

**STUDY ON MONITORING AND EVALUATION
OF PARTICIPATORY IRRIGATION SYSTEM MANAGEMENT**



INCEPTION REPORT

(Revised)

15028

International Irrigation Management Institute
Sri Lanka Field Operations

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ABBREVIATIONS

ADB	Asian Development Bank
ARTI	Agrarian Research and Training Institute
DCO	distributary channel organization
FCG	field channel group
FR	Farmer Representative
FO	farmer organization
ID	Irrigation Department
IIMI	International Irrigation Management Institute
IMD	Irrigation Management Division
IMPSA	Irrigation Management Policy Support Activity
INMAS	Integrated Management of Major Irrigation Schemes
IO	Institutional Organizer
IRDP	Integrated Rural Development Project
ISMP	Irrigation Systems Management Project
JMC	joint management committee
M&E	monitoring and evaluation
MASL	Mahaweli Authority of Sri Lanka
MANIS	Management of Irrigation Schemes (program)
MARD	Mahaweli Agricultural and Rural Development (Project)
MEA	Mahaweli Economic Agency
MIRP	Major Irrigation Rehabilitation Project
MLIMD	Ministry of Lands, Irrigation, and Mahaweli Development
NIRP	National Rehabilitation Project
NWPP	Northwestern Province Water Resources Development Project
O&M	operations and maintenance
PMC	Project Management Committee
PMU	(Mahaweli) Planning and Monitoring Unit
SPC	Subproject Committee

FOREWORD

This document is a revised and expanded version of the Inception Report for the Study on Monitoring and Evaluation of the Participatory Irrigation System Policy (TA 1705 SRI). The original version was issued in December 1992, three months after the official beginning date of the project.

This version has been revised to incorporate details developed since the first version was produced and to add material requested by the Asian Development Bank. This revised version elaborates on the basic plan described in the first version, primarily in terms of data collection strategy. It also adds material that a) places the study in the broader context of privatization and turnover in the world and in IIMI's activities, and b) that describes succinctly what the expected impacts of this study are. Some background material is added for the convenience of the reader.

The Study Working Group read and approved the first version of the Inception Report. Both the Working Group and Coordination Committee read a draft of the present work and requested the changes incorporated herein. These changes agreed with changes requested by the Asian Development Bank. I thank the members of the Working Group, my colleagues on the IIMI/ARTI team, Mr. W. Lincklaen Arriens, and Mr. Pieter Smidt of the Asian Development Bank for their comments and support.

Jeffrey D. Brewer
Project Leader

Section 1

BACKGROUND TO THE STUDY

1.1 The Participatory Management 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 (see Annex A). 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.

In 1988, the government adopted the "participatory irrigation system management policy." As defined in a Cabinet Paper (Annex I), full responsibility for resource mobilization and for O&M 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 an irrigation service fee. The government would retain responsibility for O&M of the headworks and main systems. The participatory management policy remains in effect today and is a key element of the future development of irrigated agriculture in Sri Lanka (IMPSA 1991).

The goals of the policy are twofold:

1. Improvement of the productivity of the irrigation schemes through improved farmer ability to manage the system to serve crop needs.
2. Increasing the share of O&M expenditure borne by the farmers by transferring a large portion of the O&M responsibilities to them. This would help relieve pressure on the government budget.

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

- The Integrated Management of Major Irrigation Schemes (INMAS) program began in 1984 under the newly created Irrigation Management Division (IMD). 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 37) included most of the largest schemes in the country.
- The INMAS program dealt only with larger schemes and did not include the medium schemes. Therefore, in 1986 the Irrigation Department created the Management of

Irrigation Schemes (MANIS) program to serve the needs of the medium schemes. The basic objectives of MANIS are the same as those of INMAS.

- 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.

For more detailed descriptions of the three programs, see Annex B. Table 1 gives the distribution of major schemes among these three programs.

Table 1: Schemes in the Three Programs

Program	# of Schemes	Total Command Area	Average Command Area
INMAS	37	197,000 ha	5,324 ha/scheme
MANIS	160	59,000 ha	369 ha/scheme
Mahaweli	6	121,000 ha	20,167 ha/scheme
Total	202	377,000 ha	

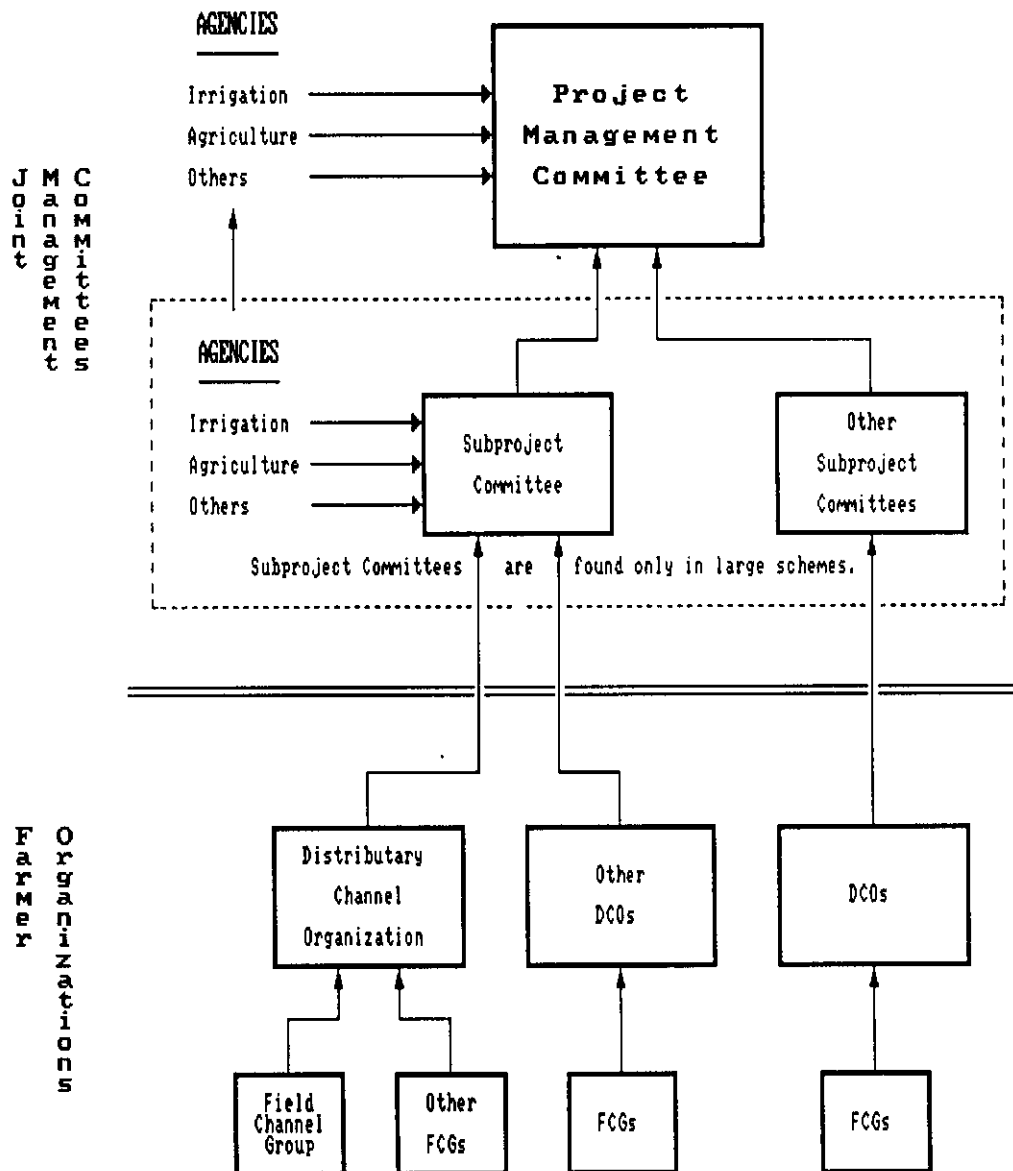
1.2 Basic Features of the Participatory Management Policy

Since 1992, when the MEA adopted the INMAS approach, all three programs are now using the same basic model for participatory management. Figure 1 shows the model scheme management structure. This model has the following components and features:

Farmer Organizations

1. Each scheme has hydrologically based farmer organizations (FOs) whose basic functions are to deal with irrigation matters, but farmer organizations are not limited to irrigation matters. Most farmer organizations consist of informal Field Channel Groups (FCGs), each of which selects a Farmer Representative (FR) who sits on the Distributary Channel Committee that governs the Distributary Channel Organization (DCO). It is the DCO that is considered the legal farmer organization. However, in some schemes, farmers have created System Level Farmer Organizations by federating DCOs.

