

**Role of Social Organizers in Assisting
Farmer-Managed Irrigation Systems**

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*Proceedings of a Regional Workshop
of the Farmer-Managed Irrigation Systems Network*

**Organized by the
International Irrigation Management Institute (IIMI)
and the
Thailand Research on Irrigation Management Network (TRIMNET)
and held at Khon Kaen, Thailand
from 15 to 20 May 1989**

**Shaul Manor, Sanguan Patamatamkul and
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Cover photograph by John L. Colmey: A social scientist discussing irrigation management problems with farmers in northern Bihar, India.

Contents

Foreword	vii
Preface	ix
Acknowledgements	xi
Overview of the Workshop P. Pradhan and R. Sharples	1
Mobilization of the Rural Poor for Access to Agricultural Resources other than Land: Irrigation Enterprise by the Rural Poor M. Karim -- Bangladesh.	11
Irrigation Water Management in Gylegphug Lift Irrigation Scheme R.B. Subba -- Bhutan	19
Role of the Institutional Organizer in Assisting Farmers to Participate in the Rehabilitation of Tank Systems R. Sakthivadivel and S.N. Kallapiran -- India	25
Using Irrigation Agency Staff as Institutional Organizers: The Small Systems Turnover Program in Indonesia Helmi and D. Vermillion -- Indonesia	33
Community Organizers and Farmer Participation: A Case Study of Traditional Irrigation Systems in South Sumatra, Indonesia S. Lubis -- Indonesia	41

Role of Social Organizers in Pumped Irrigation Systems in Subang, West Java, Indonesia M. Sihombing -- Indonesia	49
Community-Based Irrigation Management in Laos W.R. Ireson -- Laos	53
Role of Social Organizers in Assisting Farmer-Managed Irrigation Systems: The Case of the Agricultural Bank of Nepal D.B. Bajracharya -- Nepal	61
Role of Social Organizers in Improving Irrigation Management: The Experience in Nepal U. Gautam -- Nepal	67
Role of Social Organizers: The Aga Khan Rural Support Programme for Irrigation Infrastructure Development, Gilgit B.A. Khan and S. Karez -- Pakistan	77
Role of Social Organizers in Communal Irrigation Development in the Philippines C.M. Cablayan -- Philippines	81
Role of the Irrigation Community Organizers: The Siwaragan Experience R.B. Fernandez -- Philippines	91
Prospects of Using Social Mobilizers in the Management of Minor Irrigation Systems in Sri Lanka M.H.S. Dayaratne -- Sri Lanka	99
Adjusting the Process for Participatory Management Through a Team Approach: A Case Study in North Central Sri Lanka J. Medagama -- Sri Lanka	107
Role of Social Organizers in the Development of Small Irrigation Systems in Northeast Thailand by the Royal Irrigation Department R. Boonmathaya and R.A. Sharples -- Thailand	115
Opening Active Communication between Agency and Peoples' Irrigation Associations through the Farmer as Social Organizer in Jointly Managed Irrigation Systems U. Tan-Kim-Yong -- Thailand	125
Summary Results of Small Group Discussions	133
List of Participants	141

Foreword

THE 1986 KATHMANDU Workshop on "Public Intervention in Farmer-Managed Irrigation Systems (FMIS)" can be considered a breakthrough in understanding and recognizing the importance of FMIS to irrigation management. Most FMIS research projects have demonstrated the importance of farmer participation in all steps of irrigation management -- from design to implementation to system turnover. Indeed, farmer participation has been identified as one of the "key features" to better managing a dwindling resource.

The creation and use of "Social Organizers" have shown to be an effective tool in facilitating the formation and development of farmer groups. Social organizers are especially effective in developing the farmer groups' internal organizational structure. Social organizers also serve as intermediaries between farmers and the various government agencies concerned with any particular irrigation system, improving the relationships and communications between the two entities in the process.

The use of social organizers in FMIS assistance programs has shown great promise in the Philippines where it has been documented in the Communal Irrigation Project. Partially on the basis of this experience, social organizers have been incorporated into the development strategies in several South and Southeast Asian countries but most of these innovations remain in the formative stages. Social organizers are not uniformly effective in every country; some may lack proper qualifications, or their training may not have equipped them to deal with the often complex situations they encounter.

Often the information necessary for system improvements is not effectively communicated to the farmers and process improvements are not always adopted or made an integral part of internal structures by the implementing agencies. If a "Social Organizer Strategy" is to be widely adopted the processes have to be better understood and procedures for its promotion must be developed. We must understand what has made it successful in one place and why it has not realized its potential in others. We must also answer the questions: "how to sustain the participatory management where it has been achieved?; how do we motivate social organizers and train them to deal with difficult and unfamiliar situations?; how do we keep the costs of social-organizer programs at an acceptable level?"

The regional workshop at Khon Kaen was one of a series being promoted under the FMIS Network, for which IIMI fulfills a coordinating role. This meeting brought together practitioners and researchers from South and Southeast Asia to discuss their experiences, emphasizing the

problems they encountered and their suggested solutions. We hope to learn more, through such workshops, to give insights and answers to decision makers and policymakers. IIMI and the Advisory Committee of the Network hope to broaden participation by bringing information on the recorded case studies to a large audience of practitioners and researchers, and to benefit from the contribution of the experiences of others, who we hope will be stimulated to contribute further to FMIS studies.

This workshop was organized jointly by IIMI and the Thailand Research on Irrigation Management Network (TRIMNET). This is in line with IIMI's policy of cooperation and collaboration with national agencies to promote improved irrigation management.

IIMI appreciates the effort made by all those who took part in planning and organizing this event. In particular, our gratitude is expressed to Dr. Sanguan Patamatamkul of TRIMNET and Dr. Shaul Manor and Mr. M.H.S. Dayaratne of IIMI for planning and organizing the workshop. Also, we would like to thank Dr. David Groenfeldt, the former coordinator of the Network, who was involved in the early stages of planning the workshop. Funding for the workshop was provided by the International Fund for Agricultural Development (IFAD), the Federal German Ministry for Economic Cooperation (BMZ), and the Ford Foundation.

Charles L. Abernethy
Director of Programs
International Irrigation Management Institute

Preface

THE SUCCESSFUL AND often impressive experiences in Farmer-Managed Irrigation Systems (FMIS) in many countries in Asia, have prompted the development of a number of programs in various countries, with the purpose of accelerating this process. Implementing these types of systems is generally accomplished through the fielding of "Social Organizers." Some programs are promoted by government agencies, while others are run by nongovernment organizations (NGOs). The programs are generally designed around village-based social organizers, although often the title and duties follow varying concepts. This has resulted in the need to exchange information and review the various program results thus far implemented or designed, to draw preliminary conclusions that could be of use to concerned governments and NGOs.

As far as practical, the conclusions could be used to design new programs or experiments, or to redesign ongoing projects. It was with this in mind that the idea for a workshop concentrating on various FMIS aspects was proposed. A small, regional workshop at which participants could freely mix and discuss experiences and ideas was believed to be the most appropriate forum.

