

**Monitoring and Evaluation of the  
Participatory Irrigation System Management Policy**

**MAIN REPORT**

Volume I



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## ABBREVIATIONS

<b>ADB</b>	Asian Development Bank
<b>ARTI</b>	- Hector Kobbekaduwa Agrarian Research & Training Institute
<b>BCC</b>	Block Coordinating Committee
<b>DAS</b>	Department of Agrarian Services
<b>DC</b>	Distributary Canal
<b>DCO</b>	Distributary Canal Organization
<b>FCG</b>	- Field Canal Group
<b>FC</b>	- Field Canal
<b>FO</b>	- Farmer Organization
<b>FR</b>	- Farmer Representative
<b>ID</b>	- Irrigation Department
<b>IDO</b>	Institutional Development Officer
<b>IDU</b>	- Institutional Development Unit (Mahaweli Economic Agency)
<b>IIMI</b>	- International Irrigation Management Institute
<b>IMAC</b>	- Irrigation Management Cell (Irrigation Department)
<b>IMD</b>	Irrigation Management Division
<b>INMAS</b>	- Integrated Management of Irrigation Systems program
<b>IO</b>	Institutional Organizer
<b>IOV</b>	Institutional Organizer Volunteer
<b>ISMP</b>	- Irrigation System Management Project
<b>JMC</b>	Joint Management Committee
<b>JVP</b>	Janatha Vimukthi Peramuna (political movement)
<b>LSS</b>	Large Scale Survey
<b>MANIS</b>	Management of Irrigation Systems program
<b>MARD</b>	Mahaweli Agricultural and Rural Development Project
<b>MASL</b>	Mahaweli Authority of Sri Lanka
<b>M&amp;E</b>	Monitoring and Evaluation
<b>MC</b>	Main Canal
<b>MEA</b>	Mahaweli Economic Agency
<b>ME&amp;F</b>	Monitoring, Evaluation and Feedback system (IMD)
<b>MIRP</b>	Major Irrigation Rehabilitation Project
<b>NGO</b>	Non Governmental Organization
<b>NIRP</b>	- National Irrigation Rehabilitation Project
<b>PD</b>	- Process Documentation
<b>PM</b>	- Project Manager (Irrigation Management Division)
<b>PMC</b>	Project Management Committee
<b>PMU</b>	Planning and Monitoring Unit (MASL)
<b>PCC</b>	- Project Coordinating Committee
<b>RPM</b>	Resident Project Manager (Mahaweli Economic Agency)
<b>RS</b>	Recurrent Survey
<b>SLFO</b>	- System Level Farmer Organization
<b>SPC</b>	Sub Project Committee
<b>SPCC</b>	Sub Project Coordinating Committee
<b>TA</b>	Technical Assistant (Irrigation Department)
<b>UCC</b>	Unit Coordinating Committee
<b>USAID</b>	United States Agency for International Development

## FOREWORD

The concept of “participatory system management” in major irrigation schemes that emerged due to several concurrent efforts in the early 1980s including under the USAID funded Gal Oya Project expanded to a program mode in 1982 with the GOSL program in Water Management in 25 systems and further expanded to 35 Projects under the Integrated Management of Major Schemes (INMAS) program in 1984. The setting up of a specialized institutional development-focused, multi-disciplinary unit (Irrigation Management Division) within the then Ministry of Lands and Land Development, ensured a fast track approach to reinforce institutionalization and helped provide adequate resources, and emphasis to this new program. The participatory management program was granted formal acceptance as state policy by a decision of the Cabinet in 1989. The program provided for greater involvement of the beneficiaries through their established organizations in system management. This program was further extended to cover the taking over of O & M activities by Fanner Organizations in distributary canals relieving to some extent the pressure on funds required by the State for O & M. The program received legal backing when the Irrigation Ordinance was amended in 1994 to recognize these Farmer Organizations and the institutional arrangements such as the Project Management Committee which has become the instrument for planning and management of the seasonal cultivation program including water management of the seasonal cultivation program including water management in major systems, This gradual evolution of the program and policy was the outcome of several efforts and ongoing programs that were supported by studies.

This particular study funded by the ADB and undertaken by IIMI in collaboration with the Hector Kobbekaduwa Agrarian Research and Training Institute was actively supported by the Government and implemented with the assistance of ID, IMD & MASL.

This study finds strengths in the implementation of the policy. In particular, it indicates that the policy has led to an improvement in water management while, perhaps, contributing to maintaining irrigation systems effectively with lower inputs from the government. At the same time, it finds problems, largely in the fact that the irrigation agencies have not adapted themselves fully yet to the policy. The Ministry has taken action to solve some of these problems including the formation of an interagency committee to respond to issues related to irrigated agriculture including recommendations of the study.

This study is valuable for the light it throws on participatory irrigation management in Sri Lanka and for the guidance it gives towards improving the productivity and sustainability of irrigation in the country.

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## EXECUTIVE SUMMARY

This report summarizes the findings of the IIMI/ARTI study entitled Monitoring and Evaluation of the Participatory Irrigation System Management Policy. The study has been supported by TA No. 1705 SRI from the Asian Development Bank and has been carried out with the collaboration of the Ministry of Irrigation, Energy, and Power. The study focused on the 199 major and medium schemes included in the **INMAS**, Mahaweli, and MANIS programs.

The findings on the progress and evaluation of the participatory management policy can be summarized as follows:

### Farmer Organizations

- Distributary channel farmer organizations or their equivalents have been created in about 85% of all schemes under the three programs. The number of farmer organizations varies from over 200 in some Mahaweli schemes down to 1 for many MANIS schemes. The areas covered and numbers of members vary greatly. System level farmer organizations have been formed in most **INMAS** schemes but are still too new to evaluate.
- Farmer organizations show generally good water distribution performance. Overall, participatory management has improved water distribution significantly although it has not eliminated all problems.
- Farmer organization maintenance performance is more equivocal. Most do a reasonably **good job on** jungle clearing and desilting; generally they do not undertake other maintenance activities.
- A significant minority of FOs in **INMAS** (45%) and Mahaweli (**22%**) schemes are involved in business activities, most commonly selling fertilizers and agro-chemicals. Generally they perform well but still depend upon government assistance.
- Farmer organizational strength is a measure of the ability of the organization to sustain itself. FOs vary widely in organizational strength in all three programs. The strongest FOs **are** found in **INMAS** schemes. Organizational strength is only partially related to FO performance in particular tasks; leadership can substitute for good organization. However, dependence upon leadership alone threatens the long term sustainability of the FO.
- Most farmer organizations are organized on the **INMAS** model, with field channel groups, etc. However, within MANIS schemes a majority use a nonhydrological basis for the groups. The study also found that there are three important types of MANIS schemes for which the **INMAS** organizational model is not appropriate. There is a need to find more appropriate organizational models for these categories of schemes.
- Land tenure was found to be an important factor in the willingness **of** farmers to support FOs; many short term lessees and encroachers are not willing to work with the FOs. Other factors, such as caste and other social divisions were not found to be important. Outside interventions in FO activities, while destructive when they occurred, were found to be uncommon.
- Legal recognition of FOs is not strongly related to FO performance; recognition by the relevant government agencies is more important.



- Agency support for FOs is strongly related to organizational strength and less strongly related to FO performance. However, it is important to note that FOs have been created by farmers in response to the government rather than spontaneously. Agency support is thus necessary.