Figure 1 : Scheme Management Organization for Participatory Management



Joint Management Committees

2. Each scheme has a structure of joint management committees (JMCs) on which sit both officers from the relevant agencies and Farmer Representatives. Minimally, every scheme has a top level 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 to deal with irrigation and other problems of smaller units within the scheme.

Turnover

3. Once the FOs and JMCs are established and considered capable of handling the responsibilities, the irrigation agency formally assigns ("turns 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.

The basic process is diagrammed in Figure 2. The idea is that both farmer organizations and joint management committees will improve communications with the agencies and thus improve the agency response to farmer needs. In addition, better coordination and turnover of O&M responsibilities will lead to improved operations and management. Better O&M and better agency services will lead to increased crop production and this, in turn, should lead to increased income from irrigated agriculture. At the same time, turnover will enable the government to reduce staff and materials costs thus reducing government expenditures on O&M.

Table 2 gives a comparison of features of participatory management and the system that preceded participatory management (see Annex A). The characteristics shown are the ideal, most schemes in Sri Lanka lie somewhere between these two ideal management systems.

1.3 Need for Evaluation of the Participatory Management Policy

The Government of Sri Lanka adopted the participatory management policy to solve important problems in irrigated agriculture. Much of the planning for irrigated agriculture is being done under the assumption that the goals of the policy will be achieved. Unfortunately, we do not yet know that they will be achieved. Although there are reports of successes of participatory management in the Polonnaruwa schemes (Sheladia 1992; TEAMS 1992), others question the long term sustainability of the progress there (Athukorale 1992). Also, doubts have been raised about the success of the INMAS Program (ARTI 1991). On a more theoretical level,

participation has costs as well as benefits and the appropriate level of participation is problematic (Picciotto 1992).

Figure 2 : The Participatory Management Process

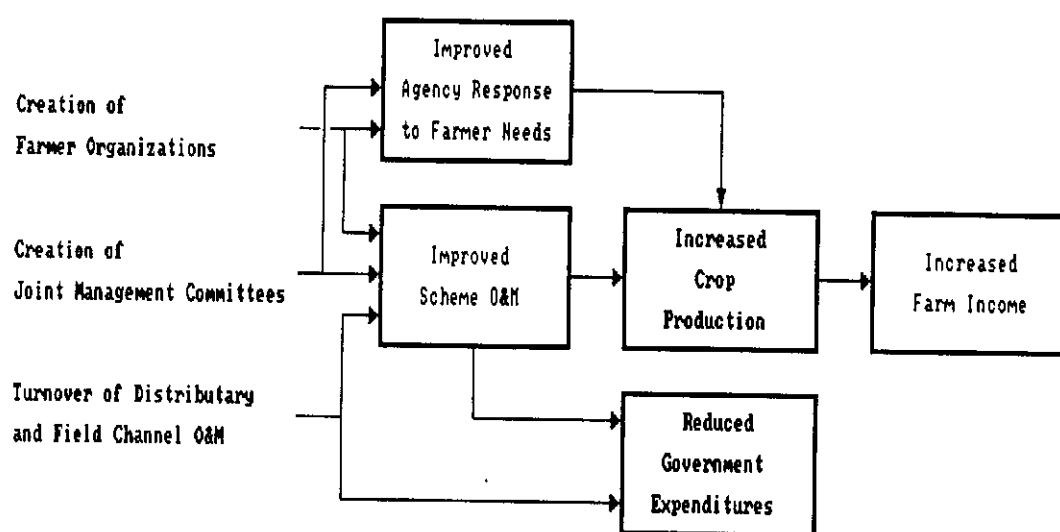


Table 2: Comparison of Pre-Participatory Management and Participatory Management Systems

Management Function	Pre-Participatory Management	Participatory Management
1. Seasonal planning	1. Carried out by agencies and ratified by "kanna" meetings	1. Carried out by PMCs
2. Operations planning	2. Carried out by irrigation agency, basic plans ratified by "kanna" meetings	2. Carried out by irrigation agency, basic plans ratified by PMC
3. Headworks, main channel, branch channel operations	3. Carried out by irrigation agency	3. Carried out by irrigation agency
4. Distributary channel operations	4. Carried out by irrigation agency	4. Carried out by DCOs
5. Field channel operations	5. Carried out by irrigation agency	5. Carried out by FCG under authority of DCO
6. Headworks, main channel, branch channel maintenance	6. Planned and carried out by irrigation agency	6. Carried out by irrigation agency in priority order determined by PMC
7. Distributary channel maintenance	7. Planned and carried out by irrigation agency	7. Planned and carried out by DCO
8. Field channel maintenance	8. Carried out by individual farmers under direction of the <i>Yaya Palaka</i> of the Agrarian Services Department	8. Carried out by FCGs under authority of DCOs

It is now over four years after adoption of the participatory management policy and over eight years after the beginnings of the programs. There is now a need for a comprehensive review of the progress and impact of the participatory management policy. Answers are needed to several questions, including:

- How far have the programs gone in achieving turnover of O&M responsibilities to farmers? Are changes needed to make the programs more effective?
- What have been the impacts of organizing farmers and turning over O&M responsibilities?
- Can farmers afford to take on O&M responsibilities?
- Will the policy achieve its two goals? If not, what changes in the programs or in the policy itself are needed?

The answers to these questions are not only important to policy-makers; donors, too, wish to know how well the policy is doing since they are being asked to invest in it through various projects.

A major difficulty in answering these questions is the lack of hard data. Data exists. Most consists of anecdotes or of studies that have focussed only on a limited subset of the irrigation schemes:

- There is rich, although not totally consistent, data on the farmer organization and turnover programs in the Polonnaruwa schemes that were carried out by the INMAS program with funding and assistance from the Irrigation Systems Management Project (Sheladia 1992). Some data exists from the INMAS schemes assisted by the Major Irrigation Rehabilitation Project.
- The Irrigation Management Division (IMD) has been monitoring various aspects of the INMAS program since 1985. However, most of the available information focusses on cropping rather than farmer organizations and turnover. Virtually none of the information has been analyzed except for some collected under the Irrigation Systems Management Project and, since 1992, on about 10 additional schemes.
- Virtually no data on farmer organizations, joint management committees, and turnover exists for the MANIS schemes. Resources available for MANIS program were meager and none was spent on monitoring and evaluation.
- The Mahaweli Authority of Sri Lanka has an agency, the Planning and Monitoring Unit (PMU), devoted to monitoring progress of the Mahaweli schemes. However, reflecting the low priority given to farmer organizations and turnover until recently, no effort was

spent on monitoring their progress. The PMU is now in the process of setting up monitoring systems.

The present study has been formulated to provide data on the progress and impact of the participatory management programs, to help the government evaluate that data and to develop ways to monitor and evaluate the programs in the future.

1.4 Organization of this Report

The remainder of the Inception Report describes how IIMI and its collaborators will carry out the study:

- Section 2 describes the objectives and organization of the study.
- Section 3 discusses the strategy for collection of data for evaluation of the progress and impact of the participatory management.
- Section 4 discusses the strategy for developing improved M&E of the programs.
- Section 5 explains how the study results will be reported to and evaluated jointly with the involved government officers and describes the expected followup.

