) lack of lack of cooperation from the government agencies	11	36.7	2	10.5

There are no Project Management Committee (PMC) in minor schemes. However, only 37 percent OBs in medium schemes said that there are PMC in their scheme. Fifty three percent said there was no PMC in their scheme. Sixty three percent did not respond to the question of how often the PMC met. Twenty six percent said the PMC met monthly while 16 percent said it met seasonally. The activities of the PMC are given in table 24.

Table 24. Activities of the PMC as indicated by the Obs.

Activity	Medium		Done Well	
	No.	%	No.	%
a) seasonal planning	3	15.8	3	15.8
b) solves irrigation problems	6	31.6	3	15.8
c) plans work on rehabilitation	6	31.6	3	15.8
d) solves agricultural problems	4	21.1	1	5.3

Agency support. OBs indicated three agencies, the ID, DAS and IMD which helped form FOs. Some of them said it was the Grama Sevaka who helped form the FO. Table 25 gives the summary of this information.

Table 25. Agencies that helped form FOs.

Activity	Minor		Medium	
	No.	%	No.	%
a) ID	10	33.3	18	94.7
b) DAS	30	100	14	73.7
c) IMD	1	3.3	3	15.8
d) GS	1	3.3	1	5.3

Table 26. Support given by the ID/PEU to FO.

	Minor		Medium	
	No.	%	No.	%
a) organizes meeting of FO and PMC	5	16.7	16	84.2
b) technical advice on O&M	17	56.7	16	84.2
c) technical advice on rehabilitation	19	63.3	17	89.5
d) training on O&M	9	30	13	68.4
e) training on rehabilitation	11	36.7	12	63.2
f) encouragement	6	20	7	36.8
g) attendance at meetings	11	36.7	14	73.7
h) assistance in solving problems	11	36.7	5	26.3
i) no support	0	0	0	0

The support given by the agencies other than DAS is included in table 26. The support given by DAS is given in table 27.

Table 27. Support given by DAS to FO.

Activity	Minor		Medium	
	No.	%	No.	%
a) attendance at meetings	30	100	14	73.7
b) assists in handling finances	26	86.7	10	52.6
c) assists in conducting meetings	29	96.7	14	73.7
d) assists in motivating farmers	28	93.3	11	57.9
e) provides training (specify subjects)	21	70	2	10.5
f) provides funds/resources	7	23.3	2	10.5
g) provides agricultural equipment	7	23.3	5	26.3
h) provides inputs	6	20	6	31.6
i) helps to get legal recognition	15	50	6	31.6
j) coordinates with other agencies	8	26.7	1	5.3

All the minor scheme OBs said that there are IOs in their scheme. Seventy nine percent of the OBs in medium schemes said so. IOs had not been appointed in one of the medium schemes at the time of this study. Table 28 provides information on the duties of IOs as given by the OBs. All OBs in the schemes where the IOs are available said that they are satisfied with the assistance given by the IOs.

Farmers were asked about the items of rehabilitation plan to be done in their schemes under NIRP. Table 29 gives the details of this information.

Table 28. Duties of IOs.

Activity	Minor		Medium	
	No.	%	No.	%
a) organizes meetings of the FOs and PMC	28	93.3	15	78.9
b) trains/advises farmers in O&M	27	90	12	63.2
c) trains/advises farmers in rehabilitation	27	90	14	73.7
d) trains/advises farmers in other subjects	16	53.3	15	78.9
e) carries messages/information from officers to farmers	29	96.7	15	78.9
f) carries messages/information from farmers to officers	28	93.3	15	78.9
g) audits FO accounts	27	90	14	73.7
h) assists FOs solve problems with agencies	23	76.7	12	63.2
i) helps resolve disputes	15	50	3	15.8
j) no assistance	0	0	0	0
k) don't know	0	0	0	0

Rehabilitation Planning and Design

Forty seven percent minor scheme and 74 percent medium scheme OBs said that changes of O&M after rehabilitation were discussed at the planning stage of rehabilitation. All OBs in minor schemes expect these changes would improve irrigation service significantly. Sixty eight percent medium scheme OBs had this expectation but 5 percent had a negative opinion. Twenty six percent of them did not answer this question. Table 30 shows farmer participation in the planning activities.

Table 29. NIRP activities in the sample.

Activity	Minor		Medium	
	No.	%	No.	%
a) fix the structures in the system	30	100	17	89.5
b) line some channels	21	70	18	94.7
c) improve the tank capacity	13	43.3	12	63.2
d) get more water for the scheme	5	16.7	1	5.3
e) turnover O&M responsibilities to farmers	22	73.3	7	36.8
f) fix roads	3	10	3	15.8
g) don't know	0	0	0	0

Table 30. Farmer participation in planning activities.

Activity	Minor		Medium	
	No.	%	No.	%
a) participated in walk-through survey(s)	26	86.7	17	9.5
b) participated in meetings with engineers on rehabilitation plans	26	86.7	15	78.9
c) held farmer meetings to discuss rehabilitation plans	28	93.3	16	84.2

Seventy three percent minor scheme and 90 percent medium scheme OBs expressed the opinion that they were able to understand the plans completely which were discussed at the meetings. Twenty percent OBs in minor schemes said that they could not understand what was discussed at the meetings. This 20 percent gave the following reasons for not understanding discussions (table 31).

Eighty seven percent minor scheme and 90 percent medium scheme OBs confirmed that suggestions from farmers were incorporated into the plans. Eighty seven percent minor scheme and 84 percent medium scheme OBs were satisfied with the rehabilitation plans. Fifty percent of minor scheme and 16 percent of medium scheme OBs emphasized that some very important items they felt needed were not included in the plans. They gave the following reasons for the noninclusion of important items into the plans (table 32).

Ninety percent of minor scheme and 47 percent medium scheme OBs informed that formal meetings were held to ratify that plans. According to 50 percent minor scheme and 21 percent medium scheme OBs, a formal agreement has been signed between the agency and the FO. However, 40 percent minor scheme and 53 percent medium scheme OBs said it was not so.

Table 31. Reasons for not understanding discussions at meetings.

Activity	Minor		Medium	
	No.	%	No.	%
a) the terms they used were unfamiliar	2	6.7	0	0.0
b) we could not understand proposed locations of structures	3	10.0	0	0.0
c) they did not give enough information	1	3.3	0	0.0

Table 34. Reasons for difficulties in getting labor.

Reason	Minor		Medium	
	No.	%	No.	%
a) farmers are not aware of the benefits of rehabilitation	10	33.3	8	42.1
b) many farmers do not care because they are short-term farmers	5	16.7	1	5.3
c) many farmers do not care because they are part-time farmers	2	6.7	1	5.3
d) no way to enforce FO rules	4	13.3	1	5.3

Construction Contracting

Sixty seven percent minor scheme and 37 percent medium scheme OBs said that FOs had taken construction contracts. FOs sometimes managed the work by themselves or subcontracted to the members of the FO or to the outsiders. Table 35 provides the relevant details.

Table 35. *The way FOs did contracts.*

	Minor		Medium	
	No.	%	No.	%
a) managed by the FO	17	56.7	3	15.8
b) subcontracted to members of the FO (specify)	1	3.3	3	15.8
c) subcontracted to outsiders (specify)	5	16.7	3	15.8

The FO found capital for contracts from the contributions of the farmers and several FRs, and from advances from the agencies or from loans on interest. Table 36 gives the relevant details.

Table 36. *How the FO finds capital for contracts.*

	Minor		Medium	
	No.	%	No.	%
a) contribution from farmers	5	16.7	2	10.5
b) contribution of several FRs	7	23.3	2	10.5
c) advances from the agencies	1	3.3	0	0.0

How the FO recruited labor in contracts is given in table 37.