### Joint Management Committees (JMCs)

- Overall, about 51% of the schemes in the three programs have some form of joint management committee structure. These include all INMAS and Mahaweli schemes. Strong emphasis was given in the INMAS and Mahaweli programs to the JMCs, but the emphasis in the MANIS program has been much less.
- JMCs serve two major functions: seasonal planning and problem solving. JMCs generally can make decisions, but follow-up has not been good in all cases. JMC seasonal planning performance has been mixed in part because JMCs have been excluded from seasonal planning in some schemes. Because of agency limitations, JMC performance in problem solving has also been mixed.
- Because of the emphasis given by the agencies, performance varies among programs. Mahaweli JMCs seem to perform the best because of the strong support given by the MEA.

### Turnover

- Turnover of irrigation management responsibilities is not a single phenomenon; there are many variations. The most common responsibilities turned over include maintenance (jungle clearing and desilting only) of distributary channels, water distribution on the distributary channel and below, and operation of the distributary channel head gate. Virtually all INMAS FOs report some turnover, most including the first two responsibilities and a significant number (43%) including the third as well. The great majority of Mahaweli FOs report taking some or all of these responsibilities. Turnover has occurred in a minority of MANIS schemes. We found cases where FOs had taken responsibility for main systems operations and maintenance as well.
- Turnover of water distribution is *not* problematic and has helped improve water distribution.
- Turnover of maintenance responsibilities is not complete in any scheme. Virtually no FO is held responsible for the regular maintenance and repair of concrete and masonry structures. **Also**, the agencies continue to provide FOs with funds for maintenance through maintenance contracts. This should be called "joint management" rather than "turnover." MEA (and the ISMP before it) explicitly define a turnover process that includes a period of "joint management."
- It is our opinion that FOs handle maintenance responsibilities about as well as the irrigation agencies. Moreover, it appears that, unless the profitability of paddy farming gets significantly worse, farmers can afford to pay the full costs of periodic maintenance of field channels and distributary channels.
- Some farmers, because of the costs, and some irrigation agency officers, for other reasons, oppose complete turnover of maintenance responsibilities. The government must decide whether it wishes to subsidize irrigated farmers by paying some of the maintenance costs.
- There is a need to consider and plan for some of the consequences of full turnover if the decision to go ahead is made. The most important consideration is planning to repair systems before complete turnover.

## Impacts of Participatory Management

- The study found no evidence of improved crop production from participatory management in the short term. Yields have not increased significantly and evidence on area irrigated is unclear. In both cases, it appears that other factors are more important than participatory management. Since participatory management has resulted in an improvement in water distribution, it has lowered the risks of irrigated agriculture, thus improving long term productivity.
- Profitability of irrigated agriculture may have increased to a small extent because some actions of FOs have lowered costs of production. However, profitability appears to be affected far more strongly by factors other than participatory management.
- In real terms government O&M expenditures have decreased over the past several years except in Mahaweli systems where there has been a small increase. However, this decrease has been the product of Treasury limitations rather than participatory management. However, due to participatory management, there appears to have been a small shift from expenditures on distributary channels and below to expenditures on the main system. This should improve the long term sustainability of the systems.
- Under participatory management, water distribution has improved and maintenance appears to be as adequate as before. Since this is being accomplished at lower costs to the government, participatory management appears to make government funds more effective. That is, more is being accomplished at lower cost to the government.

## Sustainability: Benefits and Costs

- The major benefits of participatory management to farmers have been a) improving water distribution, and b) giving farmers more influence over government agencies providing agricultural services, particularly irrigation services. The major cost is the burden that falls on the Farmer Representatives. Although a simpler alternative organization of farmers for irrigation management can be conceived that would cost the farmers less, it also would provide less potential and actual benefits and is not recommended. There is a need to a) make government agencies more responsive to FOs and JMCs, b) support FOs in money-making businesses to increase the benefits, c) find a way to lessen the burden on Farmer Representatives or to compensate them for their effort, and d) have government agencies support the FOs in disciplining their members.
- The primary benefit of participatory management for irrigation agency officers is improved relations with farmers and a more pleasant working environment. The primary cost is reduced power and influence over farmers. To motivate officers, they should perceive that they will be rewarded with good evaluations by their superiors if the FOs and JMCs work well.

## Conclusion and Recommendations

The major conclusion is that, despite its failure to achieve some of the main goals, participatory management has clear benefits and should be continued and supported. **Also**, basing participatory management on formal multifunctional farmer organizations and joint management committees should be continued.

Following modifications made at a Workshop held to discuss the conclusions of this study, the specific recommendations made to strengthen the policy are:

### ***Recommendation No. 1***

***The IIMI/ARTI team recommends that steps to be taken to make government agencies dealing with agriculture more responsive and more supportive of farmer organizations and joint management Committees. These steps should include:***

- Within each agency, the agency should redefine the job descriptions of officers to reflect the tasks and attitudes needed to provide explicit support for farmer organizations and joint management committees. This redefinition should make certain activities mandatory, including attendance at JMC meetings and providing technical assistance and advice to FOs and JMCs. Reference should be made to the job redefinitions proposed by the Institutional Strengthening Project for the Irrigation Department and to those proposed specifically for Uda Walawe under the Irrigation Management and Crop Diversification Technical Assistance. In particular, the job descriptions of Technical Assistants/Project Managers in MANIS schemes should be redefined to ensure that the TA/PMs have the time and motivation to play their roles as Project Managers effectively.
- (Workshop) An inter-agency committee should be set up to redefine job descriptions and qualifications for staff recruitment.
- Intensive training should be provided to government officers in all relevant agencies about their roles and functions with respect to farmer organizations and joint management committees and about the rights and responsibilities of the FOs and JMCs.
- In order to ensure that officers act in supportive ways, their performance in supporting farmer organizations and joint management committees should be made an explicit part of their performance evaluations.
- The government should make it a policy to support farmer organization and JMC decisions. This may mean delegating greater authority to local agencies so that they can respond effectively to JMC decisions. It also means that government officers should support farmer organization decisions against complaints from individual members.
- (Workshop) The Secretaries of Irrigation and Agriculture should issue a joint declaration of the participatory management policy. The policy should be widely publicized through various media. The Central Coordinating Committee for Irrigation Management should be responsible for planning this effort.
- A major effort should be made to publicize among the farmers the rights and responsibilities of farmer organizations and joint management committees as defined in by-laws to the amended Agrarian Services Act and in the amended Irrigation Ordinance.
- (Workshop) Farmers should be consulted about any future amendments to the relevant legal acts.
- (Workshop) Regular monitoring and evaluation of the progress of the policy should be undertaken, perhaps by the Hector Kobbekaduwa Agrarian Research and Training Institute. An annual workshop should be held to review the performance of the irrigation management policy activities.