Annex A succinctly describes features of irrigation management in major systems prior to participatory management. Annex B gives short descriptions of the INMAS, MANIS, and Mahaweli programs. Annex C describes in detail the variables to be used to guide data collection and analysis. Annex D identifies the schemes selected for recurrent surveys and process documentation. Annex E gives the schedule for the major study activities and reports (work plan). Annex F describes the staff assigned to the study. Annex G gives the expenditure plan. Annex H describes how gender considerations are incorporated into the study. Annex I is the Cabinet paper defining the participatory management policy.

Section 2

OBJECTIVES AND ORGANIZATION OF THE STUDY

2.1 The Technical Assistance Agreement

This study is being implemented through a tripartite agreement among the Government of Sri Lanka, the Asian Development Bank (ADB), and the International Irrigation Management Institute (IIMI). Funding is provided by the ADB under Technical Assistance no. 1705 SRI.

The agreement provides that:

- IIMI is the executing agency of the study.
- The Ministry of Lands, Irrigation, and Mahaweli Development (MLIMD) is the responsible agency within the Government of Sri Lanka. The Mahaweli Economic Agency (MEA), the Irrigation Department (ID), and the Irrigation Management Division (IMD) will collaborate in carrying out the study by providing counterpart staff to participate in interviews, meetings and workshops and by providing data, facilities and other items.
- The Agrarian Research and Training Institute (ARTI) will collaborate to strengthen its capacity to conduct similar studies in the future.

IIMI is to discuss the results with farmers and agency personnel at the scheme level and, through workshops and the Coordination Committee, with involved government officers at higher levels. IIMI also is to report the results to the government and the ADB in written form.

2.2 Objectives of the Study

As stated in the TA 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."

This objective focusses on "turnover." This term, as used in Sri Lanka, implies turnover of management functions to farmer organizations and joint farmer-officer management committees (see below and Annex B), created by the INMAS, MANIS, and Mahaweli programs.

In order to plan more effectively, the following more detailed objectives have been defined for this activity:

Evaluation of Progress and Impact of Participatory Management

1. Determination of the progress of each program toward creating effective farmer organizations, effective joint management committees, and turnover of management functions to the farmer organizations and joint management committees.
2. Determination of the impact of each program on the efficiency and effectiveness of system management, on total agricultural production, on farmer income from irrigated agriculture, and on government expenditures for system operations and maintenance.
3. Formulation of recommendations for improvement for each program that will lead to more effective participatory management.
4. Evaluation of the likelihood that participatory management will achieve its goals; if achievement is unlikely, formulation of alternative approaches to resource mobilization for irrigation system management.

Improving Monitoring and Evaluation of Participatory Management

5. Identification of appropriate indicators for monitoring the progress and impacts of farmer organizations, joint management committees and turnover.
6. Formulation of cost effective recommendations for improvements to the existing M&E systems for the three programs to incorporate monitoring of participatory management.

Reporting and Review of the Results of the Study

7. Presentation and review of the results of the study with various concerned persons from farmers to the highest level decision makers.
8. Publication of the results of the study for distribution in Sri Lanka and outside.

The following sections describe how IIMI will reach these objectives.

2.3 Institutional Arrangements

IIMI and ARTI have agreed to collaborate on the study. Field data collection will be divided between the two institutes and data analysis will be done jointly. IIMI retains overall

responsibility under the terms of the TA Grant Agreement. The division of responsibilities between the two institutes is defined in Annex E.

Each program is managed by a separate agency: INMAS is managed by the Irrigation Management Division with help from the Irrigation Department, MANIS by the Irrigation Department, and the Mahaweli programs by the Mahaweli Economic Agency with assistance from the Planning and Monitoring Unit (PMU) of the Mahaweli Authority of Sri Lanka. To ensure liaison and cooperation, a Study Working Group has been established that includes persons at the Deputy Director level from each of these agencies responsible for farmer organization, turnover, and M&E. This group meets with the IIMI/ARTI researchers regularly.

The TA agreement says that the researchers will report to a Coordination Committee constituted following the 1990 Workshop on Resource Mobilization. This committee has never existed. However, following a recommendation from the Irrigation Management Policy Support Activity (IMPSA), a Central Coordinating Committee for Irrigation Management chaired by the Secretary, MLIMD, has been established. This committee has established a subcommittee chaired by the State Secretary for Irrigation to act as the Coordination Committee for the technical assistance. The Coordination Committee will meet at least every six months to consider the Progress Reports issued by the IIMI/ARTI team.

2.4 Relation of the Study to Other IIMI Programs

Participatory management and turnover are strategies now being pursued by several developing countries in attempts to solve two problems (Vermillion 1991):

- Improving the productivity of irrigation systems in response to increased demands for crop production caused by rising populations,
- Reducing subsidies for irrigated agriculture from increasingly limited government revenues.

These strategies are consonant with the new emphasis being placed upon private responsibility and initiative in all economic activities (cf Wageningen 1990).

IIMI is studying and assisting participatory management and turnover efforts in Sri Lanka, India, Nepal, Bangladesh, Indonesia, Sudan, Philippines, Mexico, and Colombia through other activities. IIMI has a global project on Privatization and Self Management of Irrigation Systems. Several variables identified in Section 3 have been derived from this international experience. The M&E study in Sri Lanka will contribute to global information on turnover processes in two ways:

- 1) First, the IIMI/ARTI team will prepare a report on the relevance of findings in Sri Lanka to other developing countries.
- 2) Second, IIMI will prepare a detailed case study on turnover in Sri Lanka for inclusion in a series of publications to be prepared for the global project mentioned above.

The M&E Study is also learning from and contributing to IIMI's Program on Irrigation Performance Assessment and Improvement. Staff from that program have contributed suggestions concerning variables and indicators and are expected to contribute more significantly in the later effort to develop and test cost-effective indicators for important variables. This effort will also contribute to the Performance Program by giving a place to test ideas the Program is developing (IIMI 1992, Bos et al 1993).

Finally, the M&E Study is cooperating with IIMI's program on gender issues in irrigation management (Zwarteveen, 1992). This matter is discussed in Annex H.

Section 3

EVALUATION OF PROGRESS AND IMPACT OF PARTICIPATORY MANAGEMENT

3.1 Preliminary Activities

To gather information for design of the data collection efforts, the IIMI/ARTI team undertook two preliminary activities: a literature survey and a reconnaissance of schemes in the three programs.

1. Literature Survey and Review of History

Much information at the progress and impact of participatory irrigation management in major schemes in Sri Lanka is available in project reports, such as those from the Irrigation Systems Management Project (see Sheladia 1992 for a summary), and other forms. One that is of direct relevance is ARTI's evaluation of the INMAS program (ARTI 1991). The IMD's Monitoring, Evaluation, and Feedback System initiated in the schemes under the Irrigation Systems Management Project in 1990 and recently spread to other INMAS schemes can provide other useful information. This literature will be surveyed and used as appropriate.

A review of the history of participatory management in Sri Lanka is being prepared from the literature supplemented by a few interviews with important persons involved. This will place participatory management in its historical context to provide a better basis for determining trends. A goal is to determine the factors driving the process and predict how those factors will help or deter the process in the future. The background paper covers:

- a. Farmer participation in irrigation management until 1979.
- b. The key models: Minipe, Gal Oya, and Kimbulwana Oya.
- c. The programs developed from those models: INMAS and MANIS.
- d. The influence of the modernization and rehabilitation projects: MIRP, ISMP, and others.
- e. Various efforts in Mahaweli systems.
- f. Other efforts in both major and minor irrigation systems.
- g. Policy level decisions to promote the participatory approach, including the December 1988 cabinet paper, and IMPSA.

Most of this work has been completed; the report will be available within two months.

2. Field Reconnaissance

The IIMI/ARTI team undertook the reconnaissance for two purposes: 1) to provide information on the range of variation among schemes, and 2) to provide information on the key issues.