The objectives of the workshop set out at the time of planning were to review some of the experiences in the participating countries and to develop policy guidelines which could assist in formulating country-specific strategies. The major objectives defined were:

- * To assess the benefits and costs of the social-organizer strategy, based on case studies.
- * To review the implementation process of the social-organizer approach (e.g., selection of social organizers, training and bureaucratic reorientation).
- * To consider alternative approaches to promoting farmers' management participation.
- * To publish the proceedings in order to foster discussion and stimulate new policies for FMIS assistance.

Not all of these subjects were addressed in the papers and in the discussions at the workshop. Notable by its absence was any discussion of costs and benefits, although other issues were well-presented and discussed and have important implications for future policies.

Ten countries from South and Southeast Asia were invited to send participants. As the delegate

from India was unable to attend, only nine were represented; Bangladesh, Bhutan, Indonesia, Laos, Nepal, Pakistan, the Philippines, Sri Lanka and Thailand. Twenty-nine people participated in the workshop, including those from IIMI and TRIMNET and resource professionals and observers. Fifteen papers were presented with one addition later submitted by the representative of India. Abridged versions of all 16 papers are contained in the proceedings with the papers appearing in alphabetical order by country.

The workshop was divided into three phases. The first dealt with the presentation of the 15 papers, which dealt with experiences of social organizers in various countries and the results of field research. The second phase consisted of field trips to two systems in the vicinity, with the goal of stimulating discussion on relevant issues. The first scheme visited was developed by the Royal Irrigation Department (RID) and successfully turned over to farmer management after intense extension activity; the second scheme visited was implemented by using a community organizer to facilitate farmer participation and to assist in the creation of a water users' group. The third phase consisted of discussions which were held in small groups on subjects raised or derived from the papers presented and from issues identified in the course of the field trips. The subjects of the discussions were:

- * Farmer participation in managing irrigation systems.
- * Supporting policies for farmer-participation programs.
- * Alternative approaches to generating farmer participation.
- * Social-organizer program implementation.
- * Flexibility and sustainability.
- * Institutionalizing the social organizer into the system.

Summaries of the discussions held in these groups appear in the proceedings.

Shaul Manor

and

M.H.S. Dayaratne

International Irrigation Management Institute.

Sanguan Patamatamkul

Thailand Research on Irrigation Management Network.

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- * Mr. Uthai Nakpreecha, Governor of the Province of Khon Kaen for attending the opening and welcoming the participants.
- * Mr. Chamroon Chindasanguan, Chairman of the TRIMNET Working Committee of the Royal Irrigation Department, for his opening speech at the workshop.
- * Mr. Sakulwat Chantarobon, Director Operation and Maintenance Division of the Royal Irrigation Department; Mr. Prasat Chantaraniyom, Director of Small-Scale Construction Division of the Royal Irrigation Department, Mr. Chat Sarikabhuti, Director of the Royal Irrigation Department Division 5; Mr. Akhom Issarangkul Na Ayuthaya, Director of the Royal Irrigation Department Division 6; all of whom attended workshop sessions and contributed to the discussions.
- * Mr. Somporn Sriwong, Mr. Adisorn Phiangket and Mr. Suwit Khunkitti, Members of Parliament, for showing the importance which they attach to this subject by attending the official opening ceremony and some of the sessions.
- * Mr. Suporn Chanphuang, Udorn Thani's Provincial Irrigation Chief, for receiving the participants with traditional north-eastern music and dance at the official reception.
- * The District Officers of Chumpae and Phuwiang and the farmers of Wang Yao and Dindam villages, for a warm welcome on our field trips to visit their irrigation schemes.
- * All Farmer-Participation in Small-Scale Irrigation Projects staff for all hard work in preparation and organization of the workshop.

Overview of the Workshop

P. Pradhan[§] and R. Sharples ^{§§}

SOME OF THE papers described experiences in the improvement of irrigation management through the roles played by social organizers whereas others related the experiences of poverty reduction by employing “catalysts” or “change agents.” Some papers described lessons worth learning while others sought solutions to their problems. Most of the papers dealt with the development of the capacity of farmers to improve their management capabilities. Suggestions were also made concerning the functional organization necessary to manage an irrigation system.

A summary table of the characteristics of the social-organizer programs in the different countries, as described at this workshop, is given at the end of this overview.

THE “SOCIAL ORGANIZER”

The countries represented in this workshop have different sociopolitical and management systems. Hence the names given to the “social organizers” are also different. They are known variously as “social organizer,” “community organizer,” “institution organizer,” “farmer irrigators organizer,” “association organizer,” “group organizer,” and “farmer social organizer.” The differences in names illustrate the attempt to adapt the social organizer’s role to the sociocultural and political context of the different countries. In view of the variety of experiences as indicated by the names given to the social organizers, several key questions emerge:

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- * What are the conditions which influence the potential usefulness of social-organizer programs?
- * Which interventions are culture specific, environment specific, or related to a particular political context?
- * How can flexibility in implementing programs using a social-learning approach be enabled and fostered?
- * How can the policy and bureaucratic conditions of implementation be made more conducive to success?

SOCIAL ORGANIZERS IN DIFFERENT INSTITUTIONAL SETTINGS

The social organizers are lodged in different institutional settings under different sociopolitical contexts. Some are attached to the governmental machinery or within the agency, as in Indonesia (Irrigation Inspectors), Sri Lanka (Agricultural Planning Team), the Philippines (Irrigation Community Organization), and the Agricultural Development Bank of Nepal (Group Organizer). There are experiences of employment of social organizers by nongovernment organizations as well, as in Indonesia, Bangladesh, and Pakistan (Aga Khan Rural Support Programme). Farmers have also been employed as "social organizers" in north Thailand (farmer social organizer) and in the Philippines (farmer irrigator organizer). The variety of experiences reported from the countries which participated in the workshop, indicates that a blueprint approach to designing social-organizer programs is not likely to work. To achieve effective performance in social-organizer programs, the social-learning approach is necessary because irrigation systems differ from one another, from country to country, and even within a country.

TYPES OF SOCIAL ORGANIZERS

Two types of social organizers were identified in the course of discussions in the workshop. One type is the single purpose social organizer who deals exclusively with irrigation-related activities. The second type of social organizer is the multipurpose organizer such as the "group organizer" in Nepal. The effectiveness of the type of social organizer fielded would depend on the institutional and social environment. Hence, the choice of the type of social organizer should be evaluated within the relevant environmental contexts in which they work.

RESPONSIBILITIES OF SOCIAL ORGANIZERS

Several papers pointed out that it was the responsibility of the social organizer to 1) improve the capacity development of the farmers, 2) improve irrigation management through the promotion of farmers' active participation, and 3) smooth the relationship and communication between farmers and irrigation agencies. It was agreed that these are the major responsibilities of social organizers, but emphasis on each of the above differs from country to country.