Table 37. *How the FO recruited labor for contracts.*

	Minor		Medium	
	No.	%	No.	%
a) <i>shramadana</i>	10	33.3	2	10.5
b) hired labor from within the FO	16	53.3	4	21.1
c) hired outside labor	5	16.7	1	5.3

Only 37 percent minor scheme and 16 percent medium scheme OBs reported that they had difficulties in obtaining materials for contracts. The reasons for those difficulties are summarized in table 38.

Table 38. Reasons for difficulties in obtaining materials.

	Minor		Medium	
	No.	%	No.	%
a) lack of funds to purchase	7	23.3	1	5.3
b) didn't know where to get them	2	6.7	0	0.0
c) needed materials not available	2	6.7	2	10.5
d) transport not available or very costly	8	26.7	1	5.3

Seventy three percent minor scheme and 27 percent medium scheme OBs said that the agency gave the required levels, took measurements and made payments in time. Twenty three percent minor scheme and 68 percent medium scheme OBs did not answer this question. Seventy three percent minor scheme and 32 percent medium scheme OBs said that the agency provided adequate technical advice and help. Only 33 percent minor scheme and 21 percent medium scheme OBs said that the FOs made profits from the contracts. According to them the major reasons for not making profits are poor planning and lack of experience and knowledge. Only 33 percent minor scheme and 16 percent medium scheme OBs said that they received the full amount of money for the completed work. Twenty three percent minor scheme and 21 percent medium scheme OBs said that when subcontracted the subcontractors hired the local laborers. Seventeen percent minor scheme and 16 percent medium scheme OBs said that the FO received income through subcontracting. Fifty percent minor scheme and 32 percent medium scheme OBs said that the work was completed on time while 53 percent minor scheme and 26 percent of medium scheme OBs said that they are satisfied with the work done.

Construction Supervision

Ninety three percent minor scheme OBs and 32 percent medium scheme OBs said that the constructions had begun in their schemes. Seventy seven percent minor scheme and 63 percent medium scheme OBs said that the FO members were given training in construction supervision. According to them these trainings were given by the officers of ID and DAS, and by the IOs. Seventy three percent minor scheme and 68 percent medium scheme OBs said that they planned the construction supervision. The efforts planned are included in table 39.

Table 39. Efforts planned for construction supervision.

	Minor		Medium	
	No.	%	No.	%
a) periodic checks of contractors' work by appointed FO members with regular reports to ID/PEU/DAS and contractors	15	50.0	7	36.8
b) periodic checks of contractors' work by appointed FO members with regular reports only to ID/PEU/DAS	12	40.0	3	15.8
c) periodic checks of contractors' work with reports only when necessary	4	13.3	3	15.8
d) casual checks by any FO member and reports when a problem is noticed	0	0	1	5.3

Seventy percent of minor scheme and 47 percent medium scheme OBs said that the responsible agency (ID/PEU/DAS) agreed to these plans while 73 percent minor and 26 percent medium scheme said that these plans were carried out. The problems that arose during construction supervision are summarized in table 40.

Table 40. Problems that arose during construction supervision

	Minor		Medium	
	No.	%	No.	%
a) appointed FO members did not make checks	4	13.3	1	5.3
b) FO members failed to make reports	2	6.7	1	5.3
c) contractor/agency ignored reports	3	10.0	1	5.3
d) others (specify)	3	10.0	0	0
e) no problems	12	40.0	1	5.3

Sixty seven percent minor scheme and 32 percent medium scheme OBs said that supervision by the farmers improved the quality of construction work.

Turnover

Eighty seven percent minor scheme and 79 percent medium scheme OBs expressed that FOs would be able to successfully manage the system following rehabilitation. About 13-15 percent who said that the FOs would not be able to successfully manage the system gave the following reasons (table 41).

Table 41. Reasons to why FOs cannot manage system O&M well.

	Minor		Medium	
	No.	%	No.	%
a) the FO cannot raise enough funds for maintenance	2	6.7	2	10.5
b) the FO lacks the needed technical knowledge and experience	1	3.3	2	10.5
c) the FO lacks the needed management abilities	0	0.0	3	15.8
d) the FO lacks the needed legal powers	2	6.7	1	5.3
e) the FO lacks the needed corporation from farmers	0	0.0	5	26.3

Institutional Development Officers (Divisional Officers of the DAS)

Sample Characteristics

Divisional Officers (DO) of the Department of Agrarian Services are highly involved in FO activities. Each scheme belongs to an Agrarian Services Center (ASC) and registration of the FO with the DAS is done by the DO. Although there are 20 schemes in the sample there are only 19 DOs as one medium scheme and one minor scheme are represented by one DO, because both schemes are situated within one division of the DAS. The information from this DO has been included under both minor scheme and medium scheme categories in the analysis. There are 5 female DOs among the 19.

Agency support. Fourteen DOs for minor schemes and 3 DOs for medium schemes have helped in creating FOs in those schemes. The FO in one minor scheme had been formed by farmers themselves before agency involvement. Two FOs in two medium schemes were formed by the IMD and the ID, one each. The training provided by the DAS to develop the FO are been summarized in table 42.

Table 42. Training provided by DAS to develop FOs.

Subject	Minor		Medium	
	No.	%	No.	%
a) in conducting meetings	15	100.0	3	60.0
b) in accounting	14	93.3	5	100.0
c) in agriculture	12	80.0	2	40.0
d) in aspects of rehabilitation	10	66.7	2	40.0
e) in organizational management	9	60.0	3	60.0
f) in irrigation system O&M	8	53.3	2	40.0
g) NIRP activities	1	6.7	-	-
h) Land disputed	1	6.7	-	-
i) coordination of credit facilities	1	6.7	-	-
j) construction/water management	1	6.7	-	-
k) leadership	-	-	1	20.0

In addition to the training, DAS provided some other support and advice to improve the FO to make it an important activity in the farming community. Table 43 summarize the support given by the DAS as stated by the Dos.

Table 43. Other support provided by DAS to develop Fos.

Subject	Minor		Medium	
	No.	%	No.	%
a) providing inputs	15	100.0	4	80.0
b) assist FO s in handling finances	15	100.0	3	60.0
c) attend FO meetings	14	93.3	4	80.0
d) encouragement/awareness sessions	14	93.3	3	60.0
e) helping to get registration/legal recognition	14	93.3	3	60.0
f) assist FO S in solving internal problems	13	86.7	3	60.0
g) organizing meetings of FO and PMC	13	86.7	2	40.0
h) coordination with other agencies	12	80.0	2	40.0
i) providing agricultural equipment	12	80.0	2	40.0

Table 44. Duties of the IO.

Subject	Minor		Medium	
	No.	%	No.	%
a) organizes meetings of the FOs and PMC	15	100.0	4	80.0
b) carries messages/information from officers to farmers	15	100.0	3	60.0
c) carries messages/information from farmers to officers	15	100.0	3	60.0
d) helps to resolve disputes	14	93.3	3	60.0
e) assists FOs solve problems with agencies	13	86.7	2	40.0
f) audits FO accounts	12	80.0	1	20.0
g) trains/advises farmers in rehabilitation	5	33.3	1	20.0
h) trains/advises farmers in other subjects	5	33.3	-	0
i) trains/advises farmers in O&M	2	13.3	1	20.0
j) data collection	1	6.7	-	0.0
k) coordination with line agencies	1	6.7	-	0.0

By the time of the study, all the schemes had been assigned IOs, except for one medium scheme. The duties of the IOs as indicated by the DOs are summarized in table 44. All the DOs are satisfied with the work of IOs in minor schemes but not with the work of those in medium schemes.