## ***Recommendation Number 2***

***We recommend that catalyst efforts, farmer training, and other direct support activities for FOs and JMCs be continued. These efforts are needed for the following:***

- Catalyst efforts are needed to facilitate the organization of farmers in schemes where no farmer organizations exist. Catalysts are also needed to assist agencies and farmer representatives in the creation of joint management committees in schemes where they do not exist.
- Catalyst efforts, training, and publicity should focus on educating all farmers, not just farmer organization leaders, about participatory management. Specific efforts should be made to educate farmers about organizational management, including handling finances, selecting leaders, etc.
- (Workshop) Training should be provided to the farmers at the appropriate time on the functions and responsibilities of the farmer organization during each stage (initial, joint management, and turnover) of farmer organizational development.
- (Workshop) When needs arise, farmer organizations should be encouraged to hire trained persons (e.g. bookkeepers, auditors) to carry out specific organizational management tasks.
- Widespread training about technical aspects of irrigation should be continued.
- (Workshop) The relevant government agencies should make technical information on the irrigation schemes available to the farmer organizations.
- Where special problems exist, e.g. land tenure problems, support efforts should focus on finding solutions to those problems.
- Special efforts should be made to offer opportunities to farmer organizations to take up new businesses. One business that should be fully supported by the government agencies is paddy marketing. Government agencies should assist in establishing linkages to other relevant markets.
- Efforts should be made to prevent development of dependency of the farmers on the catalyst agents as has been reported from some INMAS schemes. This can be done by constant monitoring of catalyst activities; catalysts should not provide direct services but only instruction, advice, and guidance. Catalyst assistance should be time-bound.
  - (Workshop) Efforts should be made to mobilize other community members, such as teachers, grama niladhari, and religious leaders in support of participatory management.

## ***Recommendation Number 3***

***We recommend that alternative organizational forms be developed for the various types of schemes for which the INMAS model is not appropriate.***

- (Workshop) Farmer organizations should be organized on the basis of hydrological units whenever possible.

#### ***Recommendation Number 4***

***We recommend that the government clarify the policy on turnover, including defining what powers and responsibilities will be turned over and how the government will continue to support irrigation services. We suggest that the following should be part of this clarification:***

- Turnover should be publicly declared to be a fixed policy that applies to all FOs in all schemes. If necessary, it can be explained that this is an alternative to imposing the irrigation service fee mandated by law.
- (Workshop) To ensure an effective and united policy, both agriculture and irrigation should be placed under one ministry. Alternatively, the policy can be implemented and supervised by a unified secretariat under a board drawn from both ministries. These measures will ensure a unified policy.
- (Workshop) Funding for farmer organization and turnover activities should be provided on a program basis to deal with the whole sector rather than on a project basis that deals with only a few schemes at a time.
- (Workshop) For turnover, farmer organizations must be formally recognized by the government; for this many farmer organizations need to be strengthened.
- (Workshop) The irrigation agency personnel in a turned over scheme will be answerable to the Project Management Committee for that scheme.
- Operations of distributary channels and below, or equivalent portions of systems without distributary channels, should be turned over to farmer organizations as soon as the channels are repaired to make them operable.
- Operations of distributary channel head gates, branch channels, main channels and headworks should be turned over to appropriate level farmer organizations or joint management committees upon the request of the farmer Organizations or joint management committees with the proviso that the farmer organizations or joint management committees take full responsibility for hiring, paying, and supervising the necessary operating personnel. The exact details can be negotiated following a request from the relevant group of farmers to the Project Management Committee in each scheme.
- (Workshop) For operation of distributary channel headgates, it is suggested that they be jointly operated for a period of less than five years, following which operations should be handed over to farmer organizations.
- (Workshop) Farmer organizations should be made responsible for the safety of structures and protecting reservations from encroachments and damage.
- Jungle clearing and regular desilting of distributary channels and field channels or their equivalents should be made the unambiguous sole responsibility of farmer organizations; no funds should be provided to farmers for this activity.
- The government should come to a decision about how much it is willing to subsidize other aspects of distributary channel and field channel maintenance, including painting and greasing

of metal controls, major and minor earthworks such as the repairs of scours and washouts, and repair of concrete and masonry structures.

- (Workshop) Once the basic decision about the obligations of farmer organizations and government are worked out at national level, specific subsidies and subsidy levels should be worked out at scheme level based on an assessment of needs. These subsidies can include salaries, equipment, operation funds, and others.
- The mechanism for providing subsidies should be defined. There are several alternatives ranging from giving the irrigation agency full responsibility and the necessary funds to making the FOs responsible but giving them a simple annual cash grant.
- The government should define a period of time by the end of which the transfer of responsibilities must be accomplished. No more than five years following completion of needed repairs should be needed to complete the transfer. During this period, a time of "joint management" should be defined during which the agency officers supervise and assist the farmer organizations in undertaking their responsibilities.

#### Suggestions for Monitoring the Policy in the Future

As part of the study, the IIMVARTI team documented the monitoring and evaluation systems being used by the implementing agencies, interviewed managers about their information needs, developed indicators of key characteristics of farmer organization and joint management committee performance, and tested these *in* the field in an experiment in improved monitoring.

At present, the Irrigation Management Division uses the Monitoring, Evaluation and Feedback (ME&F) System. A major problem is that many FO office-bearers do not prepare the required monthly reports. The ME&F system has now been introduced in 19 INMAS schemes but data reports are actually being produced only in 10 schemes. Until recently, the Irrigation Department had no regular monitoring of participatory management. Now, various formal and informal initiatives are under way, the most important of which may be the establishment of Irrigation Management Cells (IMACs) in each range office; one of whose functions is monitoring institutional development activities. MEA's Institutional Development Unit (IDU) collects data and reports on various aspects of participatory management. In late 1994, the MASL's Planning and Monitoring Unit began studies with a pilot survey of the strengths and performance of farmer organizations in two Mahaweli schemes.

Based on discussions with managers *in* charge of institutional development programs, the ARTI/IIMI team concluded that the major weakness that now exists is the lack of good measures for FO status and FO performance that allow quantification and comparison among FOs, schemes, programs, etc.

To help provide quantifiable measures for the purpose of monitoring and evaluating participatory management, the IIMI/ARTI team developed and tested a set of indicators for

- Farmer Organization Strength
- FO Water Distribution Performance
- FO Maintenance Performance
- FO Performance in Non Irrigation Management Activities
- Joint Management Committee Performance

These are given in Annex A. Properly used, the indicators provide a reasonably accurate way to measure FO and JMC progress. To provide an objective way to evaluate the strength and performance of FOs before considering them for turnover, the team suggested a first approximation of minimum acceptable percentage scores for turnover. These numbers can be refined over time as more experience is gained in rating FOs and JMCs.

IIMI discussed with the agencies the possibility of assisting the agencies in improving their M&E systems. Neither the IMD nor MEA were interested. However, the Irrigation Department showed interest and worked together with IIMI to devise an M&E system that may be useful for MANIS schemes. This system was tested at Kaltota scheme in October 1994. The work required simple modifications of the indicators and development of a simple and easy to implement plan for carrying out the monitoring. Such modifications and plan are described in detail in Volume III of this report. The methodology developed seems to avoid present problems with IMD's ME&F system and yet provides accurate data on progress of FOs.

To monitor progress in a large number of schemes, the team considered a number of methods and suggested that a modified version of the recurrent surveys carried out for the study itself would work well. For this purpose, a specialized research institute such as ARTI should be used.