QUALIFICATIONS OF SOCIAL ORGANIZERS

An issue raised in a number of papers is that of the qualifications required to serve as a social organizer. Different qualifications were required in different programs. Qualifications seem to be specific to the project activity, program objectives, and to the availability of manpower. Questions were also raised whether the social organizer should be drawn from the community he is to serve or whether one from outside the community would be more effective. The minimum conditions set by many of the papers were for social organizers to be proficient in the local dialect and to be sensitive to the local culture.

STATUS OF THE SOCIAL ORGANIZER

Should the social organizer be a member of the permanent staff of the organization, or should he or she be hired temporarily for the specific task, or are volunteers to be preferred? The papers did not indicate a single model to follow, but made clear the need to consider the various alternatives.

TRAINING SOCIAL ORGANIZERS

Upgrading the skills of the social organizers is recognized as necessary to increase their effectiveness. Four types of training programs were identified: 1) regular fixed training, 2) ongoing training in accordance with changing tasks and challenges (Indonesia and Nepal), 3) horizontal training programs, and 4) vertical training programs. The choice of the specific mode

of training depends on the objectives of the social-organizer program. However, it was recognized that a standard type of training program would be inadequate to cope with the dynamic social and political context of irrigation systems.

EFFECTIVENESS OF SOCIAL ORGANIZERS

The following were suggested as measures of effectiveness of social organizers: 1) the water users' association as an organization, 2) increased agricultural production, and 3) increased resource mobilization for operation and maintenance of the systems in which the social organizers work.

Several issues were raised regarding the relationship between the effectiveness of the social organizer and the legal status of the water users' association. While the institution of water users' associations is in the process of being legally recognized in many countries, this is not the case everywhere. How can social organizers strengthen the capacity of organized farmers in the absence of legal recognition of water users' associations? Is it a precondition for water users' associations to have legal status before starting a social-organizer program? The papers presented at the workshop suggested that the effectiveness of social organizers was related to the legal status of the water users' association.

FARMER TRAINING TO DEVELOP THEIR CAPACITY

It was recognized that there is a need for specific programs to strengthen farmers' capacity to manage the irrigation systems. It was also suggested that nontraditional ways of providing such training to farmers should be tried. Participation in information collection, socialization of ideas, information sharing, and farmer-to-farmer training were activities identified as means of strengthening farmer-managerial capacity.

FARMER PARTICIPATION

One of the fundamental questions raised was the relation of social-organizer program objectives to the social, political, and bureaucratic conditions of the country. Implicit in this question is the rationale or the objectives behind the decision to adopt a participatory approach in irrigation development and management. Farmer participation may be viewed as a means to increasing

food production, to fostering long-term local self-reliance, or to reducing government intervention and investment in project construction, maintenance, management, or a combination of them.

The alternative chosen for implementing the social-organizer program may be a reflection of the bargaining power of the target farmer group relative to the rest of society or to the government. An issue of interest in this context is that of local participation in, and control of, construction funds. Another, is the strength of the existing irrigation institution and how the use of social organizers in a participatory approach can avoid farmer dependence on government intervention.

These underlying objectives have implications for how local groups are organized, whether broad-based, multipurpose, or exclusively for system management. It was also observed that water users' organizations even while concerned only with irrigation, are often in fact multipurpose.

LEGAL RECOGNITION OF EXISTING INDIGENOUS ORGANIZATIONS

Existing indigenous groups and organizations should be legally and formally recognized. Most programs work with indigenous organizations or informal groups and eventually establish formal groups, some of which obtain legal status and some do not. These organizations should evolve gradually and preferably informally, prior to establishment and should experience a learning process in developing capabilities. The social organizer can facilitate and perhaps accelerate this process to some degree.

IMPLEMENTING AGENCIES

What motivates an agency to initiate or to become involved in a social-organizer program? What political framework -- for example, the terms of the financial responsibilities, water rights, or the legal basis for water users' associations -- is conducive to or essential for enabling the supportive bureaucratic environment for this type of program? To what extent is top-level support necessary for irrigation bureaucracies to become socially sensitive and genuinely supportive of farmers' organizing efforts as happened in the Philippines?

Having a nongovernment organization employ the social organizer separately or supervise the social organizer within the technical agency, may be a more appropriate strategy to promote responsiveness to farmers and increased attention to social issues, than using only technically oriented staff. The social organizer may be part of a larger strategy aimed at bureaucratic reorientation and sensitization to local needs and perspectives. On the other hand, using existing agency staff as social organizers may also be a strategy of bureaucratic reorientation and long-term institutionalization of the social capabilities within the technical agencies.

IMPLEMENTING SOCIAL-ORGANIZER PROGRAMS

A social organizer should not be viewed narrowly as a position but more broadly as a set of tasks or roles. Many roles are filled by social organizers: catalyst, facilitator, mobilizer, mediator, motivator, link, enabler, adviser, trainer, and change agent are just a few which were mentioned. The roles common to most social-organizer programs are facilitator and catalyst of local interaction, i.e., promotion of communication or problem-solving within communities, and opening of access or serving as a link to engineers and outside resources. The tasks referred to most frequently are project identification, information collection, mobilization of farmers' ideas in design, and the motivation of farmers to carry out activities in construction and in the establishment of water users' associations. The social organizer seems to play a key role in catalyzing a process in which communication lines are kept open between all parties.

SOCIOTECHNICAL BRIDGING

One of the themes dealt with is the approaches taken to bridge the social and technical aspects. Is the social organizer a technical person trained in the specifics of group dynamics and social-science skills, or a social-science graduate trained to understand basic technical issues pertinent to the role? Though there are examples of effective coordination of the social and technical aspects of irrigation development, this subject requires careful consideration to strengthen the bridge between social and technical fields. At the administrative or the institutional level, the issue of linking the social and technical aspects can take many shapes depending on the implementor bias and complexity of the organizational relationship.

Many social-organizer programs have to deal with issues of decentralization and bureaucratic reorientation as part of the process of engendering greater acceptance of farmer participation. Each in its own way is exploring what can be done to influence the institutional environment in which social organizers work and in which irrigation systems are designed and built. Through dialogue and advocacy, working groups and seminars, most programs seek to open communication at a number of levels within the bureaucracy. Questions of top-down, bottom-up, and interactive processes are answered differently in different contexts depending upon the implementors, the leverage of each party, and the ultimate program objectives.

SUMMARY OF SOCIAL-ORGANIZER PROGRAM CHARACTERISTICS (I)

Country	Main implementors	Status of implementors	Other agencies	Main type of irrigation	Social-organizer terms	Focus of organizing	Social-organizer status	Major social-organizer roles
The Philippines	National Irrigation Administration* (1970s)	Government organization; regular	Ateneo de Manila University	Communal systems <1000 ha;	Irrigation community organizer; irrigator organizer worker	System development and management; indigenous organizer	Full-time; existing government organization staff	Catalyst Facilitator Consultant
Indonesia	Directorate of Irrigation (1987)	Government organization and nongovernment organization; regular	Institute for Social, Economic Research, Education, and Information and IIMI	Turnover of existing small systems; <150 ha	Institutional organizer	System repair and management; indigenous organizer	Full-time; existing government organization staff	Information collector Mediator Adviser
	Directorate of Irrigation (1986)	Government organization and nongovernment organization; pilot	Institute for Social, Economic Research, Education, and Information	Communal repair or improvement	Community organizer	System development; indigenous organizer	Full-time; new hire; nongovernment organization project	Stimulator Enabler Facilitator
	Bina Swadaya (1984)	Nongovernment government organization; pilot	Local Government Public Works Service	Pumping	Social organizer	System development and management; self-reliance groups	Full-time; new hire; government organization staff	Motivator Link Enabler

* Also testing the use of farmers as social organizers in three National Irrigation Systems.