Rehabilitation Planning and Design

The comments of the DOs on the participation of farmers in the planning and design stage of rehabilitation are analyzed as below. Ninety three percent minor scheme DOs and 40 percent medium scheme DOs said that farmers' suggestions were incorporated into the plans. One minor scheme DO said that farmers' suggestions were not incorporated while one medium scheme DO said he did not know whether the suggestions were incorporated or not. Eighty seven percent minor scheme DOs and 60 percent medium scheme DOs said that the farmers are satisfied with the rehabilitation plans. Thirteen percent minor scheme DOs said that farmers were not satisfied with the plans because the latter thought their suggestions had not been included in the plans. Work had not commenced in two medium schemes. The way farmers participated in the planning and design process is given in table 45.

Table 45. How farmers take part in the planning activities.

Subject	Minor		Medium	
	No.	%	No.	%
a) participated in walk-through survey(s)	11	73.3	2	40.0
b) participated in meetings with engineers on rehabilitation plans	12	80.0	2	40.0
c) held farmer meetings to discuss rehabilitation plans	12	80.0	2	40.0
d) did not participate	0	0.0	0	0.0
e) respondent came recently	1	6.7	1	20.0

Thirty three percent minor scheme DOs and 40 percent medium scheme DOs said that specific post-rehabilitation O&M plans were discussed with farmers. Sixty seven percent minor scheme DOs said that it was not so while 20 percent of medium scheme DOs did not know about this. Ninety three percent minor scheme and 60 percent medium scheme DOs hoped that rehabilitation would improve irrigation services significantly. Only 7 percent minor scheme DOs said that it would not be so. The percentage of medium scheme DOs who said so was lower (60 percent) because the other 40 percent represented schemes where rehabilitation had started. Sixty percent minor scheme and 40 percent medium scheme DOs said that they had not witnessed problems in getting farmers' participation. But some DOs pointed out some reasons for the difficulty in getting farmers' participation (table 46.).

Table 46. Difficulties in getting farmers' participation.

	Minor		Medium	
	No.	%	No.	%
a) lack of interest by the farmers	2	13.3	1	20.0
b) farmers were not capable of understanding technical aspects of the plans	1	6.7	1	20.0
c) the farmer leaders dominated all contacts	3	20.0	1	20.0
d) disparities among different agencies	2	13.3	1	20.0
e) no problem as yet	9	60.0	2	40.0

Ten Percent Contribution

Ninety three percent minor scheme and 40 percent medium scheme DOs said that the main form of farmers' contribution for their mandatory 10 percent contribution of the total cost is labor for the earthwork. In one scheme 7 percent of the DOs said that the form of this contribution is cash. Sixty percent minor scheme DOs said the work is going according to the schedule while 40 percent said it was not so. The DOs for medium schemes did not answer this question since the 10 percent work had not commenced or not completed. One medium scheme DO said that he did not know about this. The major reason for this work not going according to the schedule is flood or rain. Although the given reasons are not well represented the sample results are given in table 47.

Table 47. Reasons for the 10 percent work not going according to schedule.

	Minor		Medium	
	No.	%	No.	%
a) work not yet begun	1	6.7	-	0.0
b) contractors' fault	1	6.7	-	0.0
c) due to flood/rain	3	20.0	-	0.0
d) due to other income-generating activities	1	6.7	1	20.0

Seventy three percent minor scheme DOs informed that they have not met any difficulties in getting labor for the 10 percent work. The difficulties stated are summarized in table 48. The DOs in medium schemes did not answer this question.

Table 48. Difficulties in getting labor for the 10 percent work.

	Minor		Medium	
	No.	%	No.	%
a) political problems	1	6.7	-	0.0
b) rich farmers neglect work	1	6.7	-	0.0
c) poor farmers can not sacrifices	2	13.3	-	0.0
d) no problem yet	11	73.3	-	0.0

Construction Contracting

Sixty percent minor scheme and 40 percent medium scheme FOs had taken rehabilitation contracts while 40 percent minor scheme and 60 percent medium scheme FOs had not done so according to the DOs. According to 6 (40 percent) minor scheme DOs and 1 (20 percent) medium scheme DO, the FOs had refused to undertake the offered contracts as they were not economically strong for such a venture. Fifty three percent minor scheme and 20 percent medium scheme DOs said that FOs are learning technical and managerial skills where they had taken construction contracts while only one DO (7 percent) from a minor scheme said it was no so. The same results are valid for the FOs to increase their funds significantly through contracting. Only two DOs each from a minor scheme and a medium scheme expressed that they had the experience of FOs being weakened by creating dissension over funds.

Construction Supervision

Construction had begun in all minor schemes and two medium schemes at the time of the study. Eighty seven percent minor scheme and 20 percent medium scheme DOs said that they helped FOs prepare plans for construction supervision. Thirteen percent minor scheme and 20 percent medium scheme DOs had not done so. Seventy three percent minor scheme DOs mentioned that problems were not reported in construction supervision. The problems faced in construction supervision as reported by some of the DOs are summarized in table 49.

Table 49. Problems that arose during construction supervision

	Minor		Medium	
	No.	%	No.	%
a) appointed FO members did not make checks	1	6.7	-	0.0
b) DAS refuse to take over	1	6.7	-	0.0
c) no responses from the agencies for the complains	1	6.7	1	20.0
d) farmers tried to get the upper hand unnecessarily	1	6.7	1	20.0
no problems	11	73.3	-	0.0

Turnover

Eighty seven percent minor scheme and 40 percent medium scheme DOs said that the FOs were able to successfully manage the system following rehabilitation while 13 percent minor scheme and 20 percent medium scheme DOs said that it was not so. Seven percent minor scheme and 20 percent medium scheme DOs said that the FOs cannot raise enough funds for maintenance. Seven percent minor scheme DOs said that the FOs lack the needed technical knowledge and experience and were therefore unable to take over O&M.

Institutional Organizers

Sample Characteristics

There is one IO in each minor scheme but more than one in some medium schemes. Out of 15 IOs in 15 minor schemes 5 are females. Altogether there are 6 IOs in the 4 medium schemes and all are males. No IO had been appointed to one medium scheme. All IOs in minor scheme are attached to the DAS while all IOs in medium schemes are attached to the ID. Nine out of 21 have over 2 years' experience as an IO. Three IOs have between 1½ and 2 years of such experience. The experience of the rest is below that of the last category. There are 3 IOs whose have less than 6 months' experience.

Farmer Organization

The existing structures of the FOs under reference as stated by the IOs are as follows (table 50).

Table 50. Existing structures of the Fos.

Subject	Minor		Medium	
	No.	%	No.	%
a) Project-level organization	0	0.0	4	66.7
b) DC-level organization	0	0.0	4	66.7
c) FC-level organization	0	0.0	4	66.7
d) Tank-based—one organization for one tank	6	40.0	1	16.7
e) Tank-based—one organization for several tanks	2	13.3	0	0.0
f) Anicut-based—one organization for one anicut	3	20.0	0	0.0
g) Anicut-based—one organization for several anicuts	4	26.7	0	0.0

Eighty seven percent minor scheme and 83 percent medium scheme IOs said that the existing structure was appropriate for the management of the scheme. Eighty percent of minor scheme and 67 percent of medium scheme IOs felt that the current leadership was appropriate. Twenty percent minor scheme and 17 percent medium scheme IOs said that the current leadership was not appropriate. Reasons for this are summarized in table 51, but the numbers are not representative.

Table 51. Reasons for the inappropriateness of the leadership.