The following thus is recommended

We strongly believe that the government should have an effective way of keeping track of the progress of FOs, JMCs and turnover. Based on these experiences and findings, we recommend:

1. That the IMD modify the ME&F system to solve the problem of dependence on IOs for monthly reports. Specifically, the IMD could reconsider the idea that FOs will be interested in collecting data for themselves and for the IMD. The lessons from the Kaltota experiment may be useful.
2. That the MEA install its monitoring and evaluation system as soon as possible. The indicators may be helpful in this regard.
3. That the Irrigation Department consider developing a recurrent survey-type monitoring program for MANIS schemes based in the IMACs.

## CHAPTER 1

### THE PARTICIPATORY IRRIGATION SYSTEM MANAGEMENT POLICY

#### 1.1 The Issue

Sri Lanka has been developing the "participatory irrigation system management policy" since 1979, although aspects of it date from the passage of the Paddy Lands Act in 1958. Much of the development has been through experiments and special projects. In 1988, a Cabinet Memorandum declared the policy official. Since then, the various government agencies involved have developed detailed plans for implementing the policy and some aspects have been codified into law. The Irrigation Management Policy Support Activity strongly recommended that the participatory management policy be made one of the keystones for reform of the irrigated agriculture sector (IMPSA 1992).

Despite this long history, there remain disputes and unclear aspects about how the policy should be implemented and what can be expected from it. This report is a summary of the results of a 2 year study by the International Irrigation Management Institute (IIMI) and the Hector Kobbekaduwa Agrarian Research and Training Institute (*ARTI*) to evaluate the progress and impacts of the policy in detail so that the government and the implementing agencies can review various aspects of the policy and revise both the policy itself and the programs for implementing it to make it more effective. The study has been supported by Technical Assistance No 1705 from the Asian Development Bank and has been aided by the various government agencies involved in implementing the policy.

#### 1.2 Basics of the Policy

Prior to 1978, all "major" (those whose commands are over 800 hectares) and "medium" (those whose commands are between 80 and 800 hectares) irrigation schemes in Sri Lanka were managed by the Government. That is, government personnel were responsible for operations of the headworks, main and branch channels, distributary channels, and field channels and for maintenance of headworks, main and branch channels, and distributary channels. Funding for management of these schemes was derived from general government revenues; no irrigation fee was charged to farmers.

Under pressure from international donors and as part of other attempts to improve irrigation management, the government imposed an irrigation service fee in 1984 to improve the funding position of O&M and thus the sustainability of the system. Although the collection rate for the first year was good, it declined thereafter as some of the promises made to farmers remained unfulfilled and as unrest increased in the countryside due to the JVP disturbances.

In 1988, the government adopted the "participatory irrigation system management policy." As defined in a Cabinet Paper, full responsibility for operations and maintenance (O&M) and for resource mobilization of field channels and distributary channels of the major irrigation systems is to be turned over to farmer organizations. In return, farmers would be exempted from payment of the irrigation service fee. The government would retain responsibility for O&M of the headworks and main systems.

There are two primary goals of the policy:

1. Improved productivity of the irrigation schemes through management by farmers. The underlying idea is that farmers have the information, ability, and incentive to manage the system to better serve crop needs.



2. An increased share of O&M expenditure borne by the farmers. Transferring a portion of the O&M responsibilities to the farmers should help relieve pressure on the government budget.

Since that time, the effort to collect the irrigation service fee has been stopped, while the effort to implement participatory management has continued and been strengthened.

### 1.3 The Three Programs

The **INMAS**, **MANIS**, and Mahaweli programs are the government's main means for implementing participatory management.

- **INMAS** The Integrated Management of Major Irrigation Schemes (**INMAS**) program began in 1984 under the newly created Irrigation Management Division (IMD) with the cooperation of the Irrigation Department. INMAS was the result of several experiments that showed the potential of organized farmer involvement in irrigation system management. Schemes brought under **INMAS** (originally 48, since reduced to 35) include most of the large schemes in the country.
- **MANIS** The INMAS program deals only with larger schemes and does not include the medium schemes. Therefore, in 1986 the Irrigation Department created the Management of Irrigation Schemes (**MANIS**, now referred to as WAPHAULA) program to serve the needs of the medium schemes. The basic organization and objectives of **MANIS** are the same as those of INMAS except that it is managed solely by the Irrigation Department.
- **Mahaweli** In 1977, the Mahaweli Authority of Sri Lanka (MASL) took over the construction, development, settlement, and operation of several very large irrigation schemes. Operation of the schemes was entrusted to the Mahaweli Economic Agency (MEA). Since 1980, MEA has been experimenting with ways to encourage farmers to take greater part in system O&M. These experiments have not had much success. In 1992, the MEA adopted an organization similar to that developed for INMAS and is now implementing it throughout its schemes.

Although not one of the three programs focusing on irrigation management, personnel from the Agrarian Services Department have also been directly involved in creating and strengthening farmer organizations in many major and medium irrigation schemes. Also, various private voluntary organizations have been involved in some specific schemes.

Of the 270 major and medium schemes, 199 have been effectively included in the three programs. Most of the remainder are located in security areas. Of these, 160 schemes are included in the MANIS list. The Irrigation Department divides the **MANIS** schemes into 3 classes based on the amount of effort expended so far. **MANIS** Class C schemes have had very little effort. Therefore, at the request of the Irrigation Department, **MANIS** schemes were divided into two groups: those in classes A and B on the one hand, and those in class C on the other. Table 1.1 gives the distribution of major schemes among the program categories.

Table 1.1: Schemes in the Three Programs

Program	# of Schemes	Total Command Area	Average Command Area
Mahaweli	4	121,000 ha	30,250 ha/ scheme
INMAS	35	197,000 ha	5,629 ha/scheme
MANIS	160	59,000 ha	369 ha/scheme
Total	199	377,000 ha	

## 1.4 Components of Participatory Management

Since 1992, when the MEA adopted the INMAS approach, all three programs have been using the same basic model for participatory management. Figure 1.1 shows the INMAS model scheme management structure. This structure has the following components and features:

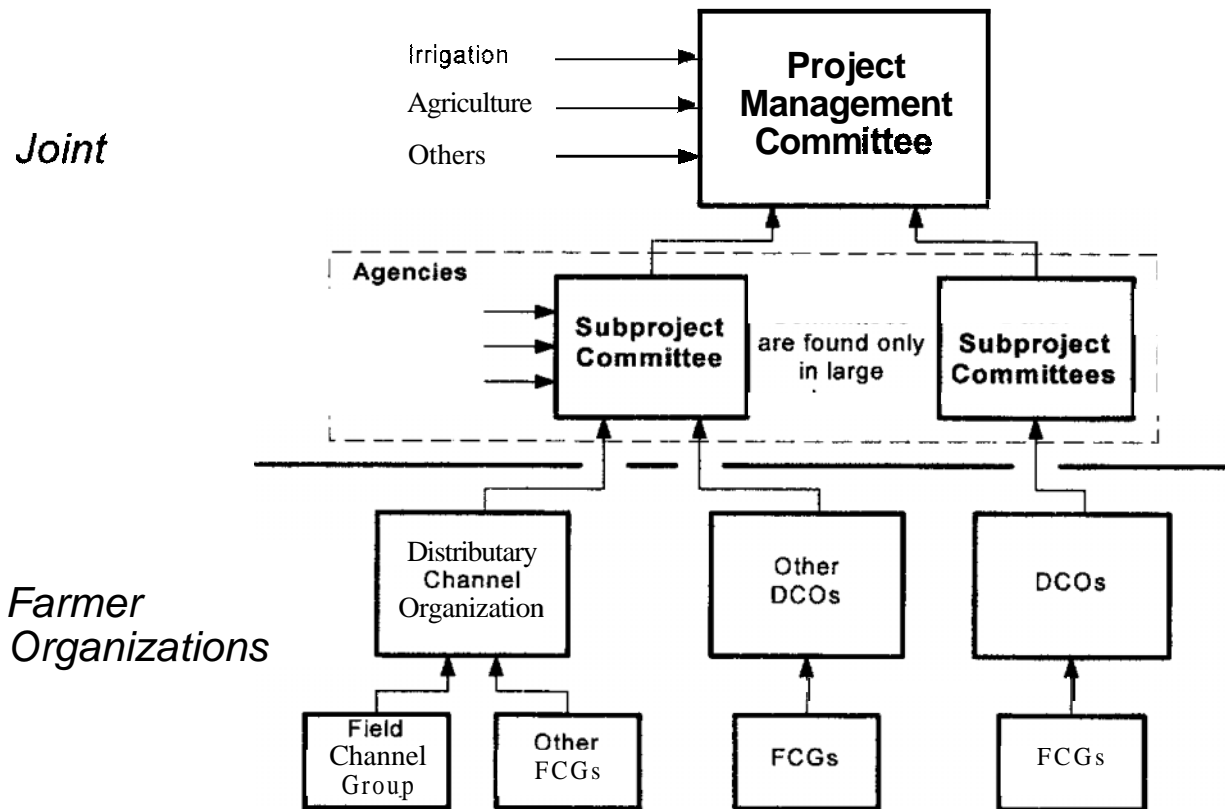
1. **Farmer Organizations** Hydrologically based farmer organizations (FOs) are fundamental to the scheme. FOs' basic functions are to deal with irrigation matters, but they are not limited to irrigation matters. Most FOs consist of informal Field Channel Groups (FCGs), each of which selects a Farmer Representative (FR) who sits on a committee that governs the Distributary Channel Organization (DCO). The DCO is considered the legal farmer organization. In some schemes, farmers have federated the DCOs into System Level Farmer Organizations (SLFOs).
2. **Joint Management Committees** Each scheme has a structure of Joint Management Committees (JMCs) on which sit officers from the relevant agencies and Farmer Representatives. Minimally, every scheme has one committee, generally called a Project Management Committee (PMC). The PMC is responsible for preparation of the seasonal plan, including allocating water to different parts of the system according to the crop plan, and deciding upon an overall schedule of operations. In addition, the PMC attempts to coordinate efforts among agencies, improve communication and resolve problems between farmers and agencies, and resolve disputes among DCOs. Larger schemes have lower level joint management committees, generally called Subproject Committees, to deal with irrigation and other problems of smaller units within the scheme.
3. **Turnover** Once the FOs and JMCs are established and considered capable of handling the responsibilities, the irrigation agency formally assigns ("hands over") the full responsibilities for operations and maintenance (O&M) on the distributary channels and field channels to DCOs. The agency retains responsibility for O&M of headworks, main channels and branch channels.

Table 1.2 contrasts the assignment of management responsibilities before participatory management with the proposed assignment under participatory management.

Table 1.2: Comparison of Pre-Participatory Management and Participatory Management Systems

Management Function	Pre-Participatory Management	Participatory Management
1. Seasonal planning	Done by agencies and ratified at kanna meetings	Done by PMCs
2. Operations planning	Done by agencies, basic plans ratified by kanna meetings	Done by agencies, basic plans ratified by PMCs
3. Headworks, main channel, branch channel operations	Carried out by irrigation agencies	Carried out by irrigation agencies
4. Distributary channel operations	Carried out by irrigation agencies	Carried out by FOs after turnover
5. Field channel operations	Carried out by irrigation agencies	Carried out by FOs
6. Headworks, main channel, branch channel maintenance	Planned and carried out by irrigation agencies	Carried out by irrigation agencies in priority order determined by PMCs
7. Distributary channel maintenance	Planned and carried out by irrigation agencies	Planned and carried out by FOs after turnover
8. Field channel maintenance	Done by individual farmers under direction of the <i>Yaya Palakas</i> of the Agrarian Services Department	Done by FOs

Figure 1.1: The INMAS Organization Model



## 1.5 Objectives and Methodology of the Study

As stated in the Technical Assistance Agreement, "the objective of the Technical Assistance is to assist the Government and the irrigation agencies in the implementation of the Government's new participatory irrigation system management policy through a comprehensive monitoring and evaluation of the Turnover Program being implemented under this policy."

The Terms of Reference for the study incorporate a series of activities that focus on two items:

- Evaluation of the **progress** and impacts of the participatory management policy with an eye towards changing the policy and programs to make them more effective.
- Development of methods by which the government can improve its monitoring and evaluation of the progress and impacts of the participatory management policy.

In order to carry out the evaluation of progress and impacts, the IIMI/ARTI team undertook three data collection efforts: Recurrent Surveys of **30** FOs in 18 schemes from the three programs, Process Documentation for **six** FOs in **six** schemes from the three programs, and a Large Scale Survey that covered **51** schemes and 172 FOs in the three programs. In addition, other sources and a few small special

studies were undertaken to deal with particular issues. Detailed descriptions of the methodology and selected field sites are given in Volume II of this report.

To improve monitoring and evaluation methods, **IIMI** conducted a small survey of field managers and others to determine information needs and the current sources of information. In addition, the **IIMI/ARTI** team gave considerable thought to measures and indicators of important characteristics of participatory management. Although **IMD** and **MEA** declined, **IIMI** cooperated with the Irrigation Department in an experiment to devise an improved field data collection and analysis method for monitoring and evaluation. The methods used and the results are given in Volume III of this report.

## **1.6 Organization of the Report**

The overall report is divided into three volumes:

- Volume I is this report. It summarizes the main results of the study, including the major conclusions and recommendations.
- Volume II presents the detailed results of the evaluation of progress and impacts of participatory management.
- Volume III presents the results of the investigation into ways to improve the monitoring and evaluation of the participatory management policy.

The current volume is organized according to the major components of the participatory management policy. **Thus**

- Chapter 2 deals with the status of farmer organizations,
- Chapter 3 covers the status of joint management committees,
- Chapter 4 covers the status of turnover,
- Chapter 5 deals with agency support for participatory management,
- Chapter 6 deals with impacts on agricultural production, income, and government finances,
- Chapter 7 discusses sustainability concerns,
- Chapter 8 synthesizes these findings into a series of major conclusions and recommendations,
- Chapter 9 summarizes the findings on monitoring and the suggestions for monitoring the policy in the future.

## CHAPTER 2

### FINDINGS ON FARMER ORGANIZATIONS

#### 2.1 Organized Schemes

The study found that farmer organizations (FOs) are widespread. Of the 51 schemes selected for the Large Scale Survey, two, both **MANIS C** schemes, were not visited because of security concerns. Of these 49 schemes, four **MANIS C** schemes were not working schemes and two others did not have farmer organizations. Both schemes without FOs were Wet Zone drainage schemes. Also, one **MANIS AB** scheme (with FOs) had been incorporated into an **INMAS** scheme and was removed from the sample. All sampled **INMAS** and Mahaweli schemes had farmer organizations. If we extrapolate from these findings, we see that

- all 35 **INMAS** schemes have farmer organizations,
- all 59 schemes on the **MANIS AB** list have farmer organizations, although some may no longer be separate schemes,
- about 71 of the 101 schemes on the **MANIS C** list have farmer organizations although some other schemes on the list may not be functioning schemes, (14 of the 20 sampled schemes have farmer organizations:  $14/20 \times 101 \text{ schemes} = 70.7$ ),
- all four Mahaweli schemes have farmer organizations.