SUMMARY OF SOCIAL-ORGANIZER PROGRAM CHARACTERISTICS (II)

Country	Main implementors	Status of implementors	Other agencies	Main type of irrigation	Social-organizer terms	Focus of organizing	Social-organizer status	Major social-organizer roles
Sri Lanka	Department of Agrarian Services (1988)	Government organization; pilot and regular	University and research institutes	Modernization; rehabilitation of tanks	Agricultural Planning Team	System development and management; indigenous groups	Part-time; existing government organization staff	Interdisciplinary Adviser Link Facilitator
	District Integrated Rural Development Programs**	Government organization based on pilot project	Department of Agrarian Services; Irrigation Department	Rehabilitation; improvement of tanks	Social mobilizer	Broad-based; indigenous groups	Full-time; local hire	Mobilizer Catalyst
India***	Public Works Department; Agricultural Engineering Department (1988)	Government organization and non-government organization; pilot project	Anna University Association for Sarva Seva Farms; nongovernment organization	Rehabilitation modernization of tanks	Institution organizer; technical assistant	System development and management; indigenous organizer	Full-time; pilot project hire	Facilitator Mobilizer Mediator

** Proposed, not yet implemented.

*** Although the participant could not attend the workshop, information from the paper is included here.

SUMMARY OF SOCIAL-ORGANIZER PROGRAM CHARACTERISTICS (III)

Country	Main implementors	Status of implementors	Other agencies	Main type of irrigation	Social-organizer term	Focus of organizing	Social-organizer	Major social-organizer roles
Thailand	Royal Irrigation Department; People's Irrigation Assistant (1985)	Government organization and private People's Irrigation Associations; pilot project	Chiang Mai University; basin development	Small systems linkage in farmer-social organizer	Farmer-social organizer; existing Peoples' Irrigation Associations	Joint-irrigation management; indigenous organizations; Peoples' Irrigation Association	Part-time; local; semivolunteer	Link Mobilizer Enabler
	Royal Irrigation Department (1985)	Government organization; pilot becoming regular	Khon Kaen University	New small weirs and reservoirs	Community organizer	System development and management; indigenous groups	Full-time; new, temporary; government organization staff	Enabler Mobilizer Facilitator
Bangladesh	Proshika (1976)	Nongovernment organization; regular	International funding	Pumping of deep or shallow tube wells	Field organizer	Broad-based; landless and marginal peasants	Full-time; existing nongovernment organization staff	Empowerment Facilitator Mobilizer
Pakistan	Aga Khan Rural Support (1983)	Non-government organization; regular	International funding	Delivery channels	Social organizer	Broad-based; village organizer	Full-time; existing nongovernment organization staff	Motivator Facilitator Liaison

SUMMARY OF SOCIAL-ORGANIZER PROGRAM CHARACTERISTICS (IV)

Country	Main implementors	Status of implementors	Other agencies	Main type of irrigation	Social-organizer term	Focus of organizing	Social-organizer status	Major social-organizer roles
Nepal	Agricultural Development Bank of Nepal	Semi-government; regular	CARE/Nepal; Department of Irrigation	Minor irrigation, gravity, tube wells	Group organizer	System development; farmer groups	Full-time; semigovernment	Project identifier Motivator Monitor
	System Management Division (1987)	Nongovernment organization; government organization; pilot	Department of Irrigation	Medium-scale irrigation	Association organizer	Irrigation management; water users' groups	Full-time; new, temporary nongovernment organization hire	Mediator Mobilizer Facilitator

Notes: Lao PDR and Bhutan are as yet without formal programs.

Mobilization of the Rural Poor for Access to Agricultural Resources other than Land: Irrigation Enterprise by the Rural Poor

M. Karim[§]

INTRODUCTION

BANGLADESH, ONE OF the poorest countries in the world, covers an area of 143,998 square kilometers. The estimated current population of the country is 106.6 million and it is expanding at a rate of 2.18 percent per year (Bureau of Statistics 1989). About 85 percent of the total population live in rural areas and 80 percent are engaged in agriculture. Since the country's economy is predominantly agrarian, land is the principal productive asset.

Distribution of land, however, is very uneven. The top 10 percent of rural households own 52 percent of the total agricultural land while the bottom 60 percent -- who may be regarded as functionally landless -- own only 9 percent (UNICEF 1987). This glaring inequality in land distribution is one of the causes of the mass poverty prevailing in the country. There is little likelihood that land reform to redistribute it more equitably will be carried out in the near future. Under these circumstances, any development initiative for and by the rural poor, if it is to be meaningful and effective, must be directed towards creating access to those agricultural resources that are not monopolized by the more privileged.

Based on this concept, Proshika Manobik Unnayan Kendra (Proshika - A Centre for Human Development), a Bangladesh nongovernment development organization, has facilitated a program for the sale of water by organized groups of landless and marginal peasants, to farmers both rich and poor. The program was launched in 1980, and so far, results have been encouraging.

This paper attempts to present a synthesis of the experiences of both Proshika and of the groups involved in irrigation. It also outlines the process from its beginning to the present, including the role of the Proshika field organizers in mobilizing the groups.

[§]Deputy Director (Programme) Proshika Manobik Unnayan Kendra, Dhaka, Bangladesh.

PROSHIKA AND ITS ACTIVITIES

Proshika is a Bengali acronym composed of the first few letters of each of the three words: *Proshiksan* (Training), *Shiksa* (Development Education) and *Kai* (Action). Since its inception in 1976, Proshika's aim has been to start a sustainable development process among the rural poor by making them conscious of their situation and by extending them support to organize themselves so that they may become self-reliant and make united efforts to improve their socioeconomic condition. Proshika supports both men and women who are landless laborers or marginal peasants, the two largest groups in the rural population, as well as groups of rural tradesmen such as fishermen, weavers, and potters.

Training plays a crucial role in the Proshika process since it is mainly through this activity that people's level of awareness, confidence, capacity, and skills are developed. Two categories of training are organized: human development and practical skills. Human development training courses include social analysis, development concepts and approaches, analysis of development constraints, techniques of organization building, communication, development management, leadership, and participatory planning. Training courses on practical skills provide the skills necessary for making efficient use of resources and for effective implementation of economic projects.