The reconnaissance covered 59 irrigation schemes, including 24 INMAS schemes (about 67% of INMAS schemes), 32 MANIS schemes (about 20% of MANIS schemes), and 3 Mahaweli schemes (50% of Mahaweli schemes). The reconnaissance covered all major regions not off limits for security reasons, but the schemes were not selected systematically with the regions. Schemes were selected because they were recommended by irrigation professionals as being of interest or, in a few cases, because they were convenient to visit.

The reconnaissance collected data on the following items:

- The progress of the farmer organizations and joint management committees in each scheme,
- The progress of turnover in each scheme,
- Basic information on each scheme, including condition, etc.
- Basic information on monitoring systems used in each scheme.

Data from the reconnaissance was used to draw samples for the data collection efforts. It has also been helpful in identifying relevant variables. A separate report analyzing the data from the reconnaissance is under preparation and will be distributed in draft very soon. The results will be discussed in a workshop.

These preliminary efforts have served as the basis for the detailed planning described below.

3.2 Variables

The INMAS, MANIS, and Mahaweli programs have three key elements: 1) creation of farmer organizations, 2) creation of joint management committees, and 3) turnover of management functions to the farmer organizations through formal agreements. The study will focus on the progress and impact of each of these elements.

Progress and Impact of the Farmer Organizations: Progress and impact of the farmer organization programs will be measured by

- * Determining whether the expected farmer organizations have been created.
- * Determining how effectively the farmer organizations carry out their functions.
- * Determining whether the farmer organizations can sustain their existence; ie, can they manage their organizations and can they raise the necessary funds?
- * Determining impacts; impacts to be looked for include, among others:
 - more equitable, timely, and adequate water distribution,
 - more effective maintenance,
 - fewer damages to the system by cattle, farmers, and other controllable causes,
 - fewer water disputes and quicker resolution of those disputes that occur,
 - increased crop production,
 - increased farmer income from irrigated agriculture.

Progress and Impact of Joint Management Committees: Progress and impact of the joint management committees will be measured by

- * Determining how often the JMCs meet.
- * Determining attendance and participation by Farmer Representatives and officers at JMC meetings.
- * Determine the number and kinds of farmer problems brought to and resolved by the JMCs.
- * Determining the JMCs' seasonal planning performance.
- * Determining the JMCs' involvement in setting maintenance priorities.
- * Determining impacts; impacts to be looked for include:
 - more equitable and efficient water distribution as reflected in the seasonal plans,
 - better water distribution brought about by better communication between farmers and the irrigation agency,
 - supply of agricultural inputs, including seeds, fertilizers, chemicals, and credit adjusted to local demand and available when needed,
 - increased crop production,
 - increased farmer income from irrigated agriculture.

Progress and Impact of Turnover of Management Functions: Progress and impact of turnover will be measured by

- * Determining the numbers of channels officially "turned over" according to a procedure such as the one defined for the ISMP within the INMAS program.
- * Determining what functions are being carried out by the agencies and what functions by the farmer organizations. Informal assumption of operation and maintenance responsibilities may have already occurred in some places; that is, farmer organizations may be handling the functions without formal recognition. The converse is also possible, that farmer organizations have formally taken responsibility but are not actually carrying out the responsibility and the agency is still doing it.
- * Determining the resources required from farmers after turnover and comparing those with farmers' ability to pay.
- * Determining the possible changes in government expenditures resulting from turnover.
- * Determining impacts; impacts to be looked for include, among others:
 - more equitable, timely, and adequate water distribution,
 - more effective maintenance,
 - fewer damages to the system by cattle, farmers, and other controllable causes,
 - fewer water disputes and quicker resolution of those disputes that occur,
 - increased crop production,
 - increased farmer income from irrigated agriculture,
 - reduced government expenditure on O&M.

A key question is the sustainability of turnover. Can the farmers pay the full costs of distributary and field channel operations and maintenance under current market conditions? This question must be looked into specifically. The condition of the scheme at the time of turnover may have a significant effect on the answer. Also, since the operations and maintenance needs of schemes vary, the answer for one scheme may not be the same as the answer for another scheme.

Finally, turnover of management responsibilities and powers from an agency to farmer organizations implies changes in the agency. In addition to reducing its staff, the agency may have to change its functions. An important new function is likely to be technical assistance to farmer organizations. There is a real need to consider the agencies as well as the farmer organizations in evaluating the turnover components of the programs.

For purposes of data collection, these items have been broken into 28 major variables:

Variables Describing the Physical Environment

1. Size of the Scheme
2. Design and Physical Condition of the Scheme
3. Scheme Water Availability
4. Size of FO Area

Variables Describing Farmer Organization Performance

5. FO Water Distribution Performance
6. FO Maintenance Performance
7. FO Communication Performance
8. FO Non-O&M Activities Performance
9. FO Organizational Management Performance
10. FO Financial Management Performance

Variables that Affect Farmer Organization Performance

11. Land Tenure
12. Caste and Other Social Divisions
13. Political and Other Intervention in FO Internal Affairs
14. Training and Experience of Farmers and Farmer Representatives
15. O&M Responsibilities Turned Over
16. Legal Status of FOs

Variables Describing Joint Management Committee Performance

17. JMC Planning Performance
18. JMC Coordination and Problem Solving Performance

Variables Describing Agency Performance

19. Agency Water Distribution Performance
20. Agency Communication Performance
21. Agency Performance in Support for FOs

Variables that Affect the Ability of Agencies to Support Farmer Organizations

22. Policy Guidance to Agencies
23. IOs or Other Catalyst Agents

24. Training for Officers
25. Resources Provided to Agencies to Support FOs

Variables Describing Impacts

26. Crop Production
27. Farm Income
28. Agency O&M Costs

Annex C defines each variable and indicates the subvariables, if any, and the types of data to be collected. Figures 3, 4 and 5 show the hypothesized relationships among these variables.

3.3 Data Collection Methods

The basic irrigation management unit is the scheme; the scheme therefore is also a basic unit for analysis. The second basic unit is the farmer organization because the participatory management policy is based on the performance of FOs. Progress and impacts have both scheme level and FO level dimensions. Therefore, for each of the three programs, sampling will be done at two levels: a) schemes, and b) farmer organizations within schemes. Because the participatory management policy envisions distributary channel organizations (DCOs) as the basic farmer organization, DCOs or their equivalents will be considered the farmer organization units.

Data on the 28 variables will be collected from sample schemes and FOs through three methods: a) recurrent surveys, b) process documentation, and c) a large-scale survey.

1. Recurrent Surveys

The TA Agreement specifies that data is to be collected through recurrent surveys of about 30 irrigation schemes. Each scheme is to be visited three times per season over three seasons. At the end of each season, the observations are to be discussed with system managers and farmers.

The basic idea is that revisiting the sites allows observations of changes between visits thus giving data on processes not available through a single survey. Moreover, the number of sites should allow observation of some of the variation among schemes. Data collection at each site will be done using rapid assessment techniques (Chambers & Carruthers 1986, Uphoff 1992), including group interviews, field observations, and others.

The three visits per season will be scheduled to allow observation of the critical activities, including seasonal planning, water distribution during land preparation, water distribution

during crop growth, and harvesting. During the last visit each season, the team will discuss observations with system managers and farmers.

The recurrent surveys will be carried out by teams of two researchers each. Each site will require 6 days per season (3 visits @ two days each). Within 60 days per season, not counting travel time, each team can cover about 10 schemes each season. The IIMI/ARTI team can provide 3 teams. Therefore, approximately 30 FOs can be selected for recurrent surveys. To provide three teams of researchers, this work will be shared by IIMI and ARTI researchers.

Note that 30 FOs, rather than 30 schemes, is the sample. This change allows selection of more than one FO within the larger schemes. This will provide better information on the larger schemes since it will be possible to observe variation within the schemes in some detail. Data on a larger sample of schemes will be provided through the large-scale survey. Distribution of sample FOs in schemes for the three programs is shown in Table 3 below.

