

Farmers participation in Rehabilitation - Process and Impacts

Report of the Phase II of the Study on Monitoring Farmer participation in
Rehabilitation

Draft Report - June 7, 1995
J. Upasena, Research Officer, IRMU/SLFO-TIMI

Irrigation Research Management Unit of the Irrigation Department
Sri Lanka Field Operations of the International Irrigation Management Institute

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 S rules against defaulters are the major problems.

Sub contracting the construction contracts taken by FO to outsiders or to members of the FO are evident. Although it is said that FO S manage it as a unit, few able members doing it on sub contract. Number of farmers who worked in the contract works is very low. Lack of knowledge and experience, lack of resources and management abilities are the problems faced by FO S in construction contracting. However agencies support them in full capacity to achieve quality work at last.

FO S involved in construction supervision with the help of agencies which ultimately helped improve the quality of work. Farmers expressed their willingness to take over the O&M of the schemes and agency officers confirmed it. When the active implementation of the NIRP commenced it has been able to achieve more in the objective of farmer participation in rehabilitation. However the sustainability of the FO S are still in question. Post project evaluation will provide answer for that. However with the due will and the commitment, FO S are not an unachievable task.

List of Tables

Table 1 : Sample of the Ordinary Farmers in sample schemes	-5-
Table 5.1.1: Educational level of the sample farmers	-9-
Table 5.1.2: Sources of income of the sample farmers	-10-
Table 5.1.3: Land holding size	-10-
Table 5.1.4: Types of operations on your channel (before rehabilitation)	-11-
Table 5.1.5: Activities of the FO indicated by the farmers	-12-
Table 5.1.6: Reasons for why farmers satisfied with the leadership . . .	-13-
Table 5.1.7: Reasons for why farmers not satisfied with handling funds .	-13-
Table 5.1.8: Benefits from the FO s as indicated by the farmers	-14-
Table 5.1.9: Activities of the PMC	-14-
Table 5.1.10. Duties of the IO	-15-
Table 5.1.11. NIRP activities in the sample schemes	-16-
Table 5.1.12. How farmers participared in Planning and designing of rehabilitation	-16-
Table 5.1.13. Reasons for not included very important items in the plans	-18-
Table 5.1.14. The way FO s managed to do contracts	-19-
Table 5.2.1: Sources of income	-20-
Table 5.2.2: Composition of the sample	-20-
Table 5.2.3: Distribution of the land holding sizes	-21-
Table 5.2.4: Types of operations on your channel (before rehabilitation)	-22-
Table 5.2.5 : Activities of the FO indicated by the farmers	-23-
Table 5.2.6: Sources of income for the FO	-24-
Table 5.2.7. Benefits from the FO s as indicated by the office bearers .	-25-
Table 5.2.8. Problems in achieving the benefits	-25-
Table 5.2.9 : Activities of the PMC as indicated by the office bearers .	-26-
Table 5.2.10 : Agencies supported to form FO s	-26-
Table 5.2.11 : Support given by ID/PEU to FO	-27-
Table 5.2.12. Support given by DAS to FO	-27-
Table 5.2.13 : Duties of IO	-28-
Table 5.2.14 : NIRP activities in the sample	-29-
Table 5.2.15 : Farmer participation in planning activities	-29-
Table 5.2.16 : Reasons for not understanding meetings	-30-
Table 5.2.17 : Reasons for not including important items into plans . .	-30-
Table 5.2.18 : Reasons for delaying 10% work	-31-
Table 5.2.19 : Reasons for difficulties in getting labor	-31-
Table 5.2.20 : The way FO s did contracts	-32-
Table 5.2.21 : The way FO find capital for contracts	-32-
Table 5.2.22 : The way FO recruit labor for contracts	-33-
Table 5.2.23 : Difficulties in obtaining materials	-33-
Table 5.2.24 : Efforts planned for construction supervision	-34-
Table 5.2.25 : Problems arose during construction supervision	-35-
Table 5.2.26 : Reasons to why FO s cannot manage system O&M well . . .	-35-
Table 5.3.1: Training provided by DAS to develop FO s	-36-
Table 5.3.2: Other support provided by DAS to develop FO s	-37-
Table 5.3.3: Duties of the IO	-38-
Table 5.3.4: How farmers take part in the planning activities	-39-
Table 5.3.5: Difficulties for getting farmers participation	-39-
Table 5.3.6: Reasons for not 10% work not going according to the schedules	-40-
Table 5.3.7: Difficulties in getting labor for 10% work	-40-
Table 5.3.8: Problems arose during construction supervision	-41-

TABLE OF CONTENTS

List of Tables	iii
Acronyms	vi
1. Introduction	-1-
1.1. Goals of farmer participation.	-1-
2. Objectives	-2-
3. Method	-3-
3.1. Sample	-4-
4. Literature review	-6-
5. Results	-9-
5.1. Ordinary farmers	-9-
5.1.1. Sample characteristics	-9-
5.1.2. Farmer Organization (FO)	-11-
5.1.3. Rehabilitation Planning and Design	-15-
5.1.4. 10% contribution	-18-
5.1.5. Construction Contracting	-18-
5.1.6. Construction Supervision	-19-
5.1.7. Turn Over	-19-
5.2. Farmer organization office bearers (FOOB)	-20-
5.2.1. Sample characteristics	-20-
5.2.2. Farmer Organizations	-22-
5.2.2.1. Agency support	-26-
5.3. Rehabilitation Planning and Design	-28-
5.2.4. 10% Contribution	-31-
5.2.5. Construction Contracting	-32-
5.2.6. Construction Supervision	-34-
5.2.7. Turnover	-35-
5.3. Institutional development officers (Divisional Officers of the DAS)	-36-
5.3.1. Sample characteristics	-36-
5.3.3. Rehabilitation Planning and Design	-38-
5.3.4. 10% Contribution	-40-
5.3.5. Construction Contracting	-41-
5.3.6. Construction Supervision	-41-
5.3.7. Turn Over	-42-
5.4. Institutional organizers (IO)	-43-
5.4.1. Sample characteristics	-43-
5.4.2. Farmer Organization	-43-
5.4.2.1. Agency support	-46-
5.4.3. Farmer Participation in Rehabilitation	-47-
5.4.4. Turn Over	-48-

List of Tables

Table 1 : Sample of the Ordinary Farmers in sample schemes	-5-
Table 5.1.1: Educational level of the sample farmers	-9-
Table 5.1.2: Sources of income of the sample farmers	-10-
Table 5.1.3: Land holding size	-10-
Table 5.1.4: Types of operations on your channel (before rehabilitation)	-11-
Table 5.1.5: Activities of the FO indicated by the farmers	-12-
Table 5.1.6: Reasons for why farmers satisfied with the leadership . . .	-13-
Table 5.1.7: Reasons for why farmers not satisfied with handling funds .	-13-
Table 5.1.8: Benefits from the FO s as indicated by the farmers	-14-
Table 5.1.9: Activities of the PMC	-14-
Table 5.1.10. Duties of the IO	-15-
Table 5.1.11. NIRP activities in the sample schemes	-16-
Table 5.1.12. How farmers participated in Planning and designing of rehabilitation	-16-
Table 5.1.13. Reasons for not included very important items in the plans	-18-
Table 5.1.14. The way FO s managed to do contracts	-19-
Table 5.2.1: Sources of income	-20-
Table 5.2.2: Composition of the sample	-20-
Table 5.2.3: Distribution of the land holding sizes	-21-
Table 5.2.4: Types of operations on your channel (before rehabilitation)	-22-
Table 5.2.5 : Activities of the FO indicated by the farmers	-23-
Table 5.2.6: Sources of income for the FO	-24-
Table 5.2.7. Benefits from the FO s as indicated by the office bearers .	-25-
Table 5.2.8. Problems in achieving the benefits	-25-
Table 5.2.9 : Activities of the PMC as indicated by the office bearers .	-26-
Table 5.2.10 : Agencies supported to form FO s	-26-
Table 5.2.11 : Support given by ID/PEU to FO	-27-
Table 5.2.12. Support given by DAS to FO	-27-
Table 5.2.13 : Duties of IO	-28-
Table 5.2.14 : NIRP activities in the sample	-29-
Table 5.2.15 : Farmer participation in planning activities	-29-
Table 5.2.16 : Reasons for not understanding meetings	-30-
Table 5.2.17 : Reasons for not including important items into plans . .	-30-
Table 5.2.18 : Reasons for delaying 10% work	-31-
Table 5.2.19 : Reasons for difficulties in getting labor	-31-
Table 5.2.20 : The way FO s did contracts	-32-
Table 5.2.21 : The way FO find capital for contracts	-32-
Table 5.2.22 : The way FO recruit labor for contracts	-33-
Table 5.2.23 : Difficulties in obtaining materials	-33-
Table 5.2.24 : Efforts planned for construction supervision	-34-
Table 5.2.25 : Problems arose during construction supervision	-35-
Table 5.2.26 : Reasons to why FO s cannot manage system O&M well . . .	-35-
Table 5.3.1: Training provided by DAS to develop FO s	-36-
Table 5.3.2: Other support provided by DAS to develop FO s	-37-
Table 5.3.3: Duties of the IO	-38-
Table 5.3.4: How farmers take part in the planning activities	-39-
Table 5.3.5: Difficulties for getting farmers participation	-39-
Table 5.3.6: Reasons for not 10% work not going according to the schedules	-40-
Table 5.3.7: Difficulties in getting labor for 10% work	-40-
Table 5.3.8: Problems arose during construction supervision	-41-