Proshika extends credit and technical assistance to the groups to assist them to undertake income- and employment-generating projects in various fields such as agriculture, irrigation, pond fishery and open-water fishing, sericulture, beekeeping, cattle and poultry raising, home-stead gardening, social forestry, handicrafts, and cottage industry. Other programs that Proshika has initiated include popular theater, participatory research, development support, communication through video medium, health and nutrition education, literacy, and women's programs.

By 1988, Proshika had formed 16,440 groups of which 7,508 are women's groups. It currently employs a staff of 553 of whom 438 are based at the grassroots level. Operating in 36 project locations, which it calls Area Development Centers, Proshika's work now extends to 2,856 villages, 373 unions, and 65 *upazilas* (administrative sub-divisions) in 22 districts.

WATER-SELLING ENTERPRISES OF THE RURAL POOR

Context

Although primarily an agrarian economy, with agriculture contributing nearly 50 percent of its gross domestic product and accounting for about 59 percent of the employed labor force (UNICEF 1987), Bangladesh is not self-sufficient in food and imports an average of two million tons of foodgrains per year.

The second Five-Year Plan (1980-1985) promoted rapid expansion of the mechanized minor irrigation technologies, i.e., Shallow Tube Wells, Low Lift Pumps, and Deep Tube Wells as a strategy for increasing food production. Attributing the slow rate of irrigation development in the preceding years to a policy of high subsidization, a privatization policy was adopted for selling Low Lift Pumps to individual farmers or groups.

Some observers have expressed concern that in an agrarian situation characterized by concentration of landownership, landlessness, tenancy, and unemployment, such a technological thrust could end in concentrating water assets in the hands of landlords, if unaccompanied by policies and measures promoting equity. Through monopolizing access, landlords might also emerge as waterlords. The result would then be more exploitation, more landlessness, more unemployment, and consequently, more poverty.

It has been argued that effective demand for food by the rural poor is necessary to stimulate agricultural production. Therefore, establishing property rights other than land in the hands of the rural poor is essential for agricultural development in Bangladesh.

This was the context in which Proshika developed the program for water selling by the rural poor. The government's reaction to the program was positive. The Ministry of Local Government and Rural Development initiated the development of an experimental program for the provision of irrigation services by the landless. The Ministry of Agriculture encouraged nongovernment organizations such as Proshika, the Bangladesh Rural Advancement Committee and the Grameen (Rural) Bank to develop programs to facilitate access of the rural poor to water resources.

Objectives

Several interrelated assumptions underlie the program and explain its objectives. First, providing organized groups of the rural poor with assistance in terms of credit, training, and technical know-how to acquire and run mechanized minor irrigation equipment will enable them to establish an irrigation service which they themselves can manage and control. Second, selling water to farmers means gaining control of means of production which are second only to land in importance. Third, by bringing more land under cultivation in the dry season this service will contribute to the creation of employment opportunities for the rural poor. Fourth, by obtaining a share of the benefits of the increased productivity of the land they will enhance their incomes. And finally, this new role of the rural poor in production will elevate to some extent their status in society.

Implementation Process

The process through which a group establishes an irrigation service involves several steps. It begins with the group identifying a potential command area and then negotiating with the landowners and sharecropping farmers who cultivate land in that area. Before proceeding, the group must establish its right to provide water in that area. If this is positive, then a formal

agreement is drawn up using signatures and thumbprints. The agreement specifies the duration of the scheme (usually five years), siting of the equipment, rates of water delivery, form and rates of payment (mostly 25-30 percent crop share) and the division of responsibility between the farmers and the group for the construction and maintenance of the main channels or drains and the feeder water courses to the plots.

Arranging credit for the purchase of equipment and to cover operating costs is the second step. During the first few years, the Grameen Bank, Bangladesh, in accordance with its agreement with Proshika provided the required credit. Since 1985, however, Proshika has extended credit from its own Revolving Loan Fund. This has resolved problems in obtaining the loans on time, since delays in the past had badly affected the performance of some groups.

Groups participating in the program are selected by mutual consent of the groups themselves and the field organizers. As soon as a group is selected to participate it appoints a chairman, a scheme manager, a pump driver, and a lineman from among its members. A committee composed of a few of its members is formed to perform certain duties on behalf of the group, such as obtaining the loan, signing the loan documents, and purchase of the equipment. The driver and lineman are sent to the Proshika Training Centre to receive training in the skills required for performing their tasks.

After obtaining the loan the group purchases the equipment and auxiliaries and installs them at the agreed site with the help of local technicians. Following installation of the equipment the group constructs the main canals. Each command area is divided almost equally among three main canals and water is delivered sequentially from the tail to the head end.

Role of the Field Organizers

In the Proshika process, the role of the field organizers is of vital importance as it is they who set the organizational and the mobilization work in motion. The field organizer is based at the grassroots Area Development Centers, comes from the same locality, knows the area and the people very well, and has opted for working with the rural poor.

Groups are organized by Proshika without any intention to involve them in any particular activity such as irrigation, or other program. The purpose is rather to help the rural poor to develop an institutional base from which to mobilize themselves for socioeconomic actions pertinent to self-reliant development. It is easier to organize a group with the purpose of making immediate gain than to organize one conceived as a long-term enterprise from the very beginning. The field organizer, therefore, has a very difficult and painstaking task to accomplish. It takes several months to motivate and animate prospective members to organize themselves into a group.

After a group is formed, the field organizer must continue to maintain frequent contact with it to promote a collective spirit and leadership, to develop participatory decision making, to have regular meetings, and to cultivate mutual cooperation and solidarity among the members. The field organizer accomplishes these tasks through discussions and informal training sessions. Following this, groups are gradually exposed to the human-development training courses at the Area Development Center training facilities to acquire further analytical skills.

The quality of an organization is very much a determining factor in its success or failure in any endeavor. The field organizer plays a crucial role in this respect. It may take more than a year

before the group expresses the need to make a move. Sometimes the field organizer facilitates this by sharing some idea with them or by exposing them to the experience of other groups in the surrounding area. The mobilization could be for a social or for an economic action. The social action may be a struggle to realize the minimum wage fixed by the government, or the sharecroppers' two-thirds share of crops, or the actual quantity of wheat allotted to the laborers in the food-for-works program, or it may be a protest against any sort of violence done to them. The economic actions include any effort for employment and income generation. Some actions are both social and economic in nature, as for example, the irrigation service. Whatever the nature of the action, the field organizer will be involved.

To undertake an irrigation project, a feasibility study is required. This is done by the group, the field organizer, and the extension worker (irrigation engineer) as a team. After identifying a potential command area the group has to negotiate with the farmers. The field organizer's involvement in the negotiations as a mediator is essential to ensure the interests of the group.

The field organizer next assists the group to prepare a project proposal to be submitted to Proshika to request the required credit. He arranges for training the driver and the lineman who have been appointed by the group. The field organizer and the technical worker help the group in selecting and purchasing equipment, in proper siting of it, and in boring of the well (for Shallow Tube Wells). The field organizer also assists in setting up proper record keeping so that Proshika may monitor the performance of the group. He makes frequent visits to the project site to see if any problems are hampering the smooth implementation of the project. If conflicts arise between the group and the farmers the field organizer intervenes to help resolve the problems.