Subject	Minor		Medium	
	No.	%	No.	%
a) the leaders are allied with officers	0	0.0	1	16.7
b) the leaders are allied with politicians	1	6.7	0	0.0
c) the leaders are rich and powerful and ignore the interests of the ordinary farmers	1	6.7	0	0.0
d) the leaders act without consulting the members	0	0.0	1	16.7
e) other reasons (specify)	1	6.7	0	0.0

All the IOs said that the farmer leaders are handling funds properly. More than 80 percent of the IOs said that FOs manage the operation of part or all of the scheme. Only one IO in a minor scheme said that when the FO is not involved, the work is done by the agency. Fifty percent of the medium scheme IOs were also of the same view. Forty seven percent minor scheme and 83 percent medium scheme IOs confirmed that if the operations are done by FOs they do it well. The same percentage of farmers said that the FOs manage maintenance of part or all of the scheme. Forty seven percent minor scheme and 67 percent medium scheme IOs confirmed that when maintenance is carried out by FOs they do it well. Following are the reasons for not doing maintenance work well (table 52).

Table 52. Reasons for not doing maintenance well.

Subject	Minor		Medium	
	No.	%	No.	%
a) farmers will not cooperate	1	6.7	0	0.0
b) they lack the resources necessary	2	13.3	0	0.0
c) they lack the technical knowledge and experience needed	1	6.7	0	0.0
d) other reasons (specify)	2	13.3	0	0.0

Seventy three percent minor scheme and 67 percent medium scheme IOs said that the FOs had not undertaken any business activities like selling inputs and purchasing produce. The IOs pointed out the benefits accrued to the farmers from the FOs. Rehabilitation of the scheme, improved irrigation service and resolution of disputes among farmers are the major benefits. Table 53 summarizes the number of IOs who confirmed each benefit and their percentages.

Table 53. Benefits to the farmers from the FOs.

Subject	Minor		Medium	
	No.	%	No.	%
a) rehabilitation of the scheme	14	93.3	3	50.0
b) improved irrigation service	11	73.3	5	83.3
c) resolution of disputes	10	66.7	5	83.3
d) decreased cost of production	5	33.3	3	50.0
e) increased yield and income	3	20.0	2	33.3
f) improved relations with other farmers/better group morale	8	53.3	2	33.3
g) betterment of farmer life	2	13.3	1	16.7
h) self-employment	1	6.7	0	0.0
i) no benefits	1	6.7	0	0.0
j) new technology	1	6.7	0	0.0
k) other special activities	1	6.7	0	0.0

There are many barriers to the FOs in achieving these benefits. Table 54 represents these problems according to the views of the IOs.

Table 54. Problems encountered in achieving benefits.

Subject	Minor		Medium	
	No.	%	No.	%
a) no cooperation from farmers	4	26.7	3	50.0
b) no resources (funds and others)	8	53.3	4	66.7
c) lack of cooperation from the government agencies	5	33.3	2	33.3
d) economically powerful farmers do not need any support	1	6.7	0	0.0
e) lack of knowledge	1	6.7	0	0.0
f) lack of knowledge/lack of interest of officers	1	6.7	0	0.0
g) lack of coordination between agencies	1	6.7	1	16.7
h) political problems	1	6.7	1	16.7

There are no Project Management Committees in any of the minor schemes. Eighty three percent IOs in medium schemes confirmed that there are PMCs in medium schemes. Sixty seven percent IOs said that the PMC is doing seasonal planning, solving irrigation problems and planning rehabilitation. Thirty three percent of them said that the PMC is also solving agricultural problems. More than 50 percent of these

IOs indicated that more effective seasonal planning, better corporation with agencies and resolving disputes among farmers are the benefits derived from the PMC to the farmers.

Agency support. Seventy three percent minor scheme and 67 percent medium scheme IOs said that their agencies (DAS/ID) helped create FOs. Seventeen percent medium scheme IOs said that the IMD helped create FOs in their schemes. FOs had been created in all minor schemes by the time the IOs had arrived in the scheme. Eighty three percent medium scheme IOs affirmed this. There is a list of activities that IOs are doing to support FOs. These are presented in table 55 as IOs had indicated.

Farmer Participation in Rehabilitation

Sixty seven percent minor scheme and 83 percent medium scheme IOs said that farmer participation in rehabilitation planning was adequate. Seventeen percent medium scheme IOs expressed the view that better communication among farmers would improve their participation. All the IOs in minor schemes said that farmers are carrying out work connected to the 10 percent contribution. Only 50 percent IOs in medium schemes affirmed this while 33 percent of them denied this the major reason being that the rehabilitation work had not commenced. Sixty percent IOs in minor schemes and 50 percent IOs in medium schemes said that the FOs had taken construction contracts. The difficulties faced by the FOs in doing contracts are given in table 56.

Table 55. Activities of the IOs

Subject	Minor		Medium	
	No.	%	No.	%
talk to individual farmers to create awareness of the FO(s)	14	93.3	6	100.0
organize meetings of the FOs and PMC	15	100.0	6	100.0
train/advise farmers in O&M	4	26.7	3	50.0
train/advise farmers in rehabilitation	6	40.0	3	50.0
train/advise farmers in other subjects	15	100.0	5	83.3
carry messages/information from officers to farmers	15	100.0	6	100.0
carry messages/information from farmers to officers	14	93.3	6	100.0
audit FO accounts	12	80.0	5	83.3
assist FOs solve problems with agencies	10	66.7	6	100.0
help to resolve disputes among farmers	0	0.0	4	66.7

IOs have pointed out the difficulties they faced in working with FOs. Forty percent minor scheme and 67 percent medium scheme IOs emphasized that the difficulties were due to lack of transportation. Twenty percent minor scheme and 50 percent medium scheme IOs indicated that lack of support from other agency officers also made it difficult for them to work with FOs.

Table 56. Difficulties faced by the FOs in contract work.

Subject	Minor		Medium	
	No.	%	No.	%
a) FOs lack the necessary resources (funds and materials)	6	40.0	2	33.3
b) FOs lack the necessary technical knowledge and experience	3	20.0	0	0.0
c) FOs lack the necessary management abilities	3	20.0	0	0.0
d) the agency has not provided sufficient technical assistance	0	0.0	0	0.0
e) payment delays	1	6.7	2	33.3
f) delays in the agencies	1	6.7	1	16.7
g) mistaken by the officers	1	6.7	1	16.7

All IOs in minor schemes informed that FOs were learning technical and management lessons through contracting which would be useful for maintenance in future. FOs were increasing funds significantly through contracting and no problems related to funds were reported. Only 50 percent IOs in medium schemes reported that farmers were learning technical and management skills through contracting. Thirty three percent of them said FOs increase their fund through contracting while another 33 percent denied this. Seventeen percent reported that there FOs were being weakened because of dissension over funds. All IOs in minor schemes and thirty three percent IOs in medium schemes reported that FOs in minor schemes were undertaking construction supervision while another 33 percent denied this. No significant problems in construction supervision were reported by the IOs.

Turnover

Seventy three percent in minor scheme and 67 percent in medium scheme IOs were of the opinion that the FOs were able to successfully manage the system following rehabilitation. Twenty seven percent minor scheme and 33 percent medium scheme IOs believe that FOs cannot achieve this target. Seven percent minor scheme and 17 percent medium scheme IOs indicated that FOs cannot raise adequate funds for maintenance as a reason for the above-mentioned inability. Seventeen percent of medium scheme IOs also said that the farmers do not have the required technical knowledge and experience and management abilities to take over the O&M of the schemes. The IOs suggested the following support or changes to improve the FOs (table 57):

Table 57. Suggestions to improve the FOs

Subject	Minor		Medium	
	No.	%	No.	%
a) reorganization of the FOs	0	0.0	2	33.3
b) more training and advice on O&M	7	46.7	2	33.3
c) a longer period of support from Ios	6	40.0	0	0.0
d) funds from the government	6	40.0	1	16.7
e) policy changes to increase the profitability of irrigated agriculture	2	13.3	0	0.0
f) other (specify)	2	13.3	1	16.7

Irrigation Officers (Technical Assistants)

Sample Characteristics

There are 20 Technical Assistants (TAs) to look after the rehabilitation of the 20 schemes. All of them are males and no female TA was found in this survey. These TAs belong to 3 implementation agencies of the NIRP. TAs for medium schemes are attached to the ID. TAs assigned for 15 minor schemes are 10 from the ID, 4 from the DAS and 1 from the PEU. Some TAs were unable to comment on the situation of the scheme in the past because those were assigned to the particular scheme after the scheme was selected for rehabilitation or when rehabilitation was going on.