5.5. Irrigation officers (Technical Assistants - TA)	-50-
5.5.1. Sample characteristics	-50-
5.5.2. Irrigation and Agriculture Situation of the Scheme	-50-
5.5.2.1. Agency support	-52-
5.5.3. Rehabilitation Planning and Design	-52-
5.5.4. 10% contribution	-55-
5.5.5. Construction contracting	-56-
5.5.6. Construction supervision	-56-
5.5.7. Turnover	-57-
6. Conclusion	-57-
6.1. Farmer Organization	-57-
6.1.1. Agency support	-60-
6.2. Rehabilitation Planning and Design	-61-
6.3. 10% contribution	-62-
6.4. Construction Contracts	-63-
6.5. Construction Supervision	-64-
6.6. Turn Over	-64-
References	-66-

Table 5.4.1: Existing structures of the FO s	-43-
Table 5.4.2: Reasons for the leaders are not appropriate	-44-
Table 5.4.3: Reasons for not doing maintenance well.	-44-
Table 5.4.4: Benefits to the farmers from the FO s	-45-
Table 5.4.5: Problems in achieving benefits	-46-
Table 5.4.6: Activities of the IO	-47-
Table 5.4.7: Difficulties faced by the FO s in contracting	-48-
Table 5.4.8: Suggestions to improve the FO s	-49-
Table 5.5.1: Problems in system O&M	-51-
Table 5.5.2: Support given to FO s by the agencies	-52-
Table 5.5.3: Items done by NIRP	-54-
Table 5.5.4: Changes in operation after rehabilitation	-54-
Table 5.5.5: Problems in getting farmer participation	-55-
Table 5.5.6: Reasons for not completing 10% work on schedule	-55-
Table 5.5.7 : Kind of help given to the FO in construction contracts . .	-56-

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

FARMERS PARTICIPATION IN REHABILITATION - PROCESS AND IMPACT

1. Introduction

National Irrigation Rehabilitation Project (NIRP) is one of the major development projects undertaken by the government of Sri Lanka which was proposed to implement ^{again} in a seven year period starting from 1991 to ~~1997~~. Estimated cost of NIRP is over US\$50 million which is provided ^{by} from the IDA, the EEC, World Bank and the government of Sri Lanka. Although it ^{planned to start} ~~was proposed to implement~~ in 1991, actual implementation began in 1993. ~~Therefore the project period will go beyond the year 1997.~~ The NIRP aims to rehabilitate 1000 minor schemes and 60 major/medium schemes. A major aspect of this project compared to previous rehabilitation projects is to get farmers participation in rehabilitation process and to hand over the O&M responsibilities of the rehabilitated schemes to the farmers. Therefore establishing farmer organizations (FO) in the schemes selected for rehabilitation is a vital need in achieving this objective (World Bank 1991).

1.1. Goals of farmer participation.

Goals of farmer participation in rehabilitation can be defined in two folds;

1. To achieve better rehabilitation which means to cost effectiveness and the better quality
2. Preparing farmers for management of O&M of the rehabilitated schemes through strengthening FO s through group work experiences and providing funds, giving technical knowledge needed for maintenance and creating sense of ownership.

In achieving these goals, NIRP expects to incorporate farmers suggestions in rehabilitation planning and design to assure that the rehabilitation would do what exactly required by farmers and not impose what bureaucrats need as it happened in the previous rehabilitation projects which was unable to achieve expected results and were criticized by farmers as it was not the way they wanted. In implementation of rehabilitation, NIRP expects farmers contribute 10%

of the base cost of rehabilitation which help to achieve the goal of cost effectiveness and to increase group morale of the farmers which is required for future O&M activities to be a successful venture. Also they can actively engage in rehabilitation having construction contracts which simultaneously gives them an opportunity to raise funds for the FO and to have some knowledge and experience for handling future O&M activities and to achieve better quality of the work. The implementing agencies provide them with required training for these activities and continuous support to achieve their targets. FO s can help the implementing agencies in supervision of the work done by private contractors to ascertain the quality of work to the satisfaction of the FO. Agencies are supposed to help FO s in preparing schedules and procedures for supervisory activities and to respond to reports of FO to correct if anything goes wrong.

At the initial phase of implementation, NIRP wanted to have feed back from the work that was already done and IRMU of the ID in collaboration with the SLFO of IIMI launched a study to monitor farmers involvement in rehabilitation at the request of NIRP. RRA was carried out as the first phase of this study in five selected schemes which were being rehabilitated under NIRP in latter part of 1993. [1] 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 to a comprehensive analysis of the problem with a better data base.

2. Objectives

The objectives of the study remain 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 FO and suggest suitable alternative options wherever applicable.

Therefore, the objectives of this study are:

1. To evaluate the strength and preparedness of the farmer organizations.

2. To assess farmer involvement in rehabilitation planning and implementation.
3. To evaluate the contributions of farmer participation in rehabilitation to preparing the FO s 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.
4. To determine the constraints to effective farmer participation in rehabilitation in the sample schemes.

3. Method

The method used to collect information is different from phase I. Here it was adopted a questionnaire survey in a larger sample which aimed to have 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.

- a) Irrigation Officers (Technical assistant responsible for implementing the rehabilitation - TA)
- b) Institutional Development Officers (Divisional Officer - DO of the DAS - who is in-charge of the agrarian division to which the scheme is belonged.
- c) Institutional Organizer - IO - in the scheme
- d) Farmer Organization Office Bearers - FOOB - maximum two
- e) Ordinary Farmers - OF - a representative sample in each scheme

Agents from (a) to (d) were individually interviewed by the research officers in the institute from July to December 1994 and sample of the OF s was interviewed by the trained and experienced investigators who were deployed in the field in forth quarter of 1994.

3.1. Sample

15 minor schemes and 5 medium schemes were selected using random numbers respectively from a list of 157 minor schemes and from a list of 42 major/medium schemes which were received from NIRP where the rehabilitation was initiated by mid 1993. Sample of ordinary farmers in each scheme was decided on the basis of number of farmer families in the schemes. Criteria of selecting the number as follows. As the maximum number of farmer families in the sample schemes was around 100, 10 farmers were selected if this number is below 33, 15 were selected if the number is between 33 - 66 and 20 farmers were selected if the number is above 66. Table 1 gives some basic information of the distribution and the size of the sample. In medium schemes where the number of FO s is more than one compare to the single FO in minor schemes, 2 to 3 FO s were selected representatively and sample of farmers was drawn randomly according to the above criteria.

The total sample in each category is as follows;

a) Irrigation Officers - TA	20
b) Institutional Development Officers - DO schemes)	19 (one represent two
c) Institutional Organizer - IO Uyanwatta 0)	21. (Borala and Dewahuwa 2,
d) Farmer Organization Office Bearers - FOOB	49
e) Ordinary Farmers - OF	448

Table 1 : Sample of the Ordinary Farmers in sample schemes

Scheme	District	Agency	ASC	Sample size
Minor Schemes				
Haltota Anicut	Kalutara	ID/Kalutara	Millaniya	15
Halpanbissa Anicut	Galle	DAS	Baddegama	17
Kimbulawala Anicut	Galle	DAS	Niyagama	17
Iltawala 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	Gambirisgas	21
Gonewa Tank	Anuradhapura	PEU	Kallanchiya	21
Elapath Wewa	Anuradhapura	PEU	Galenbindunu	15
Paluwaddana Wewa	Polonnaruwa	DAS	Hingurakgo	16
Aulegama Wewa	Kurunegala	ID/Nikawerati	Mahagirilla	19
Ihala Kadadeka Wewa	Kurunegala	ID/Galgamuwa	Moragollaga	18
Medium Schemes				
Uyanwatta Tank	Kalutara	ID/Kalutara	Bandaragama	41
Borale Tank	Matara	ID/Matara	Weligama	41
Buttala	Monaragala	ID/M'gala	Buttala	41
Dewahuwa Tank	Matale	ID/Dambulla	Dewahuwa	61
Erige Oya	Polonnaruwa	ID/Minneriya	Hingurakgo	20

448

4. Literature review

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 new management policy for the irrigation sector which increase the participation and responsibilities of the farmers and reduce the role of the public sector (World bank 1991). By the end of 1990s, farmers will be responsible for 100 percent of the O&M cost of the portions of irrigation systems under their management. During the 1990 s, 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 farmers' organizations which would take over increasing management responsibility (IMPISA 1991).

Participatory management (PM) 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 decision making process or system development and management to farmers (IIMI 1990₂). This has been the practice even in ancient time and there had been adopted customary laws and regulations in managing irrigation schemes (Abeywickrama 1986, Parनावithana 1958). Proper maintenance of irrigation schemes by farmers was the principle consideration which motivated the colonial government to revive ancient customs relating to paddy cultivation. PM has been legislated through Irrigation Ordinance with the provision for *Kanna* meeting (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 cost of O&M of the irrigation schemes and incur 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 not like in the case of minor village schemes, PM in major schemes was difficult. But in the course of time, examples like *Kimbulwana* proved that it is feasible to develop PM with sustained effort and an enlightened

leadership (Abeywickrama 1986). The lessons from the Gal Oya farmer organization program provide guidelines in developing farmer organizations (FO) (Perera 1986). The experiences of TIMP, it has also been emphasized the farmer involvement in the projects which brings improvements to the schemes. It has also suggested 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 the farmer involvement (Abeysekara 1986).