Altogether, then, we project that approximately 169 or 85% of the 199 schemes included in the three programs have farmer organizations. These findings also suggest that the majority of the **MANIS C** schemes that do not have FOs are schemes are not functioning. The truly surprising finding is that so many FOs have been formed in both **MANIS AB** and **MANIS C** schemes despite the relative lack of effort.

In some schemes, not all the farmers are yet organized into FOs. Officers reported plans to create additional FOs in six of the 42 schemes with FOs in the Large Scale Survey. **These** included two Mahaweli schemes, one **INMAS** scheme, and three **MANIS AB** schemes. The largest number of FOs yet to be created per scheme was five and the largest percentage was 60%.

In most of the schemes where no FOs were reported, other mechanisms exist for farmer involvement in irrigation management. **The** most common such mechanism is the Vel Vidane (sometimes called "irrigation headman"). In some schemes, both Vel Vidanes and FOs exist. One such scheme is Mannankattiya, one of the Process Documentation schemes.

#### 2.2 Farmer Organization Number and Size

Table 2.1 shows the average number of FOs per scheme, and the average area per **FO** for the schemes included in the Large Scale Survey (LSS). As expected, the number of FOs per scheme varies widely because of the large differences in the sizes of the schemes. Mahaweli schemes average over 175 FOs per scheme, **INMAS** schemes average about 15 FOs per scheme, **MANIS AB** schemes have about 6 FOs per scheme while the **MANIS C** schemes with FOs have about 4 FOs per scheme. There are a significant number of **MANIS C** schemes that have only one FO.

Table 2.1: Numbers and Areas of Farmer Organizations

Program	Average FOs per Scheme	Range	Average Area per FO (ac)	Range (ac)
INMAS	6	3-15	141	73-210
MANIS AB	4	1-20	206	77-500

Program	Sample FOs	Farmers	Members	Farmers per FO	Members per FO	% Members
INMAS	60	10,483	7,709	175	128	74 %
MANIS AB	22	3,101	1,648	139	75	53 %
MANIS C	23	2,784	1,471	121	64	53 %
Mahaweli	63	7,230	5,118	115	81	71 %

Program	Sample	# of Sample Schemes	Schemes with Head-Tail Problems	% of Sample
INMAS	LSS	12	7	58 %
	RS/PD	7	5	71 %
MANIS AB	LSS	12	10	83 %
	RS/PD	11	7	64 %
MANIS C	LSS	14	10	71 %
Mahaweli	LSS	4	3	75 %
	RS/PD	2	1	50 %

These distribution problems are due to various factors. Table 2.4 shows the problems cited by irrigation agency officers during the LSS. From this table, it is apparent that scheme physical deficiencies and lack of O&M funds are the major identified causes, except in Mahaweli schemes. Poor farmer-officer cooperation is seen as a problem in the majority of Mahaweli schemes and seems to be a problem in a significant number of MANIS AB schemes but not in the other schemes. The large percentage of "other" answers for Mahaweli schemes refers to two schemes reporting inadequate planning as a problem. This was one among a wide variety of other answers in MANIS C schemes.

Table 2.4: Major Causes of Water Distribution Problems

Program	Causes (See list below for Key)*					
	A	B	C	D	E	Others
INMAS	8 %	50 %	8 %	75 %	17 %	17 %
MANIS AB	45 %	82 %	27 %	91 %	36 %	27 %
MANIS C	29 %	71 %	14 %	43 %	21 %	50 %
Mahaweli	25 %	25 %	25 %	25 %	75 %	50 %

\* Multiple answers mean that the numbers add up to more than 100%. Numbers of schemes are: INMAS-12, MANIS AB-11, MANIS C-14, Mahaweli-4.

Key: A - Inadequate water supply  
 B - Physical deficiencies in the system  
 C - Poor agency water distribution performance  
 D - Inadequate O&M funds  
 E - Poor farmer-officer cooperation

Inadequate O&M funds generally lead to poor system maintenance, causing physical problems with the system. The RS and PD data confirms that poor physical conditions and design deficiencies in many schemes cause major problems in distribution within the schemes. On the other hand, several management problems also emerged that were not related to poor physical condition.

**Water Distribution Responsibilities** In general, except in Mahaweli schemes, FOs take responsibility for operation of field channel headgates and for operations on field channels, including scheduling deliveries to the field channels whenever such scheduling is carried out. In Mahaweli schemes, MEA officers generally operate all gates though many now do so in cooperation with farmers.

Farmers and FOs are, in a few schemes, also directly involved in main system operations. For example, in Mannankamya, a **MANIS** scheme, the main sluices and all downstream gates have for a long period been operated by Vel Vidanes. The four FOs under Abakolawewa Tank in Mee Oya, an INMAS scheme, have now taken over the full operation of the tank and the distribution below it.

**Farmer Satisfaction with Water Distribution** In the Large Scale Survey, we questioned farmers about the adequacy, timeliness, and reliability of water delivery to their farms. The results are shown in Table 2.5 and in Figure 2.1.

Table 2.5: Farmer Opinions of Farmer Organization Water Distribution Performance

Location within FO Area	Stage of Season	Indicator	INMAS		Mahaweli		MANIS AB		MANIS C	
			N	%	N	%	N	%	N	%
Head	Crop Growth	Adequacy	52	85	58	92	18	78	9	36
		Timeliness	51	84	58	92	18	78	9	36
		Reliability	51	84	57	90	18	78	9	36
Tail	Crop Growth	Adequacy	43	70	34	54	15	65	6	24
		Timeliness	37	61	41	65	15	65	6	24
		Reliability	38	62	44	70	15	65	6	24

These results can be summarized as follows:

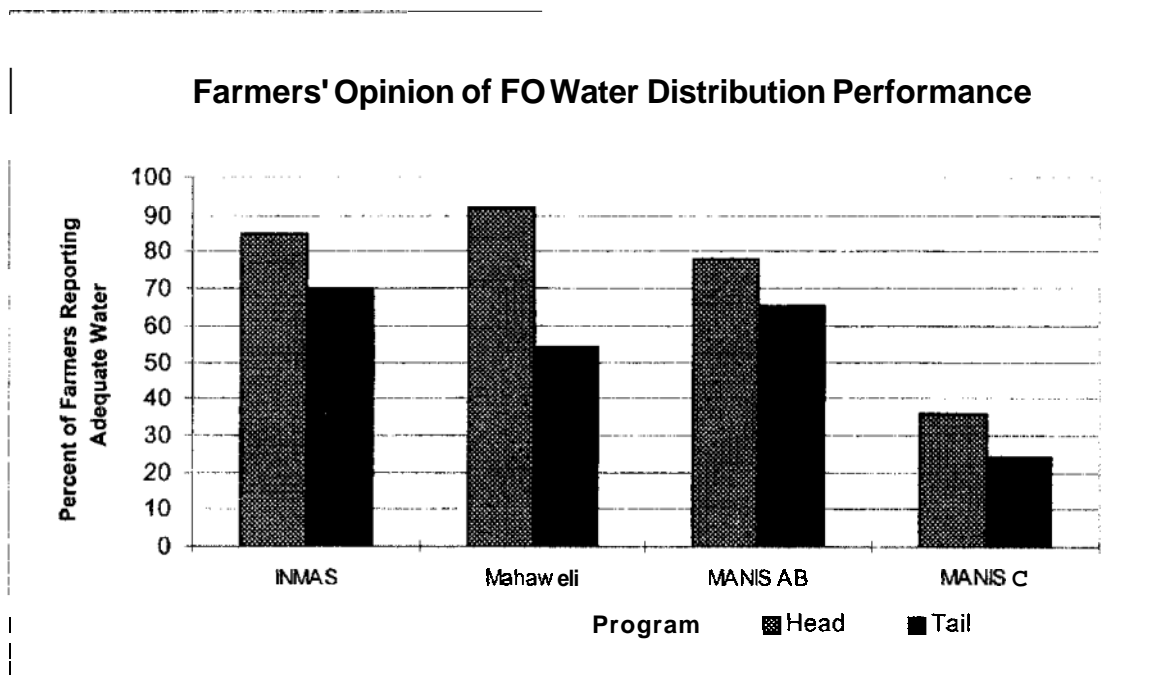
- The majority of farmers in INMAS, Mahaweli, and MANIS AB schemes are satisfied with water delivery performance as measured by all three indicators.
- The majority of farmers in MANIS C schemes are not satisfied with water distribution performance. This indicates either that FOs do a poor job of water distribution or the agency does a poor job of distributing water to the FOs or both. RS and PD data do not help to explain which because none of the RS or PD sites fell into the MANIS C category. One probable explanation is that poor physical conditions make it difficult for both the agency and the FOs to deliver water efficiently.
- As expected, satisfaction was higher in head areas of the FOs than in tail portions of the FOs. The implication is that water distribution is not fully equitable within the FO area.
- Differences in satisfaction between head and tail are somewhat greater in Mahaweli schemes than in INMAS and MANIS schemes. This implies that Mahaweli FOs do a poorer job of distributing water equitably than do either INMAS or MANIS FOs. It is quite likely that the reason is because MEA Irrigators are more directly involved in water distribution within FO areas than are ID employees in INMAS and MANIS schemes.
- The difference in satisfaction between head and tail farmers in MANIS C schemes is small. This suggests that poor distribution is found throughout the FO areas.



These results indicate that FOs in INMAS, MANIS AB, and Mahaweli schemes are reasonably effective in water distribution. These findings agree with the 74% of the irrigation agency officers questioned during the LSS who said that participatory management has improved water distribution (See Figure 2.2).

As is implied in Table 2.5, detailed observations of FO water distribution in a few selected schemes shows that equity between head and tails of distributary and field channels is not maintained fully (see Annex C in Volume II). Generally, FOs are able to maintain partial equity among their members. The relative importance given to water distribution was observed to have changed over the study period, particularly in Mahaweli schemes where several FOs began to take greater interest as time went on. This seems to have occurred as it was made clear that O&M would be turned over to the FOs and farmers come to know rehabilitation would be forthcoming.

Figure 2.1: Farmer's Opinions of FO Water Distribution Performance (Adequacy)



## 2.5 Farmer Organization Maintenance Performance

Because the major irrigation systems were built by the government, maintenance of most portions of these systems has been the responsibility of the irrigation agency in the past. Maintenance of the field channels and below has been the responsibility of the farmers. However, with increasing budgetary constraints, the irrigation agency found it difficult to maintain irrigation systems. Under participatory management, maintenance of distributary channels and below has become the responsibility of the farmer organizations.

**Maintenance Planning** Planning for maintenance was the task of the irrigation agency prior to participatory management. Now, in INMAS schemes, DCO members identify and prioritize maintenance needs and forward the list to the JMC. At the JMC, DCO requests are discussed and further prioritized and forwarded to the Irrigation Department for implementation. This process was

not observed in MANIS systems, largely because FOs and JMCs are not as well developed as in INMAS schemes. In most MANIS schemes, there was no systematic planning of maintenance. In Mahaweli schemes, the JMCs are directly involved in maintenance planning.

**Implementation of Maintenance** There are two major maintenance activities carried by FOs: jungle clearing and desilting. FOs are expected to desilt and clear the weeds (jungle) from their own FCs by themselves. In most INMAS and MANIS systems, clearing DCs has become the duty of the FOs. Desilting of DCs is sometimes done by FOs. Besides these major activities, FOs are also expected to attend to small repairs, including undertaking minor earthworks such as bund fillings, and oiling and greasing of canal gates. All activities other than FC cleaning and desilting are done on the basis of a contract with the irrigation agency.

Besides undertaking FC and DC maintenance, the FOs in some instances have undertaken main canal (MC) maintenance. MC maintenance activities were found in several RS and PD schemes, including two INMAS schemes and most of the MANIS schemes. In most cases, MC maintenance works were undertaken on contract with the ID. However, there were cases where MC maintenance had been done by FOs without payment. FOs have even attended to service road maintenance as reported from Rajangana and some Mahaweli systems. Clearly, FOs can undertake maintenance activities beyond simple cleaning and desilting of FCs and DCs.

These cases show that most farmer organizations, particularly those in INMAS and Mahaweli schemes, now have the capability of handling maintenance work provided it answers a felt need or the financial resources are forthcoming.

**Quality of Maintenance** Clearing and desilting of FCs and DCs undertaken by the FOs alone or together with the agencies are reported as satisfactory. This appears to be a major improvement over the situation prior to participatory management. Earlier, a common complaint from farmers was that the quality of clearing and desilting was inadequately done. Most agency personnel agree that this was the case. Agency maintenance laborers responsible for jungle clearing only cleared the vegetative overgrowth. FOs completely clean the vegetation so that it will not grow again during the season. For desilting, FOs request the assistance of the irrigation agency where silt deposition was excessive. Such a request was reported from Muthukandiya after the 1993/1994 Maha rains.

Problems exist. It is found that where the FO assigns sections of the canal to individual fanners, some farmers complain that their sections are too large and do not do all of it or do a poor job of it. In other places, farmers who get little water refuse to do anything. Many of the FOs report difficulties in dealing with these problems. Overall, however, the problems are fewer than the successes. These comments apply only to jungle clearing and desilting. Other maintenance activities, such as structure repair, are not routinely undertaken by FOs.

Of the FO office-bearers interviewed for the LSS, 90% from INMAS schemes, 82% from Mahaweli schemes, 90% from MANIS AB schemes, and 53% from MANIS C schemes were satisfied with the quality of maintenance carried out in DCO areas. To further improve maintenance, most respondents said that their FOs need additional funds. In MANIS C systems, training and technical know-how were also identified as important aspects to improve maintenance. In Mahaweli, training was identified as a needed input to improve maintenance.