Irrigation and Agriculture Situation of the Scheme

Out of 15 minor schemes 8 are tank systems and 7 are anicut systems. Out of 5 medium schemes there is only one anicut system. The maximum command area of the minor schemes is 200 acres and the minimum is 15 acres. The maximum command area of medium schemes is 3,600 acres and the minimum is 215 acres. Out of 15 minor schemes, the command areas of 2 schemes are less than or equal to 33 acres; 7 are more than 33 or between 33 and 66 acres; 4 are more than 66 or between 66 and 100 acres; and 2 are more than 100 acres. The physical distribution system of the medium schemes and one minor scheme consist of the MC, DCs, and FCs; fields are mostly irrigated by the FCs. The physical distribution system of 8 minor schemes (53%) consist of a single MC and a few or no subsidiary canals.

Farmers are responsible for the system management of 80 percent of the minor schemes. Two TAs (13%) said that one TA is responsible for the system management of several schemes. A TA is responsible for the system management of each medium scheme. More than 70 percent of TAs in minor schemes said that headworks, the MC, the secondary and the tertiary canal operations are done by the farmers alone. Thirteen percent of them said that headworks and the MC operations are done by both the agency and the farmers. Seven percent of them said that secondary and tertiary canal operations are done by both the agency and the farmers. Forty percent of the TAs in medium schemes said that the headworks, the MC, the secondary and the tertiary operations are by the agency alone and 60 percent of them said that those are

done by both the agency and the farmers. All TAs of the medium schemes reported that the headworks and the MC maintenance are done by the agency alone. According to 40 percent of them the secondary and the tertiary canal maintenance is done by the agency alone while 20 percent of them reported that it is done by both the agency and the farmers. According to 60 percent of the TAs in minor schemes, the headworks and the MC maintenance of the minor schemes is done by farmers alone while 27 percent reported that it is done by both the agency and the farmers. Seventy three percent of them reported that the secondary and the tertiary canal maintenance of the minor schemes is done by farmers alone. Only 7 percent said that it is done by both the agency and the farmers.

According to the 80 percent of TAs in minor schemes and 60 percent of TAs in medium schemes, water in the system is sufficient for irrigation in maha but not in yala. Two (13 percent) TAs in minor schemes and 1 (20 percent) TA in a medium scheme said that in their schemes, water is sufficient for the whole system in both maha and yala. Another two (13 percent) TAs and 1 (20 percent) TA in medium schemes said that water is not sufficient in both seasons for their systems: 33 percent TAs in minor schemes and 60 percent TAs in medium schemes reported that there is head-tail difference in water availability in their schemes. Table 58 summarizes the major problems in system O&M as stated by the TAs.

Table 58. Problems in system O&M.

Subject	Minor		Medium	
	No.	%	No.	%
a) insufficient water supply	8	53.3	4	80.0
b) system physical deficiencies	15	100.0	5	100.0
c) inadequate planning	2	13.3	2	40.0
d) poor distribution performance	11	73.3	4	80.0
e) inadequate resources for O&M	8	53.3	4	80.0
inadequate cooperation among farmers	4	26.7	3	60.0
f) inadequate cooperation between farmers and agencies	1	6.7	1	20.0

Ninety three percent minor schemes and 100 percent medium schemes are grown to rice in maha. Seven percent minor schemes are grown to both rice and OFC in maha. Forty seven percent minor and 60 percent of medium schemes are grown to rice in yala. Twenty seven percent minor schemes and 20 percent medium schemes are grown to both rice and OFC and 20 percent of both minor schemes and medium schemes are grown to OFC only in yala. About 7 percent of minor schemes are left fallow in yala.

Agency support. Agencies involved in rehabilitation support FOs in many ways. Table 59 shows the support given by these agencies.

Table 59. Support given to FOs by the agencies.

Subject	Minor		Medium	
	No.	%	No.	%
a) organizes meetings of FO and PMC	6	40.0	4	80.0
b) technical advice on O&M	14	3.3	5	100.0
c) technical advice on rehabilitation	15	100.0	5	100.0
d) other advice (specify)	0	0.0	0	0.0
e) training on O&M	5	33.3	4	80.0
f) training on rehabilitation	8	53.3	4	80.0
g) other training (specify)	1	6.7	2	40.0
h) encouragement	9	60.0	4	80.0
i) attendance to meetings	13	86.7	5	100.0
j) assistance in solving problems	12	80.0	5	100.0

Rehabilitation Planning and Design

All TAs in medium schemes and 60 percent in minor schemes said that farmers participated in walk-through surveys. Thirteen percent of TAs in minor schemes said that they did not know about this as they had not taken over the work at the time of the walk-throughs. There were not favorable answers for the number of walk-throughs conducted and the number of farmers who took part in each walk-through. According to TAs, farmers participated in planning meetings. Thirty three percent TAs in minor scheme and 60 percent in medium schemes said that farmers did not have a problem in understanding what was discussed at these meetings. However 40 percent of TAs from both categories confirmed that farmers had that problem. The reason for the 20 percent of TAs in both categories to state this was that terms used by officer in the meetings are sometimes unfamiliar to the farmers. Sixty percent of TAs in medium schemes said that discussions at PMC and FO meetings were held to get farmer participation. Forty percent of them stated that written descriptions of the proposed plans were distributed among farmers. In minor schemes, 40 percent of TAs said they discussed with farmers in FO meetings while 13 percent said that written descriptions of the proposed plans were distributed among farmers. All (100%) TAs in medium schemes and 93 percent TAs in minor schemes reported that the farmers' suggestions were incorporated in the plans. Forty seven percent TAs in minor schemes and 80 percent TAs in medium schemes admitted that some items demanded by farmers could not be included in the plans. Twenty percent of minor scheme and 40 percent of medium scheme TAs said that NIRP rules did not allow funding these items. Forty seven percent minor scheme TAs said these items were not included due to inadequate funds. Seven percent TAs in minor schemes said that farmers' suggestions were not included was due to technical reasons.

Eighty percent of TAs in medium schemes and all TAs in minor schemes reported that a formal meeting had been held with farmers to ratify the plans. However, 80 percent TAs in medium schemes and 60 percent TAs in minor schemes said that a formal agreement between the agency and the FO had not been signed.

TAs gave information regarding the work undertaken in their schemes under NIRP. Table 60 shows how many TAs responded to each item done in that scheme.

Table 60. Items done by the NIRP.

Subject	Minor		Medium	
	No.	%	No.	%
a) fix the structures in the system	14	93.3	5	100.0
b) line some channels	5	33.3	4	80.0
c) improve the tank capacity	5	33.3	1	20.0
d) get more water for the scheme	2	13.3	1	20.0
e) turn over O&M responsibilities to farmers	13	86.7	5	100.0
f) fix roads	2	13.3	5	100.0
g) isolation bund and plan bund used as roads	2	13.3	0	0.0
h) improvements to anicut	1	6.7	0	0.0

Eighty percent TAs in minor scheme and 60 percent in medium schemes have the expectation that the operation of the scheme would change after rehabilitation. Twenty percent TAs from both categories of schemes negatively answered this question. Table 61 summarizes the kind of changes they expect after rehabilitation.

Table 61. Changes expected in operation after rehabilitation.