From the experiences in Nepal, It has been revealed that the FO S within a systems are not same throughout the system. They have 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, in order to perform effectively, FO should not remain static. To adapt the changing needs of the system, FO, its rules, leaders, and structure should also adapt to accommodate new situations (Pradhan, Giri and Tiwari 1988). Experiences from India shows 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 villages in India. But there exists a general awareness in 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 on the positive results achieved through the active participation of the beneficiaries in the process of design and construction (Lubis 1990, IIMI 1990_o). FO S can execute the work with the assistance of the government. Contractors should be kept out of these 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 1990_a, Pradhan 1989). For the best results FO S should be strengthened with the assistance of the IO S. The IO S help attaining following benefits (IIMI 1990_o).

- Cohesiveness among farmers
- Reduce social problems attribute to irrigation development
- Improved equity in water distribution
- Greater certainty of water delivery

- Enhance internal resource mobilization to sustain O&M through farmer participation
- Increased capital build-up and improved self-reliance

5. Results

The results of the questionnaire survey are presented in this section. Outcome of the five questionnaires are explained separately in sub sections. This section will be followed by the section of conclusion which discuss and interpret the results of this section.

5.1. Ordinary farmers

5.1.1. Sample characteristics

Out of 448 farmers interviewed, 244 farmers are from 15 minor schemes and 204 farmers are from 5 medium schemes. 20 females from minor schemes and 15 females from medium schemes have been included in the sample. Education level of farmers revealed that 50% of the minor schemes farmers are fallen in the category of attended school for 6 to 10 years. Only 43% of medium scheme farmers belong to this group and 44% of them are in the category attended school from 1 to 5 years.

Table 5.1.1: Educational level of the sample farmers

Minor		Medium			
Level of education		Number	%	Number	%
a)	no formal education	8	3.3	11	5.4
b)	1-5 years	95	38.9	90	44.1
c)	5-10 years	121	49.6	87	42.6
d)	11-12 years	18	7.4	11	5.4
e)	more than 12 years	2	0.8	2	1.0

Main source of income of 90 % of sample farmers in both minor and medium schemes is agriculture. Around 16% in minor schemes and 11% in medium schemes are doing salaried employment. 9% of both minor and medium farmers are involved in trading while 18% from minor and 9% from medium farmers involved in some other income generating activities which are not regular in nature.

Table 5.1.2: Sources of income of the sample farmers

Minor			Medium	
Source	No	%	No	%
a) Agriculture	219	89.8	185	90.7
b) Salaried employment	40	16.4	23	11.3
c) Trading	23	9.4	18	8.8
d) Other (not specified)	45	18.4	19	9.3

Maximum land holding size in minor schemes in both low land and high land is 10 acres. Minimum of that is 0.25 ac in low lands and 0.15 ac in high lands. In medium schemes, the maximum size in low land is 5.5 ac and in high land is 7 ac., and Minimum in both low land and high land is 0.25 ac. 39% of minor farmers and 30 % of medium farmers own low land of size below 1 ac. 34% of minor farmers and 32 % of medium farmers own low land of size between more than 1 ac and equal or less than 2 ac.

Table 5.1.3: Land holding size

Acres	Minor				Medium			
	Low land		High land		Low land		High land	
	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 privately own the piece of land. Location of the plots are well distributed along the canals (head, middle, tail) and well represented the scheme. However, the farmers opinion on the operations in the scheme before rehabilitation are varied. In minor schemes 81%, 79.5%, 55.5% and 43.9% said that they get continuous flow for land preparation and crop growth stages respectively in both maha and yala respectively while 13.5%, 16.45%, 23.8%, and 36.1% said that they get rotational issues. In medium schemes 98%, 96.1%, 34.3% and 31.9% said that they get continuous flow for land preparation and crop growth stages respectively in both maha and yala respectively while 0.5%, 2.5%, 64.2%, and 66.7% said that they get rotational issues. (table 4)

Table 5.1.4: Types of operations on your channel (before rehabilitation)

	Minor				Medium			
	CF	%	ROT	%	CF	%	ROT	%
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	196	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								

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

5.1.2. Farmer Organization (FO)

About 98% of the farmers in minor schemes are aware of the FO. This is only 87% for medium schemes. More than 80% of the farmers in both scheme types know the name of the FO. About 90% sample farmers in the minor schemes are members of the FO while it is 81 % in medium schemes. 87% in minor schemes know how much is the membership fee while it is 70 % in medium schemes. 88% of the minor scheme farmers know more or less accurately the time when FO was formed and it is only 78 % for medium schemes.

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

Table 5.1.5: 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)	helps to 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

More than 93% minor and 98% medium farmers said that the FR s are selected by the farmers themselves. 94% minor and 84% medium said that office bearers are selected by the general membership while 12.5% medium farmers said that the office bearers are selected by the FR S. However, 92% of medium farmers are satisfied with the present leadership but only 77% of minor farmers said so. More than 75% of farmers in both types confirmed the reasons as to why they satisfied with the leadership. Results are summarized in the table 6.

Table 5.1.6: Reasons for why farmers satisfied 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 towards one segment of the farmers	160	65.6	151	61.9

More than 90% of the farmers confirmed that they attend the general membership meetings. About 20% of the respondents from minor schemes and 17% of medium schemes attend committee meetings too. 35% minor and 12% medium farmers attend committee meetings rarely. 76% farmers from minor schemes said that the FO s have funds while about 22% of them do not know it exactly. In medium schemes only 11% responded affirmative. 67% minor farmers said that they are satisfied the way FO handles the funds while 79% of medium farmers declared that they are confident on the leaders. Table 7 summarizes the reasons for why some of the farmers do not satisfied with handling funds. Farmers pointed out the benefits they receive from the FO s and the results are summarized in table 8.

Table 5.1.7: Reasons for why farmers not satisfied with handling 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
e) not responded	208	85.2	190	93.1

Table 5.1.8: Benefits from the FO s 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 FO s in the schemes. The need for PMC would

not arise in the case of minor schemes since there is only one FO for each. However only 34% medium farmers responded that they have a PMC. This low figure is due to PMC was not formed yet in some medium schemes at the time of the study. The activities of the PMC as given by the farmers are presented in table 5.1.9.

Table 5.1.9: Activities of the PMC

	Medium schemes only		Done well	
	Number	%	Number	%
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

95% minor and 92% medium farmers said that DAS supported to form the FO. 62% minor and 64% medium said that it is IO. 11% minor and 4% medium said that IMD supported while 11% minor and 1.5% medium said the People's bank. 1.2 % of minor farmers said that it was GS who helped in firming FO s.

94% of minor farmers and 83% of medium farmers are aware of the presence of an IO. According to the farmers perception, they have given the activities of the IO as indicated in table 5.1.10. More than 80% of farmers in both type of schemes are satisfied with the assistance from the IO.

Table 5.1.10. Duties of the IO

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

5.1.3. Rehabilitation Planning and Design

Exactly 97.1% farmers from each category of scheme are aware of the NIRP. 47% in minor and 67% in medium farmers have received these information about FO s from the DO. 31% in minor and 10% in medium received those from the FO it self. 18% of both type from irrigation or agriculture officers and about 1% from the media. Following are the activities of NIRP in the sample schemes (table 5.1.11).

Table 5.1.11. NIRP activities in the sample schemes

	Major		Medium	
	Number	%	Number	%
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) fix roads	51	20.9	11	5.4
g) don't know	2	0.8	0	0.0

63% minor farmers and 55 % medium farmers said that O&M plan was discussed in planning and design stage of rehabilitation while 16% minor and 32% medium farmers answered negatively. 16% minor and 8% medium farmers were not aware of this. However more than 85% of the total sample expects that the changes in the O&M plan improve the irrigation service significantly after rehabilitation. Table 5.1.12 explains how farmers participated in planning and designing of rehabilitation.

Table 5.1.12. How farmers participated in Planning and designing 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
40.7				83	

58% minor and 49% medium farmers said that they did not have any difficulties in understanding what was discussed at the meetings 32% minor and 39% medium farmers did not answer the question. Only 10% minor and 5% medium farmers said that they could not understand the discussions at the meetings.

86% minor and 93% medium farmers said that their suggestions were incorporated into rehabilitation plans. 86% minor and 95% medium farmers are satisfied with the rehabilitation plans. Only 13% minor and 2.5% medium farmers are not satisfied with the plans. Also only 18% minor and 16% medium farmers have informed that very important items were not included in the rehabilitation plans. The reasons for not included these items are given in the table 5.1.13.

Table 5.1.12. How farmers participated in Planning and designing 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
40.7				83	

58% minor and 49% medium farmers said that they did not have any difficulties in understanding what was discussed at the meetings 32% minor and 39% medium farmers did not answer the question. Only 10% minor and 5% medium farmers said that they could not understand the discussions at the meetings.

86% minor and 93% medium farmers said that their suggestions were incorporated into rehabilitation plans. 86% minor and 95% medium farmers are satisfied with the rehabilitation plans. Only 13% minor and 2.5% medium farmers are not satisfied with the plans. Also only 18% minor and 16% medium farmers have informed that very important items were not included in the rehabilitation plans. The reasons for not included these items are given in the table 5.1.13.

Table 5.1.13. Reasons for not included very 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				

5.1.4. 10% contribution

79% minor and 74% medium farmers said that farmers are contributing to the rehabilitation work. More than 90% from both types know that the contribution as 10% of the cost. 67% minor and 90% medium farmers do not know the amount (money value) of the contribution in their schemes. Form of their contribution is mainly labor for earth works and labor for other works. 70% of both types said that the targets are achieved through individual assignments. 44% minor and 60% medium said it is by *Shramadana* also one way of getting these work done. 79% minor and 67% medium sample farmers had been involved in these activities by themselves. If they have not attended these work major reason was the work had not begun yet the time of study. 76% minor and 68% medium farmers said that the 10% work was completed according to the schedules. The places it was not so, 14% minor farmers said that it was due to the difficulties of getting labor. Reason of 25% medium farmers for this was that the work had not begun.