Table 3: Distribution of Field Sites for Recurrent Surveys

Program	# of Schemes	FOs per Scheme	Total FOs
INMAS	6	2	12
MANIS	10	1	10
Mahaweli	2	4	8
Total	18		30

Sample selection for the recurrent surveys must ensure that as much as possible is learned about ongoing processes as well as provide information on environmental variation that is expected to play a key role in determining progress and impact of participatory management. Therefore, sample selection has taken the following basic criteria into account:

- There must be farmer organization or turnover activity going on. A scheme where nothing has been achieved and no efforts are underway will not provide useful information.
- It is expected that a major determinant of progress in farmer organization and turnover is the effort devoted to creating and strengthening farmer organizations. Therefore, the sample should include schemes that have or have had support from special projects (MIRP, ISMP, NIRP, etc) and others that have not had such support.

- It is probable that the availability of water and the severity and nature of water problems within the scheme affect progress of farmer organization and turnover. It is felt therefore that the samples should include both water deficient schemes and water abundant schemes.

Annex D shows the schemes selected with the help of the agencies and the Working Group. Within each scheme, the FOs will be selected with the help of the scheme managers.

2. Process Documentation

Although the recurrent surveys will provide information on the farmer organization, turnover, and other processes, many of the key events cannot be witnessed by periodic visits. Moreover, much of the detailed information needed for complete understanding of the processes requires extensive time at the site. Therefore, the recurrent surveys will be supplemented by process documentation studies at a few selected sites.

Process documentation studies are long term studies based primarily on participant observation by a resident data collector. Process documentation records in detail the happenings at the sites to discover the assumptions, motivations, and social and economic conditions underlying the observed happenings. This data is critical to understanding the ongoing processes.

Process documentation for this study will be carried out over three seasons at six selected sites (FOs). The sites will include two for each program. To increase spread, each will be in a different scheme and data will be gathered at both DCO and scheme level.

Basic criteria for selection of schemes are the same as the criteria for selection of recurrent survey sites. Annex D shows the schemes selected with the help of the agencies and the Working Group. Within each scheme, an FO will be selected as the focus with the help of the scheme managers.

3. Large-Scale Survey

One of the key results sought is a valid picture of progress and impact in the three programs. As shown in Table 1, the three programs cover some 200 irrigation schemes and over 2000 FOs. With this size of universe, it is necessary to collect data on at least 100 FOs in order to have a statistically significant sample. Therefore, a large-scale survey is needed to provide a statistically valid picture of the progress and impact of participatory management in the three programs.

The large-scale survey will be a one-time questionnaire survey. For each FO, farmers and FO officers will be interviewed. In addition, relevant agency officers at FO and scheme level

will be interviewed. Data collection at any one site will require only one or two days to complete.

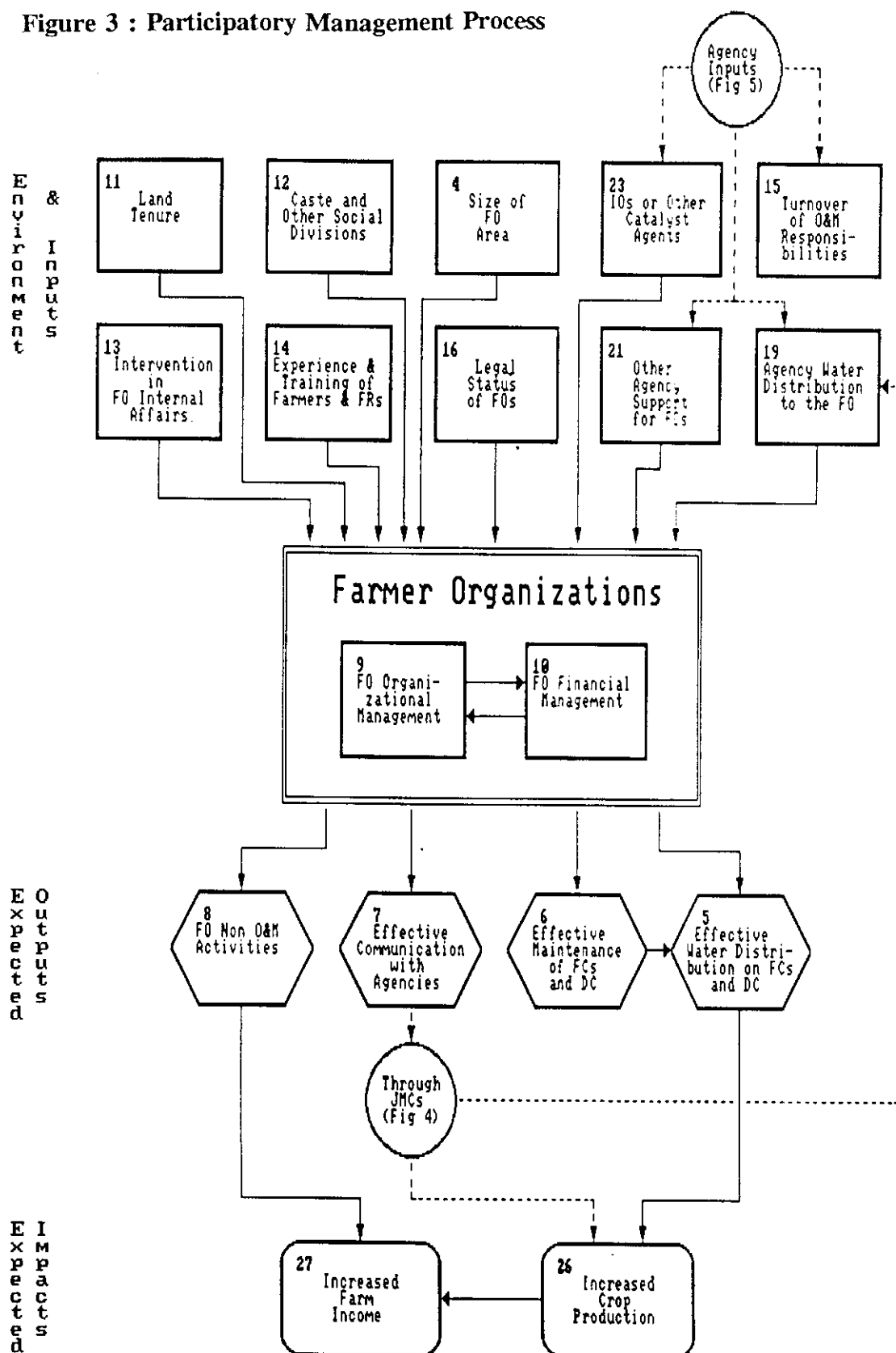
The sample size should be chosen so that the expected error should be small. The IIMI statistician is currently working with the data collected during the reconnaissance to figure out the needed sample size and the best method to select a representative sample. It is expected that the sample size will be about 150 FOs in 50 schemes. Schemes and FOs within schemes will be chosen randomly for each program to ensure statistical validity.

Work on the large-scale survey will begin in September or October. Because of their extensive experience in surveys, ARTI will be responsible for the field data collection although IIMI and ARTI together will prepare the questionnaires and select the samples.

In addition, to project the savings to the government of complete adoption of participatory management, the IIMI/ARTI team must estimate the portion of current agency O&M budgets spent on distributary and field channel O&M. The budgets and expenditures of sample agency offices associated with the process documentation sites will be analyzed to determine these expenditures. This effort will be undertaken as a special study by a person competent in the needed aspects of financial analysis.

A related concern is the whether farmers can raise the funds needed for O&M of distributary and field channels. A separate analysis using data gathered during the three main data collection efforts together with agricultural price data and other data will be made to answer this question.