The above description, however, in which the field organizer has to provide all the assistance applies only to new irrigation groups. In groups which have gained several years' experience in running their projects the field organizer's role is limited to monitoring performance. In many areas, broader organizations embracing many groups, have already emerged. These larger groupings are capable of dealing with the problems that individual groups face in bargaining with powerful elites.

Expansion and Performance

In 1982, Dr. Geoffrey D. Wood of the University of Bath, with the assistance of Proshika's Research and Documentation Cell, conducted a study on the financial performance of 83 projects, 51 Shallow Tube Wells, and 33 Low Lift Pumps that were in operation during the 1981/82 season in 11 Proshika Area Development Centers. The study showed that 78 percent of Low Lift Pumps groups and 75 percent of the Shallow Tube Well groups were successful. Though the result was inspiring, Proshika decided not to move too fast. Their program was expanded only modestly.

At present, the program covers 26 Area Development Centers and 308 groups with an equal number of projects involved in selling water for irrigation. Technologies that have been deployed include 201 Shallow Tube Wells, 82 Low Lift Pumps, and 25 Deep Tube Wells. By operating these, the groups are providing irrigation to approximately 2,950 hectares (ha) (7,295 acres) of land. Performance, however, declined from 1982 to 1984. In 1982/83 this was due to a sharp rise in operating costs as the price of diesel and oil increased by 50 percent, and in 1983/84 due to an

early flood which severely damaged the boro crop, causing most of the projects to incur losses. The situation began to improve again in 1985/86 due to a rise in income while costs remained stable, and yield as well as prices of rice increased. The current season (1988/89) has not yet ended. However, in the last season (1987/88) about 75 percent of the total 251 projects were successful.

EXPERIENCE

The irrigation groups have clearly demonstrated that given the opportunity, the rural poor in Bangladesh working collectively can be efficient entrepreneurs in socioeconomic-development projects. The groups have repaid 75 percent of the Grameen Bank loans and in July 1987 group repayment of the Revolving Loan Fund loans was 71 percent. This may be compared to the 46 percent recovery of official loans in the agricultural sector in the same year.

Proshika provides credit without requiring collateral, unlike the official loan schemes. The majority of the rural poor, especially the landless, are unable to provide collateral and therefore have no access to official sources of credit. The groups have shown beyond doubt that the poor are creditworthy and even trustworthy to be provided loans without collateral.

Whether managed by groups or by private owners, irrigation projects give rise to increased demand for labor especially where High Yielding Variety boro is added to the cropping cycle. With projects managed by groups, however, it is the poor who get the income through rent and profit. Moreover, small peasants and sharecroppers have greater control over water distribution in a group scheme as compared to a private scheme (Ahmed 1989).

Water selling by the rural poor should not be viewed only in terms of employment and income generation. There are social implications as well. The rural power structure in Bangladesh is based on a patron-client relationship (Hossain 1980) between the rich landowners and the rural poor in which the rich have the power to dominate and the poor, having no power, are dominated. In the whole bargaining process it is the rich who decide and the poor who must accept.

For the first time in Bangladesh, some groups of rural poor through the process of selling water, have created a new bargaining situation in which they are also decision makers. They have taken upon themselves a completely new role in the production process by applying an important technology, and thus have taken charge of a significant productive asset. This has given them a sense of confidence, dignity, and power. They believe that the effort has contributed to the improvement of their lives (Huda 1989).

CONCLUSION

Proshika and the irrigation groups have been running this project for eight years now. By this time a fair number of groups have become owners of irrigation equipment, paying off their loans and continuing their water-selling services. This indicates that the process may prove sustainable. Several other nongovernment organizations have engaged in similar endeavors. Still, if seen in the context of the creation of a wider impact for growth and equity, all of these efforts, including that of Proshika, have a long way to go and strong official policy support will be an absolute necessity, if they are to succeed.

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Irrigation Water Management in Gaylegphug Lift Irrigation Scheme

R.B. Subba[‡]

INTRODUCTION

THE KINGDOM OF Bhutan is a landlocked mountainous country situated between India and China in the eastern Himalayas. Bhutan being an agrarian country, the Royal Government emphasizes agriculture and horticulture development. The development of agriculture is closely associated with the importance attached to irrigation. The availability of land for cultivation is limited due to the geographical and topographical nature of the country. Realizing the vital role of water for agricultural development the Department of Agriculture has extended assistance to farmers in constructing new irrigation channels from small perennial streams, and in renovating old irrigation channels. Since 1975/76, the Department of Agriculture has undertaken construction of major irrigation systems while continuing to assist farmers to construct minor irrigation channels.

THE GAYLEGPUG LIFT IRRIGATION SCHEME

One of the major irrigation schemes undertaken during 1977/78 was the Gaylegphug Lift Irrigation Scheme in Gaylegphug District which has since been declared one of the main granary areas of the Kingdom. The development of Gaylegphug-Sarbhong area in a multifaceted manner

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has been accorded very high priority by the Royal Government. The Royal Government approached the Government of India in 1975 to obtain assistance to frame an area-development plan for this region. A major component of this plan was the provision of irrigation facilities to farmers who had been settled in the region on cleared land and who had been anticipating irrigation facilities. After apparently detailed studies on the geology, hydrology, and topography of the region, and after considering the availability of sufficient power, the Lift-Irrigation Scheme was deemed economical and an expeditious means of irrigation. The scheme was formulated in two stages, to irrigate a gross command area of some 810 ha (2,000 acres) in Stage I and 1,012 ha (2,500 acres) in Stage II.

IRRIGATION MANAGEMENT IN STAGE I

Monsoon Rice-Crop Irrigation

During the peak monsoon period from the third week of June to August the Lift Irrigation Scheme is augmented by rainfall (about 500 mm), seasonal streams, and rivers. Of the total gross area of 810 ha (2,000 acres), the maximum cultivable command area is 567 ha (1,400 acres). The remaining areas are covered by seasonal rivers, towns, and industries. Till now, the project has been able to bring 405 ha (1,000 acres) of land under effective irrigation. All irrigated land is under rice cultivation and it is proposed to adopt spring rice in due course, according to the planned cropping pattern. The project report proposed irrigating a gross area of 810 ha (2,000 acres) of land but it was later discovered that most of the command area is composed of sandy loam. Owing to greater than expected percolation rates the actual water requirement is much greater than originally envisaged. Transplanting operations are never completed according to plan due to labor constraints and frequent water-shortage problems. Irrigation remains effective from the transplanting stage to the heading stage i.e., from July to the end of September. During the critical stage from October to early November, however, irrigation water is inadequate to meet consumptive use. After the rivers and streams dry up, pumped water becomes the only source for irrigation.

Irrigation for Wheat

At present only 10-15 percent of the total area is under wheat crops. Wheat sowing starts in mid-November and harvesting takes place at the end of March or in the first week of April.