5.1.5. Construction Contracting

52% minor and 60% medium farmers said that their FO had taken construction contracts. Table 5.1.14 explains how they managed to do these work. 29% minor and 17% medium farmers had been involved by themselves in these activities. Although

this is very minor amount, they 12- 16% have worked as waged laborers in the contract works.

Table 5.1.14. The way FO s 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	

68% minor and 73% medium farmers said that they are satisfied with the work done by the FO. Only 28-29% said that the FO made profit from the contracts. 36% minor and 30% medium farmers did not aware whether FO made profit or not.

5.1.6. Construction Supervision

96% minor and 66% medium farmers informed that the construction work of their schemes had been begun. 25% minor and 34% medium farmers said that they were undergone a training on construction supervision. Although very small amount of farmers responded to the question who provided the training ID officers, DAS officers and IO s have been engaged in training farmers. 55% minor and 57% medium farmers said that the FO made plans for construction supervision and 54% minor and 41% medium farmers said that the prepared plans were carried out. 67% minor and 53% medium farmers said that supervision by the farmers helped to improve the quality of the construction work.

5.1.7. Turn Over

In the inquiry whether farmers wish to take over the O&M responsibility of the schemes after rehabilitation, 94% minor and 88% medium farmers expressed their willingness for it and 87% from both types express the ability of farmers to handle it.

5.2. Farmer organization office bearers (FOOB)

5.2.1. Sample characteristics

30 office bearers 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% of them have attended to school for 5 - 10 years. 27% of them have studied beyond grade 10. The main source of income is agriculture. Table 1 presents the results about the sources of income of the office bearers.

Table 5.2.1: Sources of income

Subject	Minor		Medium	
	Number	%	Number	%
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 2 indicates the composition of office bearers in the sample. 16 presidents, 17 secretaries, 13 treasurers, 2 vice presidents and 1 co-secretary are in the sample.

Table 5.2.2: Composition of the sample

Subject	Minor		Medium	
	Number	%	Number	%
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	0.0	2	10.5
e) Co Secretary	1	3.3	0	0.0

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

Maximum size of land holdings in minor schemes for low land is 12 acres and for high land is 7 acres. Minimum size in minor for both low land and high land is 0.5 acres. Maximum size in medium scheme for low land is 5 acres and for highland is 3 acres. Minimum size in medium for both low land and high land is 0.5 acres. Table 5.2.3 presents the distribution of land holding sizes among office bearers.

Table 5.2.3: Distribution of the land holding sizes

Group	Minor				Medium			
	Low land		High land		Low land		High land	
	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	100.0
-------	----	------	----	------	----	-------	----	-------

73% in minor schemes and 63% in medium schemes office bearers are privately owned their land. 11% in medium and 3% in minor are permanent tenants. 26% in medium and 3% office bearers cultivate rented lands. 7% minor scheme office bearers cultivate encroached lands. Location of plots well represent the head, middle and tail of the MC s although those are not equally represent these locations in DC s and FC s. Types of operations in the schemes before rehabilitation are summarized in table 5.2.4.

Table 5.2.4: 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

79% medium and 37% minor office bearers said that water is adequate and timely all of the time in their schemes. 26% medium and 40% minor OB s said that the irrigation services are fair ie. although water is adequate much of the time, sometimes it comes late or it is too little. 11% medium and 20% minor OB s reported that often there is not enough water so the irrigation services are poor.

5.2.2. Farmer Organizations

Forming FO s in minor schemes commenced in 1989. Temporal distribution of FO formation is included in table 5. Except one medium FO, all other FO s have a constitution and all the FO s have been registered. 90% minor and 84% medium OB s reported that their FO is registered with DAS under article 56 a of the agrarian services act. 7% minor OB s said their FO is registered under 56 b. One OB in a medium scheme said it is with ID and other OB in a medium scheme did not know about this.

FR s in minor schemes are selected at the AGM. In medium schemes 32% said that FR s are selected by field canal groups and 31% said at AGM. Majority said that FR s are selected each year. There are 3 - 13 OB s in minor schemes including committee members. This is 4 - 13 in medium schemes. 53% minor and 74% medium OB s said that there are 5 OB s in the FO. It is possible that they have not included the number of committee members in this. Those are president, secretary, treasurer, vice president and co-secretary. 60% minor and 68% medium OB s said that the all OB s are FR s. 93% minor and 68% medium OB s said that the OB s are selected by the general membership while 3% minor and 26% medium OB s said that OB s are selected by the OB s. 80% of minor and 68% medium OB s said that OB s are selected/re-elected each year. 16 % medium OB s said that this is done in every three years. Activities of the FO s as indicated by the OB s are given in table 5.2.5.

Table 5.2.5 : Activities of the FO indicated by the farmers

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									
k) nothing	0	0	0	0	0	0	0		
i) don't know	0	0	0	0	0	0	0		
0									

In minor schemes 60% OB s said that the Committee meeting are held monthly and 20% said bimonthly. 3% of them said that CM are held once in three months and other 3% said that

occasionally. 27% said that general meeting of the FO is held monthly . 20% said once in two months, 23% said annually. 13% said that GM is held seasonally while other 13% said occasionally. 7% said that the FC group meeting is held monthly. In medium schemes, 79% said that CM s are held monthly. 11% said that it is held bimonthly and 5% said annually. 32% said that the GM is held monthly while 26%

said annually. 10% said occasionally and 16% said once in three months. 21% said FO group meetings are held monthly while 11% said bimonthly.

93% minor and 89% medium OB s reported that there FO s have funds. Funds vary from Rs. 200.00 to Rs. 20,000.00 in minor schemes and Rs. 100.00 to Rs. 80,000.00 in medium schemes. 17% minor and 11% medium OB s said that they have a tractor belongs to FO. 7% minor and 26% medium said that there are buildings owned by the FO. Sources of income of the FO s are listed in table 5.2.6.

Table 5.2.6: Sources of income for the FO

Source	Minor		Medium		
	Number	%	Number	%	
a) membership fees/shares	29		96.7	19	100
b) rehab construction/other contracts		14		46.7	5
c) O&M allocation from agency	1		3.3	19	100
d) DAS contributions	3		10	2	10.5

43% minor and 21% medium OB s said that FO has rules specifying how much can be spent by office bearers and 37% minor and 11% medium OB s said that there are such rules for committee members too. 33% minor and 26% medium OB s said that FO required an approval from an agency officer for withdrawal of funds from the bank. Around 60% from both types said that FO do not need such approval. More than 90% of them told that FO s are maintaining accounts books. General ledger, receipt books, account payable, accounts receivable, are the books maintained by the FO.

27% minor OB s said that finances are reported to the general membership monthly. 10% of both categories said that it is reported seasonally. 50% minor and 63% medium said that it is reported annually. 7% minor and 16% medium said that finances were never reported to general membership. The benefits from the FO s to farmers as reported by the OB s are summarized in table 5.2.7.

Table 5.2.7. Benefits from the FO s as indicated by the office bearers

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	0

Also office bearers informed that there are problems in achieving these benefits.

Table 5.2.8 give the information on these problems.

Table 5.2.8. Problems in achieving the benefits

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

There are no Project Management Committee (PMC) in minor schemes. However only 37% OB s in medium schemes said that there are PMC in their scheme. 53% said that no PMC in their scheme. 63% did not respond to the question how often the PMC

meet. 26% said monthly and 16% said seasonally. The activities of the PMC is given in table 5.2.9.

Table 5.2.9 : Activities of the PMC as indicated by the office bearers

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				

5.2.2.1. Agency support

Office bearers indicated three agencies ID, DAS, IMD which helped to form FO s. Some of them denoted GS as the one who helped to form the FO. Table 5.2.10 gives the summary of this information.

Table 5.2.10 : Agencies supported to form FO s

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

The support given by the agencies other than DAS is included in table 5.2.11. The support given by DAS is given in table 5.2.12.

Table 5.2.11 : Support given by ID/PEU to FO

Activity	Minor		Medium	
	No	%	No	%
a) organizes meetings 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

Table 5.2.12. Support given by DAS to FO

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

All the minor scheme OB s said that there are IO s in their scheme. 79% OB s in medium schemes said so. IO s had not been appointed in one of the medium schemes by the time of this study. Table 5.2.13 provide information on the duties of IO s as given by the OB s. All OB s in the schemes where the IO s are available said that they are satisfied with the assistance given by the IO s.

Table 5.2.13 : Duties of IO

Activity	Minor		Medium	
	No	%	No	%
a) organizes meetings of the FO s 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 FO s solve problems with agencies		23	76.7	
12 63.2				
i) helps to resolve disputes	15	50	3	
15.8				
j) no assistance	0	0	0	
0				
k) don't know	0	0	0	
0				

5.3. Rehabilitation Planning and Design

They were asked about the items of rehabilitation plan to be done in their schemes under NIRP. Table 5.2.14 gives the details of this information.

Table 5.2.14 : NIRP activities in the sample

Activity		Minor		Medium	
		No	%	No	%
a) fix the structures in the system				30	100.0
17	89.5				
b) line some channels		21	70.0	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) turn over O&M responsibilities to farmers			22	73.3	7
36.8					
f) fix roads					3
10.0	3	15.8			
g) don't know				0	0.0
0	0.0				

47% minor and 74% medium OB s said that changes of O&M after rehabilitation were discussed at the planning stage of rehabilitation. All OB s in minor schemes expect that these changes would improve irrigation service significantly. 68% medium OB s had this expectation but 5% were in negative opinion. 26% of them did not answer this question. Table 5.2.15 present how farmers took part in the planning activities.