Subject	Minor		Medium	
	No.	%	No.	%
a) rotations will be instituted instead of continuous flow	5	33.3	2	40.0
b) continuous flow will be instituted instead of rotations	0	0.0	1	20.0
c) discharges will change in some channels	3	20.0	1	20.0

Eighty seven percent minor scheme and 60 percent medium scheme TAs expect these changes to improve irrigation service significantly. The TAs pointed out the problems in getting farmer participation in rehabilitation planning and design. Table 62 presents the results.

Table 62. Problems in getting farmer participation.

Subject	Minor		Medium	
	No.	%	No.	%
a) lack of interest by the farmers	3	20.0	3	60.0
b) farmers were not capable of understanding technical aspects of the plans	1	6.7	1	20.0
c) the farmer leaders dominated all contacts	0	0.0	0	0.0
d) disputes among farmers	1	6.7	0	0.0
e) no problem	2	13.3	0	0.0

Ten Percent Contribution

Only one TA in a medium scheme said that the agreement on the specific items that make up the 10 percent farmer contribution reached at special meetings following ratification of the plans. All other TAs said it was decided as part of the overall planning process. Eighty percent of medium scheme and 100 percent minor scheme TAs said that the form of 10 percent farmer contribution was earthwork. One medium scheme TA (20 percent) said that farmers contribute labor for work other than the earthwork for the 10 percent contribution. Forty seven percent minor scheme and 60 percent medium scheme TAs said that the 10 percent work was not completed according to the schedules. Reasons for it are been given in Table 63.

Table 63. Reasons for not completing the 10 percent work on schedule.

Subject	Minor		Medium	
	No.	%	No.	%
a) work not yet begun	1	6.7	2	40.0
b) FO(s) cannot mobilize the labor	1	6.7	0	0.0
c) FO(s) not interest	2	13.3	0	0.0
d) due to no rain	1	6.7	0	0.0
e) weakness of leaders	1	6.7	0	0.0

Construction Contracting

Eighty percent TAs in both types of schemes said that they have given contracts to the FOs. Only 20 percent of both types denied this. Thirteen percent minor scheme TAs said FOs refused the offered

contracts. Forty percent of medium scheme TAs said that the work was too technical to be handled by the FOs.

Answering the question of how these constraints alleviated by the FO, 73 percent minor scheme and 20 percent medium scheme TAs said that it was managed by the FO itself. Forty percent medium scheme TAs said that sub-contracts were given to the members of the FOs. Fifty three percent minor scheme TAs said the work was completed on time. But only 20 percent medium scheme TAs said so. The main problem for the delay according to 13 percent minor scheme TAs is lack of operating capital. Seven percent of minor scheme TAs said that it is due to lack of technical know-how. However, 60 percent of minor scheme and 40 percent of medium scheme TAs are satisfied with the quality of work done by the FOs. Seven percent of minor scheme TAs said that the quality was not so good due to lack of technical knowledge of the FOs. Sixty seven percent minor scheme and 40 percent medium scheme TAs said that they provided technical advice to the FOs regarding construction contracting. The kind of help given to the FO is indicated in table 64.

Table 64. Kind of help given to the FO in construction contracts.

Subject	Minor		Medium	
	No.	%	No.	%
a) instruction/training in structures	7	46.7	2	40.0
b) instruction/training in concrete mixtures	7	46.7	2	40.0
c) information about sources of materials	5	33.3	2	40.0
d) other help (specify)	1	6.7	0	0.0

One TA from a minor scheme and the others from medium schemes said that they provided materials to the FO for contracts.

Construction Supervision

Ninety three percent minor scheme and 20 percent medium scheme TAs reported that the construction had begun in their schemes. Sixty percent minor scheme and 20 percent medium scheme TAs said that FO members were provided with the training in construction supervision. In minor schemes, this has been done by both the ID and the DAS officer while it was done only by the ID office in case of medium schemes. Forty seven percent minor scheme and 20 percent medium scheme TAs said that they assisted to plan construction supervision activities. Fifty three percent minor scheme and 20 percent medium scheme TAs said that their plans were carried out. No serious problems had arisen in construction supervision. Forty percent minor scheme and 20 percent medium scheme TAs said that farmers' supervision helped improve the quality of the construction work.

Turnover

Ninety three percent minor scheme TAs and 40 percent medium scheme TAs said that the FOs are able to successfully arrange the systems following rehabilitation. Twenty percent of medium scheme TAs who said that farmers could not do this, gave the reasons that as FOs could not raise enough funds for maintenance, FOs lack the needed technical knowledge, experience and management abilities.

Conclusion

THE OVERALL CONSENSUS on the different aspects of farmer participation extracted from the results of the interviews based on five questionnaires is presented in this section of the report. If there are contradictory results in different questionnaires they are explained accordingly under relevant sub- topics. Results of minor schemes and medium schemes do not show much difference but if there is any, they are explained accordingly.

Farmer Organization

According to the results, awareness of sample farmers of the FO is satisfactory. Ordinary farmers know the name of the FO, the membership fee and the time the FO was formed. They are also aware of the members of the FO. Seasonal planning, operation of the system, seasonal maintenance, rehabilitation, construction contracts and resolving disputes among farmers are the major activities of FOs. Selling inputs, facilitating loans and marketing of produce can be considered as secondary activities because these were reported by a very small percentage of farmers. The opinions of the FOOBs reveal that they are not certain on rules and regulations of the FOs. When they were questioned on the tenure of the OBs, they have given figures from 1 year to 4 years. However, except for one FO in a medium schemes, all other FOs have a constitution; more than 90 percent of FOs are registered with DAS under Article 56 A of the Agrarian Services Act. Although they had given different views of the tenure of the OBs, more than 80 percent OBs said that the latter are selected each year.

The opinion of the ordinary farmers and the OBs on the frequency of holding meetings varied. According to the majority, the CM is held monthly. The GM is held monthly, seasonally or annually. The study reveals that the stage of rehabilitation determines the frequency of meetings. However, results revealed that almost all the farmers attend general membership meetings. A few of them attend committee meetings too. FRs are selected by the farmers themselves at the AGM. The OBs of the medium schemes had a different opinion as the FRs are selected by the Field Canal Group (FCG) or at the AGM. OBs are also selected by the general membership. The structure of the FO is more or less similar in all the FOs. A president, secretary, treasurer, vice president, and co-secretary and an odd number of committee members are found in all the FOs. Farmers are generally satisfied with the present leadership because they help solve their problems, honest in handling funds, support farmers' interests and are not biased toward one section of farmers.

According to the IOs, there are two types of structures in FOs in the minor schemes. Those are one FO for one tank/anicut and one FO for several tanks/anicuts. The FO structure in medium schemes consists of the FC level, the DC level and the MC level or the project level organizations. IOs feel that the existing structures are appropriate for the management of the system. Also they feel that the present leaders are appropriate. Most of them confirmed that the operation of part or all of the scheme is done by the farmers. When farmers are not doing operations, there is agency involvement in medium schemes but not in the case of minor scheme. IOs mentioned that the maintenance is also done by the farmers. Although this is correct to a certain extent in the minor schemes, it is not so in the case of medium schemes and major schemes. This is a contradictory point reported from the results of the study. Around 70 percent IOs reported that the FOs under their command had undertaken business activities like selling inputs.

Farmers in minor schemes know that FOs have funds but only a few of them in medium schemes know about it. However, they are satisfied with handling funds and they are confident of the present leaders. A very small number (less than 15 percent) from both minor and medium schemes said that leaders do not report funds to the membership, leaders use funds for their own benefit and do not use funds for the benefit of the FO members. The fund situation of the FOs varies from Rs 100.00 to Rs 80,000.00. There are assets like tractors and buildings belong to some of the FOs. The main source of income is the membership fee or the shares from farmers. The second source is from construction contracts. In medium schemes, the FOs receive O&M allocation from the agency as another major source of income. There are rules specifying how much can be spent by OBs and the committee members. This has been reported by less than 50 percent of the sample of OBs. More than 60 percent said that the FO does not need approval from the agency officers for withdrawal of funds from the bank. More than 50 percent reported that the finances are reported to the general membership annually. There are FOs where the situation of finances is never reported to the membership.