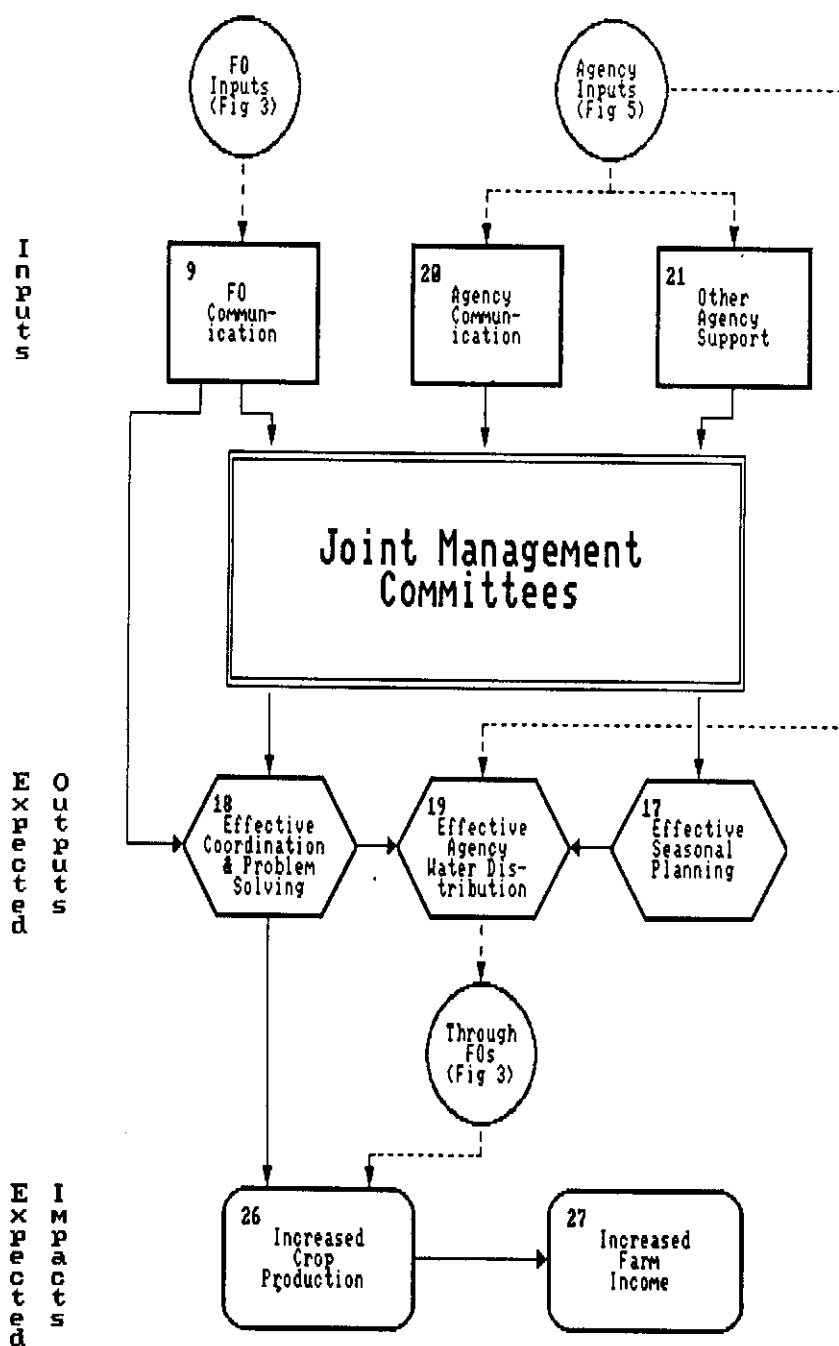
Figure 3 : Participatory Management Process



1. Numbers within boxes refer to variables from the list of major variables.

2. For clarification of the dotted lines see Figures 4 and 5.

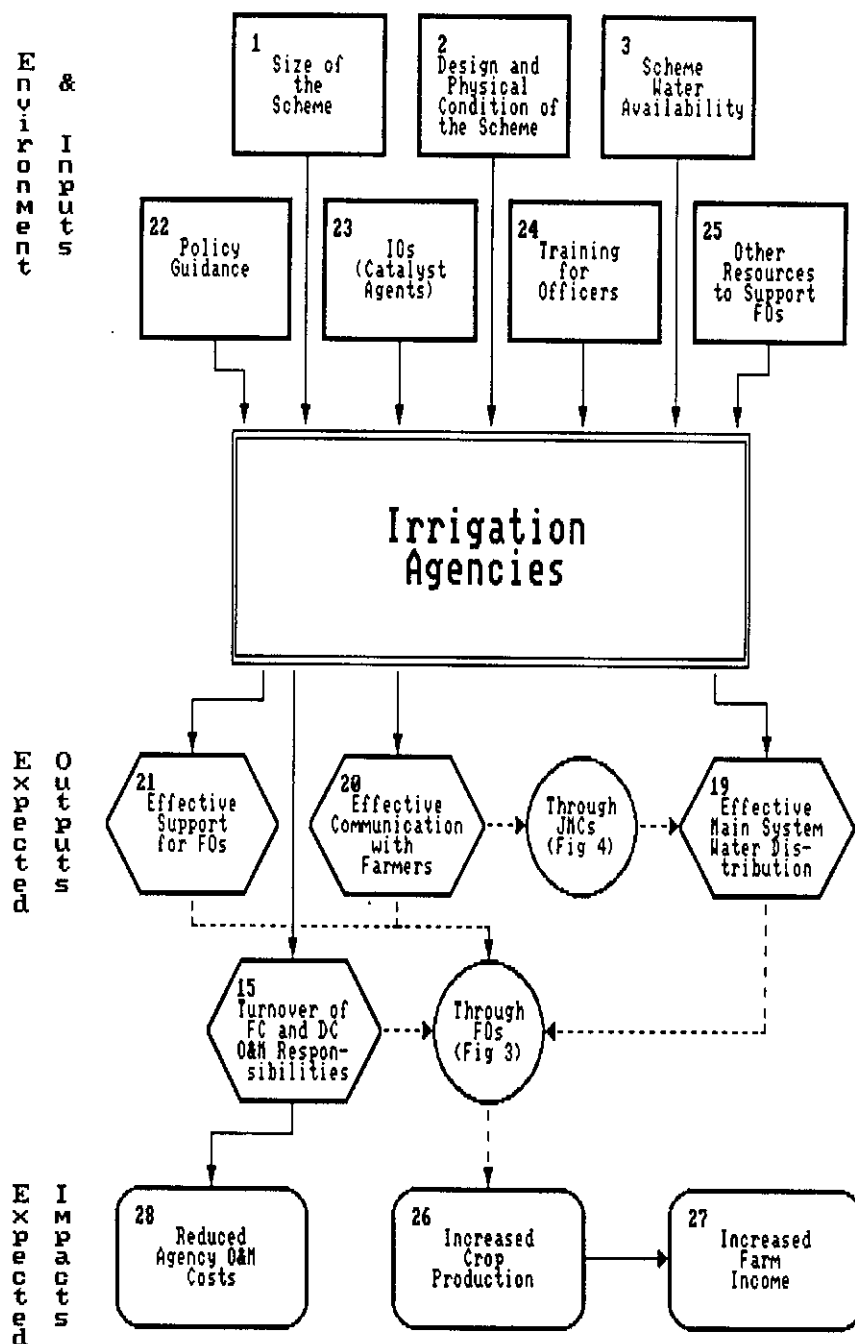
Figure 4 : Participatory Management Process : Joint Management Committee Variables



1. Numbers with boxes refer to variables from the list of major variables.

2. For clarification of the dotted lines see Figures 3 and 5.

Figure 5 : Participatory Management Process : Agency Variables



1. Numbers with boxes refer to variables from the list of major variables.

2. For clarification of the dotted lines see Figures 3 and 4.

Section 4

IMPROVING MONITORING AND EVALUATION OF PARTICIPATORY MANAGEMENT

4.1 Approach

To assist the government in improving monitoring and evaluation of participatory management, the IIMI/ARTI team will a) determine the information about the progress and impact of participatory management needed by decision makers at various levels, b) determine the information presently provided, and c) suggest ways to fill the gaps. No attempt will be made to develop complete new monitoring and evaluation (M&E) systems. Instead, improvements to the existing M&E systems will be suggested.