Table 5.2.15 : 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			

73% minor and 90% medium OB s expressed that they were able to understand the plans completely which were discussed at the meetings. 20% OB s in minor schemes said that they could not understand what was discussed at meetings. This 20% gave following reasons for this (table 5.2.16)

Table 5.2.16 : Reasons for not understanding 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				

87% minor and 90% medium OB s confirmed that suggestions from farmers were incorporated into the plans. 87% minor and 84% medium OB s satisfied with the rehabilitation plans. 50% of minor and 16% of medium OB s emphasis that some very important items they felt needed were not included in the plans. They have given following reasons as they felt (table 5.2.17).

Table 5.2.17 : Reasons for not including important items into plans

Activity	Minor		Medium	
	No	%	No	%
a) the engineers said NIRP rules not allow funding these items			2	
6.7 0 0.0				
b) the engineers said that there was not enough funds		9	30.0	
1 5.3				
c) the other farmers did not want them		1	3.3	
0 0.0				
d) other reasons (specify)		3	10.0	
1 5.3				
e) don't know		1	3.3	
0 0.0				

90% of minor and 47% of medium OB s informed that formal meetings were held to ratify that plans. According to 50% of minor and 21% of medium OB s, a formal agreement has been signed between the agency and FO. However 40% minor and 53% medium OB s said it is not.

5.2.4. 10% Contribution

Major form of contribution is labor for earthwork according to 93% minor and 79% medium OB s. 3% in minor and 47% medium OB s said that farmers contribute labor for other work. This is mostly done by individual assignments according to the 73% minor and 60% medium OB s. 53% minor and 47% medium OB s said that they organize *Shramadana* to accomplish this work. 57% of minor and 21% medium OB s said that work was not completed according to the schedules. They have given following reasons as to why this work was delayed. Although the percentages are not significant results are summarized in table 5.2.18.

Table 5.2.18 : Reasons for delaying 10% work

Activity	Minor		Medium	
	No	%	No	%
a) work not yet begun 42.1	0	0.0	8	
b) cannot get enough labor 0.0	2	6.7	0	
c) cannot get tools/materials 0.0	1	3.3	0	
d) lack of funds 0 0.0		1	3.3	
e) don't know 0 0.0		1	3.3	

Although it is not reflect in the table 5.2.18, there are difficulties of getting labor for this work. Reasons for this are summarized in table 5.2.19.

Table 5.2.21 : The way FO find capital for contracts

		Minor		Medium	
		No	%	No	%
	i. contribution from farmers			5	16.7
2	10.5				
	ii. contribution of several FR s			7	23.3
2	10.5				
	iii. advances from the agencies(specify the a	1	3.3		0
0.0					

The way FO recruited labor in contracts are given in table 5.2.22.

Table 5.2.22 : The way FO recruit labor for contracts

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

Only 37% minor and 16% medium OB s reported that they had difficulties in obtaining materials for contracts. The reasons for those difficulties are summarized in table 5.2.23.

Table 5.2.23 : Difficulties in obtaining materials

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

73% minor and 27% medium OB s said that the agency given levels, taken measurements and made payments in time. 23% minor and 68% medium OB s did not answered for this. 73% minor and 32% medium OB s said that the agency provided adequate technical advice and help. Only 33% minor and 21% medium OB s said that the FO s made profit from the contacts. Major reasons for not making profits according to them are poor planning and lack of experience and knowledge. Only 33% minor and 16% medium OB s said that they received full amount for the completed work. If subcontracted the work 23% minor and 21% medium OB s said that the subcontractors hired the local laborers. 17% minor and 16% medium OB s said that FO received income through subcontracting. 50% minor and 32% medium OB s said that the work was completed on time and 53% minor and 26% of medium OB s said that they are satisfied with the work done.

5.2.6. Construction Supervision

93% minor OB s said that he constructions had begun in their schemes while only 32% medium OB s said so. 77% minor and 63% medium OB s said that the FO members were given training inn construction supervision. According to them these training were given by the officers of ID, DAS and the IO s. 73% minor and 68% medium OB s said that they planned the construction supervision. The efforts planned are included in table 5.2.24.

Table 5.2.24 : 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	0.0
1	5.3		

70% of minor and 47% medium OB said that the responsible agency (ID/PEU/DAS) agreed to these plans and 73% minor and 26% medium said that those plans were carried out. The problems arose during construction supervision are summarized in table 5.2.25.

Table 5.2.25 : Problems arose during construction supervision

		Minor		Medium	
		No	%	No	%
1	a) appointed FO members did not make checks			4	13.3
	5.3				
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				0
5.3	e) no problems	12		40.0	1

67% minor and 32% medium OB s said that supervision by the farmers improved the quality of construction work.

5.2.7. Turnover

87% minor and 79% medium OB s expressed that FO s would be able to successfully manage the system following rehabilitation. About 13 - 15% who said it cannot gave following reasons as they feel. (table 5.2.26)

Table 5.2.26 : Reasons to why FO s cannot manage system O&M well

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

5.3. Institutional development officers (Divisional Officers of the DAS)

5.3.1. 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 DO s as one medium and one minor scheme are represented by one DO, because both schemes are situated within one division of the DAS. Here the information from this DO has been included under both minor and medium categories in the analysis. There are 5 female DO s among those 19.

5.3.2. Agency Support

14 DO s for minor and 3 DO s for medium schemes have helped in creating FO s in those schemes. FO in one minor scheme had been formed by farmers themselves before the agency involvement. FO s in two medium schemes were formed each by IMD and the ID. The training provided by the DAS to develop the FO have been summarized in table 5.3.1.

Table 5.3.1: Training provided by DAS to develop FO s

Subject	Minor		Medium	
	Number	%	Number	%
a) in conducting meetings			15	100.0
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
e) in organizational management			9	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 provide some other support and advise to improve the FO to make it an important activity in the farming community. Table 5.3.2 summarize the support given by the DAS as stated by the DO s.

Table 5.3.2: Other support provided by DAS to develop FO s

	Minor		Medium		
Subject	Number	%	Number		%
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	

By the time of the study, all the schemes have been assigned IO s, except for one medium scheme. The duties of the IO s stated by the DO are indicated in table 5.3.3. All DO s are satisfied with the work of IO s in minor schemes but not with the work of IO s in medium schemes.

Table 5.3.3: Duties of the IO

		Minor		Medium	
Subject		No	%	No	%
	a) organizes meetings of the FO S 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 FO S solve problems with agencies			13	86.7
40.0				2	
	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
-	0.0				
	i) trains/advises farmers in O&M			2	13.3
20.0				1	
	j) data collection	1	6.7	-	0.0
	k) coordination with line agencies			1	6.7
				-	0.0

5.3.3. Rehabilitation Planning and Design

DO s commented over the participation of farmers in the planning and design stage of rehabilitation. 93% minor DO s and 40% medium DO s said that farmers suggestions were incorporated into the plans. One minor DO said no to this and one Medium DO said do not know. 87% minor DO s and 60% medium DO s said that the farmers are satisfied with the rehabilitation plans. 13% of minor DO s said that farmers were not satisfied with the plans because they think that their suggestions were not included in the plans. Work had not commenced in two medium schemes. The way farmers participated in the planning and design process is in table 5.3.4.

Table 5.3.4: How farmers take part in the planning activities

Subject	Minor		Medium	
	Number	%	Number	%
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

33% minor DO s and 40 % medium DO s said that specific O&M plans for after rehabilitation were discussed with farmers. However 67% minor DO s said that it was not so and 20% of medium DO s did not know about this. 93% minor and 60% medium DO s express their hopes that the rehabilitation would improve irrigation service significantly. Only 7% minor DO s said that it would not be so. Percentage of medium DO s for this was at lower level as 60% because other 40% represent the schemes where the rehabilitation had not been started. 60% minor and 40% of medium DO s said that they have not seen much problem in getting farmers participation. But some DO s pointed out some of the reasons for if it is difficult to get their participation (table 5.3.5).

Table 5.3.5: Difficulties for getting farmers participation

	Minor		Medium	
	Number	%	Number	%
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 yet	9	60.0	2	40.0

5.3.4. 10% Contribution

93% minor and 40 % medium DO s said that main form of farmers contribution for their mandatory 10% contribution of the total cost is labor for the earth work. Only 7% (in one scheme) DO s said that the form of contribution is from cash. 60% minor DO s said the work is going according to the schedules while 40% said no. DO s for medium schemes did not answer for this question since the 10% work had not commenced or not completed. One medium DO said that he did not know about this. Major reason for not going this work according to the schedule is because of flood or rain. Although the given reasons are not well represent the sample results are given in table 5.3.6.

Table 5.3.6: Reasons for not 10% work not going according to the schedules

	Minor		Medium			
	Number	%	Number	%		
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

73% minor DO s informed that they have not seen any difficulties of getting labor for 10% work. However the given difficulties are summarized in table 5.3.7. DO sin medium schemes did not answer for this.

Table 5.3.7: Difficulties in getting labor for 10% work

	Minor		Medium			
	Number	%	Number	%		
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		

5.3.5. Construction Contracting

60% minor and 40% medium FO had taken rehabilitation contracts while 40% minor and 60% medium had not done so according to the DO s. According to 6 (40%) minor

DO s and 1(20%) medium DO, FO s had refuse to undertake the offered contracts as they are not economically strong for such venture. 53% minor and 20% medium DO s said that FO s learning technical and managerial experience where they had taken construction contracts while only one DO (7%) from minor schemes said it was not. The same results are valid for that the FO s increasing their funds significantly through contracting. Only two DO s from minor and medium each expressed that they have the experiences that FO s were weakened by creating dissension over funds.