Rehabilitation of the scheme, improved irrigation services, resolution of disputes and improved relations with other farmers and better group morale are the major and direct benefits from the FOs to the farmers. Decreased cost of production, increased yield and income and betterment of farmer life are the secondary (indirect) benefits for them. According to the OBs, In achieving these benefits, there are problems like lack of corporation from farmers, lack of resources, and lack of corporation from the agencies. In minor schemes, all these were given equal weight by the OBs (30-35 percent) while more than 70 percent of medium scheme OBs reported that the lack of corporation from farmers is the major problem in achieving benefits. IOs mentioned lack of corporation from farmers, lack of resources and lack of corporation from the government agencies as the barriers in achieving these benefits from the FOs. Although it is reported by a few IOs, lack of interest of economically powerful farmers, lack of knowledge, lack of interest of the officers, lack of coordination between agencies and political problems are other barriers in achieving benefits from FOs.

There are no Project Management Committees (PMC) in any of the minor schemes as all the minor schemes have one FO each. The PMC consists of the representatives from all FOs in a medium scheme. PMCs were not found in all medium schemes at the time of the study. Seasonal planning, solving irrigation problems, planning work on rehabilitation are the major activities of the PMC.

Agency support. The DAS is the main agency supporting FOs in minor schemes and the ID's help is very limited. The ID helps FOs where the ID is the implementing agency of rehabilitation of the scheme. In case of medium schemes the main agency is the ID. But DAS is also helping FOs to the same level. Organizing meetings, technical advice on O&M and rehabilitation, training on O&M and rehabilitation, encouragement, attendance at meetings and assistance in solving problems are the kind of support given by ID or PEU to the FOs. In medium schemes the ID gives this support while in minor schemes either the ID or the PEU gives support, depending on the implementing agency. Support from the DAS was reported heavily in minor schemes compared to medium schemes. This is because the DAS is the implementing agency in the case of some minor schemes. Conducting meetings, accounting, agriculture, rehabilitation, organizational management, and irrigation system O&M are the major areas on which the training was provided to the FOs by the DAS. In addition to the training, the DAS provides other support like providing inputs, assist FOs in handling funds, attending FO meetings, encouragement and awareness meetings, helping in registration, organizing meetings, coordination with other agencies and providing agricultural equipment to improve the FO, to make it an important activity in the farming community. In some medium

schemes the IMD is the agency that helped create FOs. Most of the IOs pointed out their difficulties in working with FOs. The major difficulty is lack of transportation. The other is lack of support from the other agency offices.

Awareness of the farmers on the presence of an IO in the scheme is satisfactory. They are also satisfied with the assistance given by the IO. Organizing meetings, training and advising farmers in O&M and rehabilitation, carrying messages to and from farmers and officers, auditing FO accounts, assisting FOs to solve problems with agencies and help resolve disputes among farmers are the duties of the IO. Except in one medium scheme, all the FOs get assistance from an IO. OBs too are satisfied with the IO's assistance in FO activities. In general, DOs are satisfied with the work of IOs in minor schemes compared to the work of IOs in medium schemes.

Almost all the farmers are aware of the NIRP. Most of them received information from the DO while some others received information from the FO and also from Irrigation and Agricultural officers. About 1 percent of farmers got information from the mass media. Fixing structures, lining canals, improving tank capacity, turnover of O&M responsibilities to the FOs, fixing roads and getting more water to the scheme are the NIRP activities undertaken in the sample schemes.

Rehabilitation Planning and Design

More than 50 percent farmers and the majority of OBs said that O&M plans for post-rehabilitation were discussed in the planning and designing stage of rehabilitation. OBs and many others expect that the changes would improve the irrigation services significantly. Farmers participated in walk-through surveys, in meetings with officers of the implementing agencies, and in farmer meetings. Results indicated that the participation is less in medium schemes than in minor schemes. The reason for this is that rehabilitation had not commenced in some of the medium schemes. The feeling of IOs is that the farmers' participation in planning and design is adequate. More than 50 percent farmers said that they did not have any difficulties in understanding what was discussed at the planning meetings. Farmers' suggestions were also incorporated into the plans. Only 16-18 percent farmers informed that very important items suggested by them were not included in the plans. The major reason they have been given for this lapse is that there were not enough funds to accommodate those requests.

According to the DOs farmers are satisfied with the rehabilitation plans where their suggestions were incorporated into the plans. However, DOs denied the statements of farmers that the specific O&M plans were discussed at the planning stage meetings. It seemed that the OBs and the ordinary farmers have got this question confused. But DOs were with the farmers on the issue that the rehabilitation would improve irrigation services significantly. Most of DOs feel that there are not many problems in getting farmers' participation in rehabilitation.

Ratification meetings had been held in most of the minor schemes but less than 50 percent of OBs in medium schemes reported so. The main reason for this low percentage is that rehabilitation had not commenced in some medium schemes. Around 50 percent of OBs said that a formal agreement between agency and the FO were signed but other 50 percent denied this. However, according to the TAs' opinion ratification meetings were held. But a formal agreement between the agency and the FO had not been signed.

According to TAs, farmers are responsible for system management in minor schemes. There is only one TA responsible for system management in medium schemes. Inefficient water supply, system physical

deficiencies, poor distribution performance, inadequate resources for O&M and inadequate corporation among farmers are the problems in system O&M. Some items demanded by farmers were not included in the plans because NIRP rules did not allow funding those, there were not adequate funds or because there were technical reasons.

Ten Percent Contribution

Farmers were aware that they had to contribute 10 percent of the cost of rehabilitation through FOs. Most of them did not know the value of the contribution. The main form of contribution is labor for earthwork and other works. These targets are achieved by individual assignments and practicing shramadana in some instances. Even though the problem of getting labor for this work is reported, it is not significant. Fifty seven percent minor scheme and 21 percent medium scheme OBs reported that the 10 percent work was not completed according to schedules. However, the number of OBs who have given reasons for this delay is very low. For medium schemes, the delay is mainly because the work had not begun yet. For minor schemes, the reason is the difficulty in getting labor. The major reason for the difficulty in getting labor is that the farmers are not aware of the benefits of rehabilitation. The other reasons which have not received priority are that part-time or short-term farmers neglect the work and that there was no way of enforcing the FO rules. Most of the DOs do not see any difficulties in getting labor for this work. Less than 40 percent of DOs said that this 10 percent work was not going according to the schedules. The major reason for this was rain or flood. TAs reported that the major problem in getting farmers' participation is lack of interest by the farmers.

Construction Contracts

Fifty percent of the farmers reported that their FOs have taken construction contracts. But these were taken by FO OBs on sub-contract. In some places it was managed by the FO as a unit. In some other places outsiders had taken subcontracts. A very small percentage of farmers was involved in these activities by themselves. About 12 - 16 percent had worked as wage laborers in the contract works. However, around 70 percent farmers were satisfied with the work done by the FO. Around 30 percent said that FOs made a profit out of these contracts. Some (30-35%) said that they were not aware of these profits. According to the OBs most of the construction contracts taken by the FO are managed by the FOs. Sub-contracting to FO members and also to outsiders has been reported. The main source of capital is either contributions of FRs or of the general farmers. For these contract works, FOs hire labor from within the FO and from outside. Sometimes, the FOs had organized shramadana to complete part of the contracted work. FOs faced difficulties in obtaining material for this work the major reason being lack of funds. The nonavailability of materials and transport also pushed them into difficulties.