Table 2.6: Impact of Participatory Management on System Maintenance

Impacts	INMAS	MANIS AB	MANIS C	Mahaweli
Improved maintenance	42 %	75 %	50 %	25 %
Worsened maintenance	17 %	8 %	-	-
No change	33 %	17 %	29 %	25 %
No response	8 %	-	21 %	50 %

Table 2.6 and Figure 2.2 show the opinions of the irrigation officers from the LSS sample schemes about the impact of participatory management on maintenance. A majority of ID officers in MANIS AB systems and half or almost half in INMAS and MANIS C schemes felt that participatory management has improved maintenance. This improvement refers primarily to improved farmer contributions (cash and kind) in maintenance and better organization of maintenance activities. These factors assist ID officers to perform maintenance better. The inference is that ID would not have been able to maintain the system in the present condition without participatory management. Note that the low number of responses from Mahaweli schemes (only 4) makes the Mahaweli responses shown in Table 2.6 not very meaningful. As shown in Figure 2.2, irrigation officers' opinions of the impact of participatory management on maintenance are significantly less favorable than their opinions of the impact on water distribution.

To improve maintenance, about half of the Irrigation Department officers interviewed in the LSS felt that rehabilitation was required; the others felt that additional funds were needed. None identified the problems as ones of management of resources. One would expect a felt need for rehabilitation from MANIS schemes where no physical rehabilitation had been done in the recent past. Surprisingly, though, this opinion was also expressed by some officers from INMAS schemes which have had recent rehabilitation. From the LSS sample, officers from Rajangana which was rehabilitated under MIRP and from Ridi Bendi Ela which was rehabilitated under ISMP expressed the opinion that further work was needed on the distributary and lower level channels. Kaudulla, an RS site, also rehabilitated under ISMP, reportedly has the same problem.

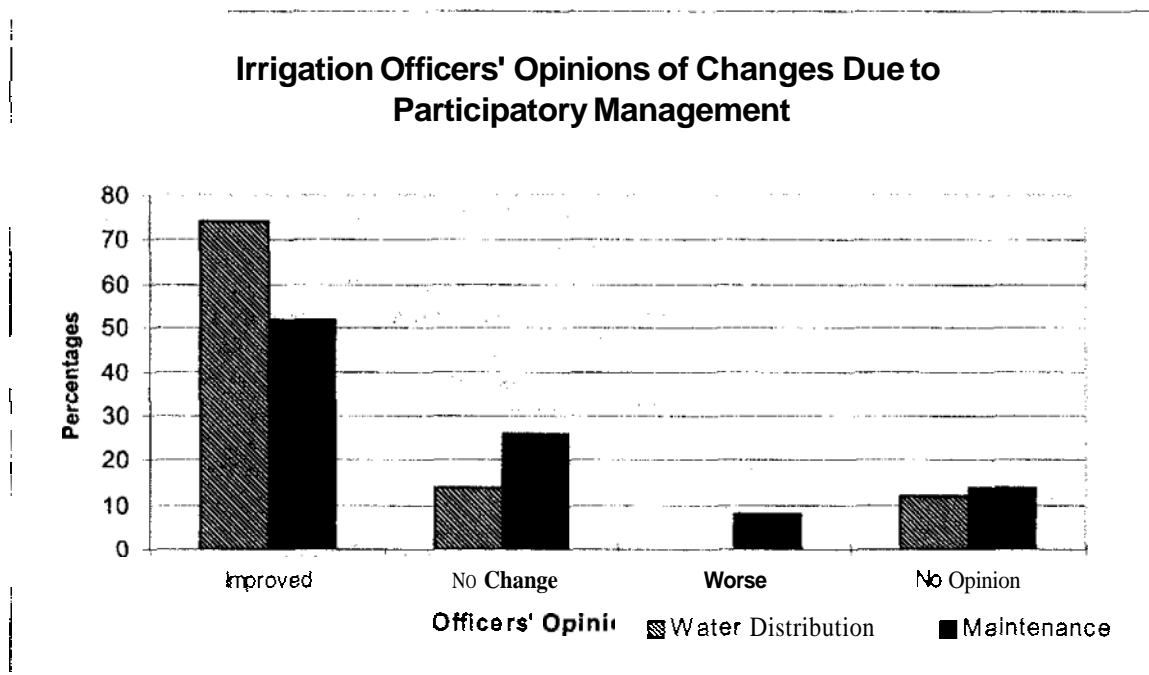
It may be that some rehabilitation work was not done well enough so that farmers could manage the channels easily. Some farmers complain that their participation in planning and design was not sought for much of the recent rehabilitation work. Also, in the recent rehabilitation projects, the concrete work was done by the agency but most of all the earth work was left for the FOs. As there was little guidance from the agencies on this earthwork, some concrete structures are now deteriorating faster than expected. This situation has been reported strongly by Kaudulla DCOs. The Kaudulla PMC passed a unanimous resolution to petition the Irrigation Department to take back all the DCs handed over to them in 1992. The systems should have been rehabilitated with explicit farmer participation. Only then can the ID demand better maintenance by the FOs.

**Operation and Maintenance Allocation** In many systems, farmers, as well as irrigation agency officers, complain of inadequate O&M funds, particularly for maintenance activities. Usually the funds allocated for O&M are about half of the estimates submitted. Present O&M allocations are insufficient for the irrigation agencies to maintain the systems without the cooperation of FOs. The irrigation agencies complain that other maintenance costs, e.g. for vehicles, buildings, etc., have to come from the same O&M allocation. The problem of insufficient allocations has been partly "solved" by contracting with FOs for DC maintenance work but paying them less, often much less, than the work would cost if all of the labor were paid for. The presumption is that the FOs will carry out the work out of self interest. Under this situation, FOs often complain of inadequate payment for the work performed. FOs cannot always perform maintenance by shramadana. FOs at times have to hire labor to carry out

maintenance. The O&M allocation from the irrigation agency aids the FOs in this situation. Many officers and farmers assert that FOs lack the funds to supplement O&M allocation shortfalls.

Farmers have come to expect the maintenance allocations from the government. Some farmers are of the opinion that if the systems can be properly rehabilitated with full farmer participation, the FOs may be able to maintain the systems without O&M allocations. However, the farmers also say that major repairs must continue to be the responsibility of the irrigation agency.

Figure 2.2: Irrigation Officers' Opinions of Changes Due to Participatory Management



## 2.6 FO Non-Irrigation Activities

### 2.6.1 Business Activities

Many FOs have taken up business activities, particularly agricultural service activities. The number is still a minority; during Yala 1994, 22% of the Mahaweli sample FOs, 45% of the **INMAS** sample FOs, 5% of the MANIS AB sample FOs, and 16% of the MANIS C sample FOs have taken up one or more businesses. The RS and PD studies, however, made it clear that the number involved varies from year to year as FOs take up, drop, and take up businesses again. It is clear that **INMAS** FOs are far in the lead. However, the **MEA** has recently made it a priority to help the FOs take up these businesses.

The most popular business is selling fertilizer (37% of **INMAS** FOs and 16% of Mahaweli FOs). A few (15% of **INMAS** FOs and 13% of Mahaweli FOs) have gone into paddy marketing. Several of the FOs have taken up supplying seed, not just for paddy but for other crops as well. The study found that these activities are generally carried out effectively. However, the FOs often depend upon assistance from the government agencies for such things as warehouses for fertilizer and other supplies.

Some FOs have hired out agricultural implements to members. Most frequently, these are tractors purchased by the FO from the Department of Agrarian Services. This facility is provided by the