5.3.6. Construction Supervision

Construction had begun in all minor schemes and two medium schemes at the time of study. 87% minor and 20 % medium DO s said that they helped FO in preparing plans for construction supervision. 13% minor and 20% medium DO s had not done so. The same results mentioned that those plans were carried out. 73% minor DO s mentioned that problems were not reported in construction supervision. The problems faced in construction supervision as reported by some of the DO s are summarized in table 5.3.8.

Table 5.3.8: Problems arose during construction supervision

	Minor		Medium			
	Number	%	Number	%		
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 upper hand unnecessarily			1	6.7	1	
20.0						
e) no problems			11	73.3	-	0.0

5.3.7. Turn Over

87% minor and 40% medium DO s expressed that the FO s be able to successfully manage the system following rehabilitation while 13% minor and 20% medium DO s

said the FO s cannot. 7% minor and 20% medium DO s said that the FO s cannot raise enough funds for maintenance and 7% minor DO s said that the FO s are lack the needed technical knowledge and experience reasoning the inability of FO s to take over O&M.

5.4. Institutional organizers (IO)

5.4.1. Sample characteristics

There is one IO in each minor scheme but more than one in some medium schemes. Out of 15 IO s in 15 minor schemes there are 5 female IO s. All together there are 6 IO s in 4 medium schemes and all are males. IO s had not been appointed to one medium scheme. All IO s in minor are attached to the DAS while all IO s in medium schemes are attached to the ID. 9 out of 21 have experience more than 2 years as an IO. 3 IO s have experience between $1\frac{1}{2}$ - 2 years. All others experiences are blow that. There are 3 IO s whose experiences are less than 6 months. % IO s have worked previously in IMD and one was in an NGO.

5.4.2. Farmer Organization

The existing structures of the FO s under reference as stated by the IO s are as follows (table 5.4.1)

Table 5.4.1: Existing structures of the FO s

Subject	Minor		Medium		
	Number	%	Number	%	
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) Tanks 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) Anicuts based - one organization for several anicuts			4		26.7
0	0.0				

87% minor and 83% medium IO s said that the existing structure is appropriate for the management of the scheme. 80% of minor and 67% of medium IO s felt that the current leadership is appropriate. 20% minor and 17% medium IO s said those are not appropriate. Reasons for this are summarized in table 5.4.2 if the numbers are not representative.

Table 5.4.2: Reasons for the leaders are not appropriate

Subject	Minor		Medium		
	Number	%	Number	%	
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 IO s said that the farmer leaders are handling funds properly. More than 80% of IO s said that FO s manage operation of part or all of the scheme. If the FO is not involved, only one IO in minor schemes said that it is done by the agency. 50% of the medium scheme IO s were also stand on this. 47% of minor and 83% medium IO s confirmed that if the operations are done by FO s they do it well. The same percentage of farmers said that the FO s manage maintenance of part or all of the scheme. 47% minor and 67% medium IO s confirmed that if the maintenance are done by FO s they do it well. Flowing are the reasons for not doing maintenance well (table 5.4.3).

Table 5.4.3: Reasons for not doing maintenance well.

Subject	Minor		Medium		
	Number	%	Number	%	
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	

73% minor and 67% medium IO s said that the FO s had not undertaken any business activities like selling inputs and purchasing produce.

IO s pointed out the benefits to the farmers from the FO s. Rehabilitation of the scheme, improved irrigation service and resolution of disputes among farmers are the major benefits. Table 5.4.4 summarizes the number of IO s who confirmed each benefit and their percentages.

Table 5.4.4: Benefits to the farmers from the FO s

Subject	Minor		Medium	
	Number	%	Number	%
a) rehabilitation of the scheme	14	93.3	3	50.0
b) improved irrigation service			11	73.3
			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 FO s in achieving those benefits. Table 5.4.5 produce representation of those problems according to the views of IO s.

Table 5.4.5: Problems in achieving benefits

Subject	Minor		Medium	
	Number	%	Number	%
a) lack of cooperation from farmers	4	26.7	3	50.0
b) lack of 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 does not need		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 not Project Management Committees in any of the minor schemes. 83% IO s in medium schemes confirmed that there are PMC s in medium schemes. 67% IO said that PMC is doing seasonal planning, solving irrigation problems planning rehabilitation. 33% of them said that PMC is also agricultural problems. More than 50% of these IO s indicated that more effective seasonal planning, better corporation with agencies and resolve disputes among farmers as the benefits from the PMC to the farmers.

5.4.2.1. Agency support

73% minor and 67% medium IO s said that their agencies(DAS /ID) helped create FO s. 17% medium IO said that IMD helped create FO in their schemes. FO s had been created in all minor schemes when IO s arrived in the scheme. 83% medium IO s said that FO s had been created when they arrived in the schemes. There is a list of activities that IO s are doing to support FO s. These are presented in table 5.4.6 as IO s indicated.

Table 5.4.6: Activities of the IO

Subject	Minor		Medium	
	Number	%	Number	%
a) talk to individual farmers to create awareness of the FO(s)	14			
93.3 6 100.0				
b) organize meetings of the FO s and PMC	15	100.0	6	100.0
c) train/advise farmers in O&M	4	26.7	3	50.0
d) train/advise farmers in rehabilitation	6	40.0	3	50.0
e) train/advise farmers in other subjects	15	100.0	5	83.3
f) carry messages/information from officers to farmers			15	100.0
100.0			6	
g) carry messages/information from farmers to officers			14	93.3
100.0			6	
h) audit FO accounts	12	80.0	5	83.3
i) assist FO S solve problems with agencies			10	66.7
100.0			6	
j) help to resolve disputes among farmers	0	0.0	4	66.7

IO s have pointed out that the difficulties they faced in working with FO s. 40% minor and 67% medium IO s emphasis the difficulties due to lack of transportation . 20% minor and 50% medium IO s indicated that lack of support from other agency officers also make it difficult them in working with FO s.

5.4.3. Farmer Participation in Rehabilitation

67% minor and 83% medium scheme IO s said the farmer participation in rehabilitation planing is adequate. 17% medium scheme IO s express that better communication among farmers would improve there participation. All the IO s in minor schemes said that farmers are carrying out the 10% contribution. Only 50% IO s in medium schemes were affirmative for this while 33% of them were in negative answer because of the major reason that the rehabilitation work had not commenced. 60% IO s in minor and 50% IO s in medium schemes said that the FO s had taken construction contracts. The difficulties faced by the FO s in doing contracts are given in table 5.4.7.

Table 5.4.7: Difficulties faced by the FO s in contracting

Subject	Minor		Medium	
	Number	%	Number	%
a) FO S lack the necessary resources (funds and materials)	6	40.0	2	33.3
b) FO S lack the necessary technical knowledge and experience	0	0.0	3	20.0
c) FO S 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
g) delays in the agencies	1	6.7	1	16.7
h) mistaken by the officers	1	6.7	1	16.7

All IO s in minor schemes and informed that FO s were learning technical and management lessons through contracting which would be useful for maintenance in future, FO s growing funds significantly through contracting and no problems were reported related to funds. Only 50% IO s in medium schemes reported that farmers were learning technical and management lessons through contracting. 33% of them said FO s increase their fund through contracting while another 33% said no. 17% of the reported that there were experiences of weakening FO s by creating dissension over funds. All IO s in minor schemes and 33% IO s in medium schemes reported that FO in minor schemes were undertaken construction supervision while another 33% in medium schemes said that FO s were not undertaken. No significant problems in construction supervision were reported by the IO s.

5.4.4. Turn Over

73% in minor and 67% in medium schemes IO s were in opinion that the FO s are able to successfully manage the system following rehabilitation. 27% minor and 33% medium IO s believe that FO s cannot achieve this target. 7% minor and 17% medium IO s indicated that FO cannot raise adequate funds for maintenance as a reason for their inability. 17% of medium scheme IO s also said that the farmers

5.5. Irrigation officers (Technical Assistants - TA)

5.5.1. Sample characteristics

There are 20 TA s to look after the rehabilitation of the 20 schemes. All of them are males and no female TA s found in this survey. These TA s belongs to 3 implementation agencies of the NIRP. TA s for medium schemes are attached to the ID. TA s assigned for 15 minor schemes are from ID(10), DAS(4) and PEU(1). Some places TA was 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 the rehabilitation was going on.

5.5.2. Irrigation and Agriculture Situation of the Scheme

Out of 15 minor schemes 8 schemes are tank systems and 7 schemes are anicut systems. Out of 5 medium schemes there is only one anicut system. Maximum command area of the minor schemes is 200 acres and minimum is 15 acres. Maximum command area of medium schemes is 3600 acres and minimum is 215 acres. Out of 15 minor schemes, command area 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 MC, DC s, FC s, and fields are mostly irrigated by the FC s. The physical distribution system of 8 minor schemes (53%) consist of single MC and few or no subsidiary canals

Farmers are responsible for the system management of 80% minor schemes. 2 TA s ((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% of TA s in minor schemes said that headworks, MC, secondary and tertiary canal operations are done by the farmers alone. 13% of them said that headworks and MC operations are done by both agency and farmers. 7% of them said the secondary and tertiary canal operations are done by both agency and farmers. 40% of the TA s in medium schemes said that headworks, MC, secondary and tertiary operations are by the agency alone and 60 % of them said that those are done by both agency and farmers. All TA s of the medium schemes reported that

headworks and MC maintenance are done by the agency alone. According to 40% of them secondary and tertiary canal maintenance are done by agency alone while 20% of them reported that it is done by both agency and farmers. According to 60% of the TA s in minor schemes, headworks and MC maintenance of the minor schemes are done by farmers alone while 27% reported that it is done by both agency and farmers. 73% of them reported that secondary and tertiary canal maintenance of the minor schemes are done by farmers alone. Only 7% said that it is done by both agency and farmers.