Review of existing M&E systems and determination of data needs under each of the three programs are the first steps. The Field Reconnaissance undertaken during the first season has identified the existing M&E systems in different irrigation schemes. The current situation is:

- The INMAS program has long had a reporting system that was to provide information on progress of farmer organizations, crops, and other matters. As has been shown, the original system was deficient (LBII 1989) in many ways and the reports were generally not used. Under the Irrigation Systems Management Project (ISMP) a new system, called the Monitoring, Evaluation, and Feedback (MEF) System, was created. Only since October last year has this system been extended to INMAS schemes other than the seven under the ISMP. At present it is operating in 19 INMAS schemes.
- The MANIS program has no system for reporting the progress of farmer organizations, joint management committees, or turnover. Only for those schemes recently brought under the National Irrigation Rehabilitation Project (NIRP) is any record kept.
- Monitoring under the Mahaweli program is carried out by a variety of agencies, including both the Mahaweli Economic Agency (MEA) and the Planning and Monitoring Unit (PMU). Until recently, regular reports on the status and progress of farmer organizations were not made to the PMU nor to MEA headquarters. Some track was kept by MEA officers within particular schemes beginning in 1990. Since the inauguration in October 1992 of the new farmer organization program by MEA, the PMU has been charged with monitoring farmer organizations. It is just beginning this effort.

It will be necessary to supplement this information with studies into the existing M&E systems and data needs.

Data needed for assessment of the progress and impact of participatory management is a subset of data needed for management of irrigated agriculture. The most cost efficient way of monitoring the progress and impact of participatory management may be to incorporate appropriate indicators into the existing management information systems for individual irrigation schemes and for the irrigated agriculture sector. The implications of the findings of this study for more general management information systems will be considered as appropriate.

A key need is for indicators. Appropriate indicators can strengthen management information systems. Indicators are essential if monitoring is done irregularly through rapid assessment surveys by institutions such as ARTI. We plan to make use of the experience with the recurrent surveys, coupled with data on information needs by decision makers, to develop such indicators.

4.2 Study of Data Needs and Existing M&E Systems

The study will focus on the following:

- Review of the specific data and the quality of data supplied to decision makers at various levels by the current M&E systems used by the three programs.
- Uses of the data supplied by the current M&E systems.
- Communication of information from the M&E systems among the various interested parties.
- Assessment of data needs by different groups of decision makers including farmer organization leaders, scheme managers, agency managers at division, provincial, and central levels, and policy makers.

The existing M&E systems will be reviewed through the following means:

- Collection of sample forms and reports from specific farmer organizations and schemes.
- Interviews with persons involved with filling out the forms and preparing the reports to determine the sources, accuracy, and reliability of the data.
- Using interviews and documents to trace the flow of information from original sources to various recipients, including describing the processing that takes place along the way.

- Using interviews and observations to determine actions taken in response to information supplied.

Often, managers depend upon information provided through informal information systems, such as complaints from farmers. Identification and evaluation of the importance of these sources of information will be done.

This detailed study will be carried out on six irrigation schemes - two from each program - and by following the flow of information from the schemes to higher levels. For convenience, these will be the same as the ones selected for process documentation. This information will be supplemented by specific questions included in the data collection instruments used for the recurrent surveys and by data gathered from the process documentation study.

Insights into information needs by different managers and decision makers will emerge from discussions of the current uses of data and of the deficiencies of the existing systems. These insights will be supplemented by a program of formal interviews of selected decision makers from farmer organization level up to the highest policy level. The interviews will ask the decision makers about the information they need concerning participatory management to perform their duties. A key concern is to separate data needs for persons at the various levels, including:

- individual farmers,
- field channel group representative,
- distributary channel organization officers,
- scheme level managers of various agencies,
- system level farmer organization officers,
- provincial, district, and divisional level officers as appropriate,
- central government officers and policy makers.

The detailed study of six irrigation schemes and interviews with managers will be carried out during Yala 1993 by members of the IIMI/ARTI team.

4.3 Development of Effective Indicators

In the future, when assessing progress and impacts of participatory management, indicators for assessing the status of various key items, such as "strength of the FO" and "water distribution performance," against appropriate standards will be needed. Development of these indicators is a primary goal of the study.

Effective indicators

- provide the information necessary to make decisions,
- are based on data that can be gathered rapidly and easily,
- are easy to calculate or work up from the data,
- are reliable.

Data provided by the process documentation, recurrent surveys, and large-scale survey will be used to determine key relationships among variables. This will allow the elimination of unnecessary factors and determination of the most important ones. This information, together with information on data needs, will allow determination of the key variables to be measured for monitoring and evaluation. Measures for the key variables and sub-variables will be tested to see which are the most reliable and cost-effective. Comparative analysis of the results of various types of data collection will allow selection of the best compromises between a) rapidity and cheapness of data collection, and b) validity and reliability of indicators.

Impacts are a key concern, particularly impacts on system performance (water distribution and other aspects), crop production, farmer welfare, and O&M finances. Many factors besides the progress and effectiveness of participatory management affect these impacts. Particular attention will be paid to ways to link participatory management to its impacts on these items and to exclude impacts due to other factors.

4.4 Design and Testing of Improved M&E Systems

Based on the studies carried out during Yala 1993 and the work on indicators, the IIMI/ARTI team will identify the opportunities for improvement of the existing M&E systems. The analysis will be used to develop proposals for modifications to the existing systems to improve their functioning.

The proposals will attempt to satisfy the following conditions:

- The M&E system should supply information identified by decision makers as needed for their functions.
- The M&E system should provide accurate information.
- The M&E system should transmit timely data to the users.

- The M&E system should not be costly.

The IIMI/ARTI proposals will define the activities required, the personnel responsible for implementing the systems and time schedules. The proposals will be discussed with the Working Group members, scheme managers, and policy-makers for incorporation of their ideas and suggestions.

In developing these proposals, the indicators and systems used elsewhere will be considered. For example, systems for FO self-assessment have been developed in both Sri Lanka (Uphoff 1988) and the Philippines (Lauraya et al 1991). The Aga Khan Rural Support Program has developed a method of computing an "Institutional Maturity Index" (Tetlay & Mahmood 1992) for use in Northern Pakistan. Similar efforts will be consulted (cf Bruns 1992). Differences in interests among stakeholders must be taken into account in these efforts (cf Svendsen & Small 1990).

For cost effective systems, it is essential that the farmer organizations be involved in providing much of the data. Involvement of farmer organizations requires that they benefit. Determination of ways for the farmer organizations to benefit will be a key feature of the analysis.

During August or September 1993, following finalization of the proposals, the proposals will be discussed with agency personnel at the system and higher levels. With the agreement of the agency personnel, one irrigation scheme will be selected for each program - INMAS, MANIS and Mahaweli - for pilot testing of the proposals during Maha 1993-94.

On each system, the improved M&E system will be discussed with the key agency officials and representative farmer before implementation during Maha 1993-94. If required, pilot testing will be conducted through Yala 1994 as well.

The actual implementation of the activities will be carried out by the farmers and responsible agency officers. IIMI/ARTI team members will be available to help as needed. The IIMI/ARTI team will monitor the improved M&E systems over the season and will collect information to evaluate their performance and suggest improvements.

Section 5

REPORTING, REVIEW, AND FOLLOWUP

5.1 Reporting and Review of the Findings

The results of the study will be reported to the relevant agencies and farmers through written documents and periodical workshops and discussions.

First, the IIMI/ARTI team will hold discussions with farmers and system managers on the systems selected for process documentation and recurrent surveys at the end of each season. At these discussions, the team will present its observations and ask for reactions from the farmers and system managers. These meetings will serve as both a way to check the findings observations and as a way to provide feedback to scheme managers.