PRESENT WATER-MANAGEMENT SYSTEM

At the headworks, water is lifted from the right channel of the Mao River (Aie River) and fed into the main conveyance system. From there it flows into 11 lined distributary channels before reaching individual farmers' fields via earthen tertiary channels.

When irrigation water was first delivered to the fields for monsoon rice irrigation the following problems were discovered:

1. Conflicts arising from different interpretations of water rights among the users.
2. Misuse of water by individual farmers.
3. Inadequate irrigation water.
4. Reluctance of farmers to make field channels.
5. Terraces uneven and not leveled properly.

In order to solve the problems, a number of meetings were organized by the project authorities with representatives of the Dzongkhag (District) Administration and of the farmers.

At these meetings it was decided to institute the following rules:

1. In every distributary, there is to be an elected water master (locally *Dung Sardar* or *Chusumpa*) responsible for water management and distribution.
2. Misuse of water per occasion is to be punished by a cash fine and cancellation of one turn in the offender's water rotation.
3. All users are to make feeder channels and to allow right of way for feeder channels to other farmers as required.
4. The water capacity in the channels is to be improved by the project authority.

ELECTION AND RESPONSIBILITY OF DUNG SARDAR

Each of the 11 distributaries along the main canal has a dung sardar, elected by the users of the respective distributary under the chairmanship of the *Gupof Block Mondal* (elected head of the block) in the presence of the project representative. The users, who form a water users' association, agree that the dung sardar will be the sole authority for water distribution and no user may interfere. The dung sardar should be honest and sincere in the discharge of his duties; if he is found inefficient, a new election should take place. He is the contact person between the project authorities and the farmers. In practice, the farmers tend to respect the water-distribution agreement. The dung sardars are paid in kind by the users of the irrigation facilities, about 15-20 kilograms (kg) unmilled rice per year per farm. They work under the technical guidance of the project authorities. Conflicts regarding the interpretation of water rights or water misuse are resolved by the *Gupof Block Mondal*.

WATER DISTRIBUTION ON-FARM

Water flow in the main canal remains almost constant during the peak period of distribution so that water is delivered to each farm by turn, once every five to six days. This rotation system is fixed by the dung sardars of the respective distributaries. Daily, the dung sardars inspect the conditions of the channels and the rice fields to ensure the proper usage of water. They regulate water at the outlet points according to water availability and requirements, and make equitable delivery of water to the various networks of field channels. After the water has been delivered to the farms the farmers must irrigate their lands within the allotted time. In the evening hours, the dung sardars usually visit the houses to give notice of the planned water turn to farmers who are next in line. During the dry period, maximum attention is given to poor-soil areas where the water requirement is highest. Thus the dung sardars reduce the interval of "turnout" in such areas and increase the turnout interval in areas with soils of higher water-holding capacity. These changes are made after informing the water users' association but, in all cases, the dung sardars are guided by the technical staff of the project.

MAINTENANCE

Minor maintenance such as clearing of jungle and clearing away debris along the main canals and distributaries or from the diversion works of the feeder channels, is organized by the dung sardars at least three times a year. Major work such as renovation of channels and the repair of protective structures is done by the project authorities. The labor required is contributed by the users. Expenditures for operation and maintenance such as electric energy or the purchase of spare parts are borne by the Department of Agriculture. To date, the Royal Government has not imposed any water charges on farmers. However, they may have to pay electric-energy costs in the future.

FACTORS AFFECTING THE EFFECTIVENESS OF WATER MANAGEMENT

The authorities responsible for water management are handicapped in controlling efficient use of water because of the following reasons:

1. A farmer with land close to an outlet point may take advantage of the continuous flow of water to his field, rejecting the rotation system adopted by his dung sardar.

2. Some farmers damage the channels and embankments to divert water or use syphon pipes during the night.
3. It is the general practice of the farmers to irrigate crops field-to-field instead of using irrigation channels. This results in inefficient irrigation and loss of water as supply is always interrupted to allow for repair or maintenance of pumps.
4. Supply of water to the fields is subject to the availability of electricity from Assam. Sometimes, power is cut for four to five days during which rice fields remain dry.
5. Every year the Mao and Kailash rivers flood, during which huge quantities of debris and silt are deposited. Pumping is resumed only after the debris is cleared, usually after five to seven days.

CONCLUSION

The beneficiaries of the project are already moving rapidly towards self-sufficiency in food grain in comparison with those in other locations. Much has been done by the Royal Government project officers to help farmers to organize themselves, without any formal intervention from outside. They have been performing the role of social organizers, perhaps without recognizing this in any articulated sense. The potential exists to further improve the socioeconomic well-being of the beneficiaries by helping them to use their irrigation facilities more efficiently through better management of water, coupled with improved rice-cultivation practices.

Role of the Institutional Organizer in Assisting Farmers to Participate in the Rehabilitation of Tank Systems

R. Sakthivadivel[‡] and S.N. Kallapiran^{§§}

INTRODUCTION

A TANK IS a small storage reservoir used to impound the runoff from the monsoon rains which occur during a few months of the year and to regulate the supply of water, mainly for agricultural use. Tank irrigation has been widely practiced in South India and has been a dominant component of Tamil Nadu agriculture contributing to a third of the net area irrigated in the State. There are 39,202 tanks irrigating 0.928 million hectares of land in this state. These tanks also recharge groundwater and thus facilitate supplemental irrigation through wells.

Most of the irrigation tanks in South India were built hundreds of years ago by kings, chieftains, and big landlords. Heavy siltation and encroachment, inadequate maintenance, operational inefficiency and lack of regulation, and excessive use of water at the farm level have reduced water-use efficiencies to as low as 25-35 percent.

THE ROLE OF THE UNIVERSITY

As part of its research program, the Centre for Water Resources of Anna University undertook a pilot study in rehabilitation of the Padianallur tank near the Red Hills in Chengalpattu District. The study began in July 1981 with assistance from the Ford Foundation. It was initiated with a

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view to investigate the present status of the irrigation system, examine its deficiencies, design measures for improving the system, evaluate subsequent results, and prepare guidelines for efficient management.

In this study inadequate attention was paid to understanding farmers' concepts of water rights and water-distribution practices and their perception on the modernization program. Had the team included a person with appropriate community-work experience who would have given full-time attention to these questions, a much stronger basis for helping farmers reach a consensus on new water distribution and management practices could have been established.

A PROPOSED EXPERIMENT WITH THE PARTICIPATORY APPROACH IN TAMIL NADU

In view of lessons learnt from the Padianallur pilot study, as well as from experiences in the Philippines, the Centre for Water Resources is currently carrying out a research program on tank modernization, funded by the Ford Foundation, using institutional organizers to apply a participatory approach. The project is titled "Alternative Approaches to Tank Rehabilitation and Management -- A Proposed Experiment." It envisages the selection of four experimental study tanks and four control tanks which are to be rehabilitated under a European Economic Community grant. The level of investment per hectare (ha) of command area will be the same in both the experimental and the control tanks. While the rehabilitation program is being carried out in the experimental study tanks using institutional organizers to involve farmers, the rehabilitation program of the control tanks applies the usual blueprint approach.