The agencies gave levels, took measurements, and made payments, in time, according to the most of OBs. Also the agency provided adequate technical support. But a very low number reported that they made profits out of contracts due to poor planning and lack of experience. Around 15 percent of them reported that the FO earned income through subcontracting. IOs reported that the major difficulties faced by the FOs in construction contracts are lack of resources, lack of knowledge, lack of management abilities, and lack of experience. According to DOs in some places FOs had refused the offered contracts as the FOs were not economically strong for such a venture. However, farmers were learning technical and managerial

experiences where they had taken contracts. The FOs that had taken contracts were also increasing their funds significantly through contracting. The experiences of weakening FOs by creating dissension over funds were reported rarely. The TAs had a different opinion that contracts in most of the cases are managed by the FOs and sometimes given out to the members of the FOs. Sometimes, FOs delayed completing work because of lack of operating capital. TAs provided the necessary technical advice to the FOs in construction contracting.

Construction Supervision

Only two-thirds of the farmers in medium schemes reported that rehabilitation had begun in their scheme. All the minor schemes were under rehabilitation by that time. Responses to the question on construction supervision were very low. Around 50 percent said that FO prepared plans for this purpose and plans were carried out. According to a few farmers, they were given training on the subject either by the DAS officers or by the IOs. However, the general feeling is that this activity helped improve the quality of the construction work. OBs informed that the farmers were given training on construction supervision. This training was provided by the officers of the ID and the DAS and by the IOs. Implementing agencies agreed upon the plans prepared by the FO for construction supervision. OBs confirmed that supervision by farmers improved the quality of work. The DO helped prepare plans for construction supervision and those plans were carried out. It was only in a few places that the DOs reported problems in this FO activity. According to the TAs, training was given to farmers by the officers in the DAS and the ID and also they assisted in preparing plans. No serious problems arose but it helped increase the quality of the work.

Turnover

Around 90 percent of farmers expressed their willingness and ability to take over O&M responsibilities of the schemes. The majority of OBs are also with the ordinary farmers' view that the FOs are able to manage the system successfully following rehabilitation. More than 80 percent of DOs express the ability of minor scheme FOs to take over the O&M responsibility of the schemes. This was only 40 percent DOs for the medium schemes. Because rehabilitation had not started in some medium schemes the percentage was less as the respective DOs were not able to comment on this situation. Most of the IOs also expect that farmers are able to successfully manage the schemes. They suggest reorganization of the FOs, more training and advice on O&M, a longer period of support from the IO, and funds from the government to improve the FOs. TAs were also confident of the ability of FOs in this task. Only 20 percent TAs said it was difficult for FOs as they do not have the required technical knowledge, experience and management abilities.

This study was undertaken at a time when the sample schemes were under rehabilitation. Overall, results make most of the issues raised by the Phase I of the study redundant. It does not mean that all the problems that had arisen in the Phase I sample have been solved during the course of the project. One thing is that the sample in Phase I represents pilot schemes which had problems in implementing. The problems given in the Phase I report can also be observed within the sample of Phase II. But the Phase II gives a positive result showing that the objectives of the project on FOs can be achieved. There are site-specific problems in implementing the project. Because the project is on, as usual, we have received positive results but it is difficult to predict the sustainability of the FOs. Post-evaluation must be carried out after sometime

after the O&M of the schemes are handed over to the FOs. However, if farmers and officers involved have the will and the commitment to do this, it is not an insurmountable task.

Bibliography

Abeysekara, W.A.T. 1986. Farmer participation in irrigation rehabilitation and management: The case of Tank Irrigation Modernization Project. In *Proceedings of the Workshop on Participatory Management in Sri Lanka's Irrigation Schemes* held at International Irrigation Management Institute (IIMI), Digana Village, Sri Lanka from 15-17 may 1986, Digana Village, Sri Lanka. pp. 111-125.

Abeywickrama, N. 1986. Government policy in participatory irrigation management. In *Proceedings of the Workshop on Participatory Management in Sri Lanka's Irrigation Schemes* held at International Irrigation Management Institute (IIMI), Digana Village, Sri Lanka from 15-17 may 1986, Digana Village, Sri Lanka. pp. 17-28.

Alwis, J. 1986. Irrigation Legislation and Participatory management. In *Proceedings of the Workshop on Participatory Management in Sri Lanka's Irrigation Schemes* held at International Irrigation Management Institute (IIMI), Digana Village, Sri Lanka from 15-17 may 1986, Digana Village, Sri Lanka. pp. 28-39.

IIMI. 1990a. *Role of social organizers in assisting farmer-managed irrigation systems*. Proceedings of a regional work shop held at Khon Kaen, Thailand from 15 to 20 may 1989, Colombo Sri Lanka

IIMI. 1990b. *Design issues in farmer-managed irrigation systems*. Proceeding of an International Workshop held at Chiang Mai, Thailand, 12-15 December 1989, Colombo Sri Lanka

IMPSA. 1991. Irrigated agriculture and irrigation management in Sri Lanka: Vision for the next decade and beyond. IMPSA Policy Paper No.1, Colombo, Sri Lanka.

Lubis, S. 1990. Community organizers and farmer participation: A case study of traditional irrigation systems in South Sumatra, Indonesia, In *Role of social organizers in assisting farmer-managed irrigation systems: Proceedings of a regional workshop held at Khon Kaen, Thailand from 15 to 20 may 1989*, eds. Manor, S., S. Patamatamkul, S., and M. Olin. Colombo, Sri Lanka. pp. 41-47.

Martin, E.D. and R. Yoder. 1988. Organizational structure for resource mobilization in hill irrigation systems. In *Irrigation management in Nepal: Research papers from a national seminar*. Kathmandu, Nepal. pp. 86-102

Paranavithana, S. 1958. Some regulations concerning village irrigation works in ancient Ceylon. *The Ceylon Journal of Historical and Social Studies* 1(1). Colombo, Sri Lanka.

Perera, J. 1986. The Gal Oya Farmer Organization Program: A learning process. In *Proceedings of the workshop on participatory management in Sri Lanka's irrigation schemes held at the International Irrigation Management Institute (IIMI), Digana Village, Sri Lanka from 15 to 17 May 1986, Digana Village, Sri Lanka*. pp. 86-110.

Pradhan, P., K. Giri, and N. Tiwari. 1988. Resource mobilization and organizational support in irrigation system management: Experiences from Kulariya, Jamara, and Rani Kulos of Kalari District. In *Irrigation management in Nepal: Research papers from a national seminar*. Kathmandu, Nepal. pp. 103-116.

Pradhan, P. 1989. *Patterns of irrigation organization in Nepal: A comparative study of 21 farmer-managed irrigation systems*. Colombo, Sri Lanka

Sakthivadivel, R., and S.N. Killapiran. 1990. Role of institutional organizer in assisting farmers to participate in the rehabilitation of tank systems. In *Role of social organizers in assisting farmer-managed irrigation systems: Proceedings of a regional work shop held at Khon Kaen, Thailand from 15 to 20 May 1989*, ed. S. Manor, S., Patamatamkul, and M. Olin. Colombo, Sri Lanka. pp. 25-31.

Shrestha, S.P. 1988. Multi-functional, non-residential irrigation organization: A case study of Kondu Irrigation System of Kathmandu Valley. In *Irrigation management in Nepal: Research papers from a national seminar*. Kathmandu, Nepal. pp. 39-46

TEAMS. 1992. *Performance evaluation survey of Village Irrigation Rehabilitation Project*. Draft final report submitted to the Irrigation Department, Sri Lanka, March 1992. Consultants in Technology, Management & Development Studies. Colombo, Sri Lanka.

World Bank. 1991. *Staff appraisal report of the World Bank on National Irrigation Rehabilitation Project in Sri Lanka, May 1991*. Report No. 9425-CE, Agriculture Operations Division, Country Department I, Asian Region.