According to the 80% of TA s in minor schemes and 60% of TA s in medium schemes reported that water in the system is sufficient for irrigation in maha but not in yala. Two (13%) TA s in minor schemes and 1 (20%) TA s in medium schemes said that in their schemes, water is sufficient for whole system in both maha and yala. Another two (13%) TA s and 1 (20%) TA s in medium schemes said that water is not sufficient in both seasons for their systems. 33% TA s in minor schemes and 60% TA s in medium schemes reported that there is head tail difference in water availability in their schemes. Table 5.5.1. summarizes the major problems in system O&M as stated by the TA s.

Table 5.5.1: Problems in system O&M

	Minor		Medium			
Subject	Number	%	Number	%		
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	
f) inadequate cooperation among farmers		4	26.7	3	60.0	
g) inadequate cooperation between farmers and agencies ¹						6.7
1	20.0					

93% minor schemes and 100% medium schemes are grown to paddy in maha season. 7% minor schemes are grown to both paddy and OFC in maha. 47% minor and 60 % of medium schemes are grown to paddy in yala. 27% minor and 20% medium schemes are

grown to both paddy and OFC and 20% of both minor and medium schemes are grown to OFC only in yala. About 7% of minor schemes are left fallow in yala season.

5.5.2.1. Agency support

Agencies involved in rehabilitation support FO s in many ways. Table 2 present the support given by these agencies.

Table 5.5.2: Support given to FO s by the agencies

	Minor		Medium			
Subject	Number	%	Number	%		
a) organizes meetings of FO and PMC	6		40.0	4	80.0	
b) technical advice on O&M	14		93.3	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 at meetings			13	86.7	5	100.0
j) assistance in solving problems			12	80.0	5	100.0

5.5.3. Rehabilitation Planning and Design

All TA s in medium schemes and 60% of TA s in minor schemes said that farmers participated in walk through surveys. 13% of TA s in minor schemes said that they do not know about this as they had not taken over the work at the time of walk throughs. There were not favorable answers for number of walk throughs conducted and number of farmers take part in each etc. According to TA s farmers participated in planning meetings. 33% TA s in minor and 60% in medium schemes said that farmers did not have a problem in understanding what was discussed at these meetings. However 40% of TA s from both category confirmed that farmers had that problem. Reason for this 20% of TA sin both category said that terms used by officer in the meetings are sometimes unfamiliar to the farmers.

60% of TA's in medium schemes said that discussions at PMC and FO meetings were used to get farmer participation. 40% of them stated that written descriptions of the proposed plans were distributed among farmers. In minor schemes 40% of TA s said they discuss with farmers in FO meetings while 13% said that written description of the proposed plans were distributed among farmers. 100% TA s is medium schemes and 93% TA s in minor schemes reported that the farmers suggestions were incorporated in the plans. 47% TA s in minor schemes and 80% TA's in medium schemes admitted that some items demanded by farmers could not be included in the plans. 20% of minor and 40% of medium TA's said that NIRP rues did not allow funding these items. 47% minor TA's said these items were not included due to not adequate funds. 7% TA's in minor schemes said that was due to technical reasons.

80% of TA's in medium schemes and all TA s in minor schemes reported that a formal meeting had been held with farmers to ratify the plans. However 80% TA's in medium schemes and 60% TA s in minor schemes said that a formal agreement between the agency and the FO had no been signed.

TA's gave information regarding the work undertaken in their schemes under NIRP. Table 5.5.3. present the results that how many TA's responded to each item that is done in that scheme.

Table 5.5.3: Items done by NIRP

Subject	Minor		Medium		
	Number	%	Number	%	
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

80% TA's in minor and 60% in medium have the expectation that the operation of the scheme would change after rehabilitation. 20% TA's from both categories of schemes were negatively answered for this. Table 5.5.4 summarizes the kind of changes they expect after rehabilitation.

Table 5.5.4: Changes in operation after rehabilitation

Subject	Minor		Medium		
	Number	%	Number	%	
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

87% minor and 60% medium TA s expect these changes to improve irrigation service significantly. TA s pointed out the problems as they see, in getting farmer participation in rehabilitation planning and design. Table 5.5.5. presents the results.

Table 5.5.5: Problems in getting farmer participation

Subject	Minor		Medium	
	Number	%	Number	%
a) lack of interest by the farmers			3	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			0	0.0
d) disputes among farmers	1	6.7	0	0.0
e) No problem	2	13.3	0	0.0

5.5.4. 10% contribution

Only one TA in a medium scheme said that the agreement on the specific items that make up the 10% farmer contribution reached at special meetings following ratification of the plans. All other TA s said it was decided as part of the overall planning process. 80% of medium and 100% minor TA s said that the form of 10% farmer contribution is earthwork. One medium TA (20%) said that farmer contribute labor for the work other than the earth work for 10% contribution 47% minor and 60% medium TA s said that the 10% work was not completed according to the schedules. Reasons for it has been given in Table 5.5.6.

Table 5.5.6: Reasons for not completing 10% work on schedule

Subject	Minor		Medium	
	Number	%	Number	%
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 no rain	1	6.7	0	0.0
e) weakness of leaders	1	6.7	0	0.0

5.5.5. Construction contracting

80% TA s in both types of systems said that they have given contracts to the FO s. Only 20% of both types said no. 13% minor TA s said FO refused the offered contracts. 40% of medium TA s said that the work was too technical to be handled by the FO s.

• Answering to the question how these constraints were done by the FO, 73% minor of 20% medium TA s said that it was managed by the FO itself. 40% medium TA s said that sub contracts were given to the members of the FO s. 53% minor TA s said the work was completed on time. But only 20% medium TA s said so. Main problem for the delay according to 13% minor TA s is lack of operating capital. 7% of minor TA s said that it is due to lack of technical know how. However 60% of minor and 40% of medium TA s are satisfied with the quality of work done by FO s. 7% of minor TA s said that the quality was not so good due to lack of technical knowledge to the FO. 67% minor and 40% medium TA s said that they provided technical advice to the FO s regarding construction contracting. Kind of help given to the FO is indicated in table 5.5.7.

Table 5.5.7 : Kind of help given to the FO in construction contracts

Subject	Minor		Medium		
	Number	%	Number	%	
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 minor and other are from medium schemes said that they provided materials to the FO for contracts.

5.5.6. Construction supervision

93% minor and 20% medium TA s reported that the construction had begun in their schemes. 60% minor and 20% medium TA s said that FO members were provided with the training in construction supervision. In minor schemes this has been done by both ID and DAS officer while it was done only by ID office in case of medium schemes. 47% minor and 20% medium TA s said that they assisted to plan construction supervision activities. 53% minor and 20% medium TA s said that their plans were carried out. No serious problems were arisen in construction supervision. 40% minor and 20% medium TA s said that farmers supervision helped to improve the quality of the construction work.

5.5.7. Turnover

93% minor TA s and 40% medium TA s expressed that the FO s are able to successfully arrange the systems following rehabilitation. 20% of medium TA s who said that farmers cannot do this, gave the reasons for it as FO s cannot raise enough funds for maintenance FO s are lack the needed technical knowledge, experience and management abilities.

6. Conclusion

Overall idea 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 those are explained accordingly under relevant sub topics. Results of minor and medium schemes do not show much difference but if there is any, those are explained accordingly.

6.1. 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 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 FO. Selling inputs, facilitate loans and marketing of produce can be considered as secondary activities because these were reported by very small percentage of farmers. Opinion of the FO office bearers reveal that they are not certain on rules and regulations of the FO. When they were questioned on the tenure of the office bearers, they have given figures from 1 year to 4 years. However, except one FO in medium schemes, all other FOs have a constitution and more than 90% of FOs registered with DAS under the article 56 a of the Agrarian Services Act. Although they had given different views of the tenure of the office bearers, more than 80% office bearers said that the office bearers are selected each year.

The opinion of ordinary farmers and the office bearers on frequency of holding meeting vary. According to the majority, CM is held monthly. GM is held monthly, seasonally or annually. The study reveals that the stage of rehabilitation determine the frequency of meetings. However results revealed that almost all the farmers attend general membership meetings. Few of them attend committee meetings too. FRs are selected by the farmers themselves at the AGM. The office bearers of the medium schemes were in different opinion as the FRs are selected by the Field Canal Group (FCG) or at AGM. Office bearers are also selected by the general membership. Structure of the FO is more or less similar in all the FOs.

There are president, secretary, treasurer, vice president, and co-secretary and odd number of committee members in all the FO s. Farmers are generally satisfied with the present leadership because they help solve their problems, honest in handling funds, support farmers interests and not biased towards one section of farmers.

According to the IO s, there are two types of structures of FO s in the minor schemes. Those are one FO for one tank/anicut and one FO for several tanks/anicut. FO structure in medium schemes are consist of FC level, DC level and MC level or project level organizations. IO s feel that the existing structures are appropriate for the management of the system. Also they feel that the present leaders are also 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. IO s mentioned that the maintenance are also done by the farmers. Although this is correct for the minor schemes to a certain level, it is not so in case of medium and major schemes. This is a contradictory point reported from the results of the study. Around 70% IO s reported that the FO s under their command had undertaken business activities like selling inputs.