Second, the IIMI/ARTI team will prepare progress reports as follows:

1. First Progress Report: This report will appear in July 1993 and will describe activities from September 1992 through March 1993. The report will incorporate findings from the Field Reconnaissance and a summary of the history study and summarize research plans for the following season.
2. Second Progress Report: This report will appear in October 1993 and will describe activities during Yala 1993 (April-August 1993). The report will incorporate a) findings from the recurrent surveys during Yala, b) findings from the process documentation, c) data collection plans for Maha 1993-94, d) findings from the studies into existing M&E systems, and e) proposals for improved M&E systems to be pilot tested in Maha 1993-94.
3. Third Progress Report: This report will appear in May 1994 and will describe activities during Maha 1993-94 (September 1993 - March 1994). The report will incorporate a) findings from the large-scale survey, b) findings from the recurrent surveys during Maha, b) findings from the process documentation, c) a report on the pilot tests of improved M&E systems, and d) a description of data collection plans for Yala 1994.
4. Final Report: This report will appear in August 1994 and will include a) findings from data collection during Yala 1994, b) a summary and discussion of the general findings on progress and impact of participatory management, c) recommendations for improvements to the three programs, d) a summary and discussion of the pilot testing of improved M&E systems, e) identification of indicators for monitoring the progress of participatory

management and f) recommendations for future monitoring and evaluation of the participatory management programs.

The IIMI/ARTI team will first discuss the draft reports with Working Group members. The drafts will then be circulated to key agency officials and policy makers. The IIMI/ARTI team will organize a workshop at which the findings and their implications will be discussed and changes made to plans for the subsequent season if required. Following the workshop, the final version will be prepared, incorporating comments from the workshop. This final version will then be presented to the Coordination Committee for their consideration and discussion.

Third, besides the progress reports, three thematic reports will be prepared:

5. Report on the History of Participatory Management in Sri Lanka: The data for this report will provide the historical context for interpretation of the detailed studies. This report will be prepared by June 1993.
6. Description of Indicators and Tested Improvements to M&E Systems: To make use of the improved M&E systems and indicators to be developed under this project, it will be necessary to have a convenient description. Therefore, the IIMI/ARTI team plans to prepare this description as a separate report. This report will be prepared by August 1994.
7. Report on the Lessons Learned from Participatory Management in Sri Lanka: As required by the Grant Agreement, IIMI will prepare a discussion of the relevance of the findings from this study for circulation to other developing countries. This report will be prepared by September 1994.

Drafts of these reports will be presented to the Working Group and circulated to relevant persons for comments. Also, IIMI and ARTI expect to publish these reports jointly as formal research papers.

5.2 Expected Followup

It is expected that the results of this study will be used in the following ways:

1. The scheme managers and farmers on the schemes selected for process documentation and recurrent surveys will use the information gathered to improve the performance of those schemes.
2. Some or all of the suggested improvements to M&E systems will be incorporated into those systems.

3. The managers of the National Irrigation Rehabilitation Project, the Northwestern Province Water Resources Development Project, and other improvement projects will make use of the reports to improve the procedures of those projects since those projects incorporate various aspects of participatory management.
4. The top level managers of the INMAS, MANIS, and the Mahaweli Institutional Development programs in the Irrigation Department, Irrigation Management Division, and Mahaweli Economic Agency will make use of the findings to improve their programs.
5. Through the circulation of reports and through the Coordination Committee, the findings will be presented to top policy makers. One route will be presentation of the most important ideas and findings to the full Central Coordinating Committee for Irrigation Management, of which the TA Coordination Committee is a subcommittee. The top policy-makers, both those in the Ministry of Lands, Irrigation and Mahaweli Development and others, will have access to data that will allow them to evaluate the participatory management policy as exemplified by the three programs. It is expected that this data will allow the government to modify the policy and programs as necessary to achieve the expected results. In particular, various types of support for the three programs may be needed to make them work most effectively. If it is concluded that the expected results will not be achieved, this data will allow identification and consideration of alternative approaches.
5. Finally, the work on indicators and M&E systems will make it possible to review participatory management in the future as needed. Two approaches are possible:
 - a) periodic assessments by an outside agency, probably ARTI since they will have experience, and
 - b) better information gathered as part of regular management information systems.

There are no plans to make separate reports to Provincial, District, or Pradeshiya Sabha officials concerned with irrigation management, largely because the INMAS, MANIS, and Mahaweli programs are Central Government programs implemented from Colombo. Relevant officers from these government agencies will be included in the workshops to discuss results.

In addition, through both a special report on the significance of the findings of this study for other developing countries and through contributions to IIMI's global programs on Performance Assessment, Privatization and Turnover, and Gender Issues in Irrigation Management, it is expected that the findings will contribute to the success of similar efforts elsewhere in the world.

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Annex A

CHARACTERISTICS OF PRE-PARTICIPATORY IRRIGATION SYSTEM MANAGEMENT

This annex describes the basic characteristics of the management of Sri Lankan irrigation schemes before adoption of participatory management. Topics covered below include seasonal planning, operations planning, operations, maintenance, and resource mobilization. Currently, most schemes show a mixture of traits; that is, few schemes have switched entirely from the systems described here to participatory management but most have adopted some of the characteristics of participatory management.

1. Categories of Schemes and the Responsible Government Agencies

Sri Lanka irrigation schemes were classified into two broad classes: major schemes with command areas greater than 80 hectares, and minor schemes whose command areas are less than 80 hectares. Management of minor schemes is left to the farmers who use the schemes, with assistance from the Agrarian Services Department. The concept of participatory management applies to major schemes, hence there will be no further discussion of minor schemes.

Major schemes are sometimes divided into two classes: major schemes whose command areas are larger than 800 hectares and medium schemes with command areas between 80 and 800 hectares. Both types of schemes are considered the responsibility of the Irrigation Department (ID).

Since before independence, Sri Lanka has been developing new irrigation and settlement schemes. Starting at independence the integrated development agency approach modeled on the Tennessee Valley Authority has been used for the larger schemes. The first such agency was the Gal Oya Development Board; it was followed by the River Valleys Development Board and then the Mahaweli Development Board. The latter was converted to the Mahaweli Authority of Sri Lanka (MASL). While under development, these agencies have been responsible not only for development of the irrigation schemes but also for operation and maintenance of the schemes. The Mahaweli Economic Agency (MEA) is the specific organization within the MASL that manages Mahaweli schemes.

2. Seasonal Planning

Seasonal planning includes deciding upon the crops to be grown in different areas of the scheme and the allocation of available water to those areas. In addition, the seasonal decisions define

when irrigation will start, how long irrigation for land preparation will continue and how long irrigation for the crops will continue.

The Irrigation Ordinance specifies that, for major schemes, seasonal plans are to be made by the farmers prior to the season at a "kanna" (seasonal) meeting. This meeting is to be called and chaired by the Government Agent of the District or by his delegate. The idea is to get farmer participation in making the decisions.

In fact, as has been shown by Murray-Rust and Moore (1983), these kanna meetings did not serve these purposes effectively. On larger schemes kanna meetings cannot deal with all of the farmers; hence several kanna meetings were held for each larger scheme. For example, each season eight kanna meetings were held for the Gal Oya Left Bank Scheme in Ampara and Batticaloa Districts. Even in smaller schemes the tendency was for the ID officers and Agriculture Department officers to meet, often at the District Agricultural Committee, and make the decisions. The kanna meetings then served as the primary means of informing the farmers of the decisions reached since the officers were generally able to make their plans stick at these meetings.

Because the Irrigation Ordinance applies to all major systems, kanna meetings are held for Mahaweli schemes as well as for Irrigation Department schemes. However, they are called and chaired by MEA personnel rather than by the Government Agent.

Although amendments to the Irrigation Ordinance have been proposed, it is still in force and kanna meetings are generally held even when the seasonal plans are now made at Project Management Committees as defined by the participatory management systems.

3. Operations Planning

Operations planning refers to defining how water is to be delivered (rotation, continuous flow, etc) and how much is to be delivered. Prior to participatory management, these decisions were made solely by ID or MEA engineers. In fact, kanna meetings often discussed these matters but farmers had no recourse if the engineers decided that they needed to make changes in schedules or amounts.

4. Operations

Both the ID and the MEA claimed to deliver water to the farmer's outlet. In ID's case, gate operations on main, branch, and distributary canals down to the gate at the head of each field channel were carried out by Irrigators (jalapalakas) under the supervision of Work Supervisors and Technical Assistants. In MEA's case, gate operations were carried out by Irrigators under