Farmers in miner schemes know that FO have funds but only few of them in medium schemes know about it. However they are satisfied with handling funds and they are confident on the present leaders. Very small number (less than 15%) from both miner and medium 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 FO s are vary from Rs. 100.00 to Rs. 80,000.00. There are assets like tractors, buildings belongs to some of the FO s. Main source of income is the membership fee or the shares from farmers. The second source is from construction contracts. In medium schemes, FO receive O&M allocation from the agency as another major source of income. There are rules specifying how much can be spent by office bearers and the committee members. This has been reported by less than 50% of the sample of office bearers. More than 60% said that the FO does not need approval from the agency officers for withdrawal of funds from the bank. More than 50% reported that the finances are

reported to the general membership annually. There are places the finances where finances are never reported to the membership.

Rehabilitation of the scheme, improved irrigation services, resolution of disputes and improved relation with other farmers and better group morale are the major and directs benefits from FO to farmers. Decreased cost of production, increased yield and income and betterment of farmer life the secondary (indirect) benefits for them. According to the office bearers, there are problems in achieving these benefits like lack of corporation from farmers, lack of resources, and lack of corporation from the agencies. In minor schemes, all these were given equal weights by the office bearers (30-35%) while more than 70% of medium office bearers reported that the lack of corporation from farmers is the major problem in achieving benefits. IO s 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 FO s. Although it is reported by few numbers of IO s, 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 another barriers in achieving benefits from FO s.

There are no Project Management Committees (PMC) in any of the minor schemes as all the minor schemes has single FO s. PMC consists of the representatives from all FO s in a medium scheme. PMC s were not formed in all medium schemes at the time of study. Seasonal planning, solving irrigation problems, planning work on rehabilitation are the major activities of the PMC

6.1.1. Agency support

DAS is the main agency supporting FO s in minor schemes and ID s help is very limited. ID helps FO s where the ID is the implementing agency of rehabilitation of the scheme. In case of medium schemes main agency is the ID. But DAS is also helping to the same level. Organize 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 support given by ID or PEU to the FO s. In medium schemes ID gives this support while in minor schemes both

ID and PEU depending on which is the implementing agency. Support from DAS reported heavily in minor schemes compared to medium schemes. This is because the DAS is the implementing agency in 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 FO s by DAS. In addition to the training, DAS provides other support like providing inputs, assist FO s in handling funds, attend FO meetings, encouragement and awareness meetings, helping in registration, organizing meetings, coordination with other agencies and providing agricultural equipment to improve the FO, in order to make this an important activity in the farming community. Some medium schemes IMD is the agency that helped create FO. Most of the IO s pointed out their difficulties in working with FO s. 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 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, assist FO s to solve problems with agencies and help resolve disputes among farmers are the duties of IO. Except one medium scheme, all the FO s get assistance from an IO. Office bearers too are satisfied with IO's assistance in FO activities. In general, DO s are satisfied with the work of IO s in minor schemes compared to the work of IO s in medium schemes.

Almost all the farmers are aware of the NIRP. Most of them received information from the DO. Some others from FO and also from Irrigation and Agricultural officers. About 1% of farmers got these information from media. Fixing structures, lining canals, improving tank capacity, turn over O & M responsibilities to the FO s, fix roads and get more water to the scheme are the NIRP activities undertaken in the sample schemes.

6.2. Rehabilitation Planning and Design

More than 50% farmers and the majority of office bearers said that O&M plan after rehabilitation was discussed is planning and designing stage of rehabilitation. Office bearers and more than 85% expect that the changes would improve the irrigation services significantly. Farmers participated in walk through surveys, is meetings with officers of the implementing agencies, and in farmer meetings. Results indicated that the participation is less in medium schemes compared to minor schemes. Reason behind this is that the rehabilitation had not commenced in some of the medium schemes. IO s feeling is that the farmers participation in planning and design is adequate. More than 50% farmers said that they did not have any difficulties in understanding what was discussed at planning meetings. Farmers suggestions were also incorporated into plans. Only 16% -18% farmers informed that very important items suggested by farmers were not included in the plans. Major reason they have been told is that not enough funds to accommodate those requests.

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

Ratification meeting had been held in most of the minor schemes but less than 50% of office bearers in medium schemes reported so. The main reason for this low percentage is the rehabilitation had not commenced in some medium schemes. Around 50% of office bearers said that a formal agreement between agency and the FO were signed but other 50% said no. However according to the TA s opinion ratification meetings were held. But a formal agreement between agency and FO had not been signed.

According to TA s farmers are responsible for system management in minor schemes. 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 demanded items by farmers were not included in the plans due to NIRP rules did not allow funding those, not adequate funds or technical reasons.

6.3. 10% contribution

Farmers aware that they have to contribute 10% of the cost of rehabilitation through FO s.. Most of them did not know the value of the contribution. Main form of contribution is labor for earth works and other works. These targets are achieved by individual assignments and some places they practice Shramadana. Even though it is reported in some places of the problem of getting labor for this work, it was not significant. 57% minor and 21% medium office bearers reported that 10% work was not completed according to schedules. However the number of office bearers who have given reasons for this delay is very low. For medium schemes, the delay is mainly due to the work had not begun yet. For minor schemes the reason is the difficulty in getting labor. 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 part time or short term farmers neglect the work and no way of enforcing the FO rules. Most of the DO s do not see any difficulties in getting labor for this work. Less than 40% of DO s said that this 10% work was not going according to the schedules. Major reason for this was because of rain or flood. TA s reported that the major problem in getting farmers participation is lack of interest by farmers

6.4. Construction Contracts

50% of the farmers reported that their FO have taken construction contracts. Major form of doing it was that it was taken by FO office bearers on subcontract. Some places it was managed by FO as a unit. Some other places outsiders had taken subcontracts. Very small percentage of farmers had involved these activities by themselves. About 12% - 16% has worked as wage laborers in the contract works. However around 70% farmers are satisfied with the work done by the FO. Around 30% said that FO made profit out of these contracts. 30 - 35% said that they are not aware of the profits. According to the office bearers most

of the construction contracts taken by the FO are managed by the FO. Subcontracting to FO members and also to outsiders have been reported. Main source of capital is either from contribution of FR s or the general farmers. For this contract works, FO hired labor from within the FO and from out side. Sometimes FO had organize shramadana to complete part of the contracted work. FO faced difficulties in obtaining material for this work for major reason of lack of funds to purchase. Availability of materials and transport were also push them into difficulties.

The agencies given levels, taken measurements, and made payments, in time according to the most of office bearers. Also agency provided adequate technical support. But very low number reported that they made profits out of contracts due to poor planning and lack of experience. Around 15% of them reported that the FO earned income through subcontracting. IO s reported that the major difficulties faced by the FO s in construction contracts are lack of resources, lack of knowledge, management abilities and experience. According to DO s some places FO s had refused offered contracts as the FO was not economically strong for such a venture. However farmers were learning technical and managerial experiences where they had taken contracts. The FO s that had taken contracts were also increasing their funds significantly through contracting. The experiences of weakening FO s by creating dissension over funds were reported very rarely. The TA s were in little different opinion that contracts in most of the cases are managed by the FO and some times given out to the members of the FO. Some times FO were delayed in completing work due to the main reason that they are lack of operating capital. TA s provided necessary technical advice to the FO in construction contracting.

6.5. Construction Supervision

Only 2/3 of the farmers in medium schemes reported that rehabilitation had been begun in their scheme. All the minor schemes are under rehabilitation that time. Responses to the question on construction supervision were very low. Around 50% 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 DAS officers or by IO s. However the general feeling is that this activity helped

improve the quality of the construction work. Office bearers informed that the farmers were given training on construction supervision. This training was provided by the officers of the ID, DAS and the IO s. Implementing agencies agreed upon the plans prepared by FO for construction supervision. Office bearers confirmed that supervision by farmers improved the quality of work. DO helped prepare plans for construction supervision and those plans were carried out. Only in few places, the DO s reported the problems in this activity of the FO. According to the TA s training on was given to farmers by the officers in DAS and ID and also they assisted in preparing plans. No serious problems arose but it helped increase quality of the work.

6.6. Turn Over

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

This study was done in a period that the sample schemes are under rehabilitation. Overall results make most of the issues raised by the phase I of the study redundant. It does not mean that all those problems appeared in the phase I sample have been solved during the course of the project got into wheels. One thing is that the sample in phase I represent pilot schemes so it is accepted having 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 resultant result showing that the objectives of the project on FO s 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 of the sustainability of the FO s. Post evaluation must be carried out after sometime of the O&M of the schemes are handed over to the FO s. However, if farmers and officers involved have will and the commitment to do this, it is not an unachievable task.

References

- 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 1990_a : International Irrigation Management Institute, "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 1990_b : International Irrigation Management Institute, 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: Irrigation Management policy Support Activity, "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 Manor, S., Patamatamkul, S., and Olin, M. (eds) "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. 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*(CJHSS), Vol. 1, pt. 1, Colombo
- Pawana, 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 International Irrigation Management Institute (IIMI), Digana Village, Sri Lanka from 15-17 may 1986, Digana Village, Sri Lanka pp. 86-110

Pradan, P., K.Giri and N.Tiwari 1988: "Resource Mobilization and Organizational Support in Irrigation System management: Experiences from Kulariya, Jamara, and Rani Kulos of Kulari 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 Manor, S., Patamatamkul, S., and Olin, M. (eds) "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. 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.