The study contemplates documenting the process of rehabilitation with farmers' participation. It takes a multidisciplinary approach of institution building, agricultural extension, and educating the farmers to organize, in addition to the engineering and technical aspects. The Public Works Department and the Agricultural Engineering Department are collaborating to implement the program. Consultants from the Association for Sarva Seva Farms, a voluntary organization of repute in community-development programs, along with the Centre for Water Resources staff, provide necessary expertise and guidance to field staff in their day-to-day-research work.

FIELD STAFF

The project study team consists of an Institutional Organizer, a Process Documenter and a Technical Assistant at each tank site. Elsewhere, study groups consist only of an Institutional Organizer and a Process Documenter. Here a Technical Assistant is also included to provide relevant technical information to the farmers and give adequate explanation on engineering

matters to enable them to understand better the engineering proposals of the implementing agencies. This additional input is considered necessary in view of the inadequacy and unreliability of water supply as well as to meet the needs of the local situation.

SELECTION OF TANKS

Rapid sociotechnical surveys were carried out at each of the 20 tanks to be modernized under the European Economic Community grant. The investigation team consisted of an Institutional Organizer, a Process Documenter, and a Technical Assistant, guided by a faculty member of the Centre for Water Resources. After a careful study of the hydrological data collected and other aspects such as the enthusiasm of the farmers, the expected extent of incremental benefit, and the number of farmers that are likely to benefit, the committee selected two study tanks and two control tanks.

The two study tanks represent two different situational characteristics demanding location-specific strategies. The perceptible changes in attitudinal patterns and the behavioral complexes in these two systems are being recorded in the process documentation as part of the study program. In the following sections this paper deals briefly with the institution-building experiences gained by the project team in one of the study tanks, namely the Kattiamandal tank in Chengalpattu District.

KATTIAMPANDAL VILLAGE

In India, according to an ancient religious order, society was divided into four main caste groups on a functional basis i.e., priests as Brahmins, warriors as Kshatriyas, traders as Vaishyas, and workers as Sudras. Sudras include the "untouchable" Harijans who were on the lowest rung of the caste ladder. The Harijans constitute about 18 percent of the population and the presence of these "untouchables" gives all caste-minded Hindus a feeling of superior social status, no matter how poor they may be. Even though these caste prejudices are slowly fading from the village community since independence due to the implementation of many welfare programs, society has yet to release itself from the clutches of caste dominance.

The village population consists of members of two castes: the "upper caste" landowning Mudaliars constitute 34 percent and the Harijan people constitute 66 percent. The 59 Harijan farmers own approximately 25 ha (62 acres) (17.7 percent) while 253 Mudaliars own approximately 117 ha (290 acres) (82.3 percent) of the command area. The Mudaliars depend on Harijans for all farm labor and other agricultural services.

When we first entered this village in September 1988, a rift between Harijans and Mudaliars had been in effect since the previous year. The rift resulting in non communication between the two

castes was due to the "upper caste" Mudaliars having bid the heavy price of US\$7.66 (Rs 600) for the palm leaves on the tank bund, rather than following the traditional practice of giving them to Harijans for a token amount of US\$2.6 (Rs 20) per annum. Mudaliars, with caste bias, do not sit together with Harijans in a meeting to discuss a common issue.

The system has two tanks, namely *Peria eri* (peria means big and eri means tank) and *Chitheri* (small tank) situated respectively 500 meters (m) west and 200 m northwest of Kattiampandal village. They are interconnected by an inlet regulator. Field work commenced in this village on 1 September 1988. This involved primarily a deliberate and persistent approach to capitalize on *ayacutdhars'* (tank beneficiaries') enthusiasm, initiative, and leadership for internalizing their commitment to the work.

Two types of interview schedules are being used for data collection: one for the detailed socioeconomic survey and the other for certain key information. The detailed schedule is being administered to 70 farmers. The key information schedule aims to record periodically, irrigation data in different farm locations.

WATER DISTRIBUTION PRACTICES

This tank observes a traditional water distribution practice known as *Pangu* (share). In ancient times, priority rights were granted to six influential families of the village, whose lands were given preferential water allocations in times of scarcity. The pangu, consisting of 16 kaanis or 8.61 ha (21.28 acres) is the standard unit for water allocation and water charges. Each pangu is allowed 12 hours of irrigation with tank water. Pangu holders are given preference to irrigate their fields by drawing lots. Only pangu-holding farmers are eligible to receive water in times of scarcity, when other farmers receive none. The privileged farmers pay a special tax called *Paichal vari* (irrigation tax) and also bear all the costs of village festivals. An interesting aspect of the pangu system is that pangu holders are entitled to sell their water rights to other farmers. *Neerkatti* or *Kambukatties* (luscars or ditchtenders) were appointed by the villagers to look after the water allocation and water distribution according to the pangu system in times of scarcity.

The traditional pangu system was modified by the farmers in a meeting held on 10 December 1988, adapting it to present conditions and to changes that have taken place in the command area over time. The main changes made in water distribution were:

1. The 6 pangus have been changed to 10.
2. The entire command area of 142.5 ha (352 acres) and the adjoining lands reached by irrigation have been included in the pangu. The size of the 10 pangus has been increased to approximately 163.5 ha (404 acres).
3. All like-minded people or kin of a family owning lands in the command area are grouped under one pangu. The size of each pangu is approximately 16.2 ha (40 acres).
4. Twelve hours of irrigation are permitted to each pangu.
5. Night irrigation is also permitted in the tank command.

A disadvantage of the system is that lands grouped under one pangu are not contiguous but distributed over the entire command area. Sharing of water through the pangu system is practiced in times of scarcity and the line loss and consequent water waste is greater. In spite of this, the farmers feel that this arrangement limits conflicts. This situation may change for the better after implementation of the rehabilitation program when reliability of water supply is improved and farmers are better educated.

INTEGRATION AND BUILDING RAPPORT WITH FARMER BENEFICIARIES

Rapport building is the pace setting and pathfinding process for initiating a project in any area, and much more so in a remote village like Kattiamandal, as yet untouched by modernization. Rapport building with the two dominant caste groups, i.e., Mudaliars and Harijans, including converts to Christianity, though slow, gained momentum after 15 to 20 days. The small and closely knit rural community soon realized that the field functionaries had come to live with them to help the community to help itself by its own efforts.

The project team established good rapport and integration with the farmer beneficiaries through a series of entry programs, formal group meetings, and informal discussions with individual and small groups of farmers, which enabled them to dispel the misunderstanding between these two caste groups. The entry programs were all carried out by farmers and at the farmers' expense, with field staff serving only to motivate participation.

FARMERS' PARTICIPATION

Frequent meetings were held with the farmers to enlist their active participation and involvement. Task forces were formed with members nominated by the general assembly to deal with the following four major components of the tank-irrigation systems:

1. Augmentation of supply to tank.
2. Improvement to tank structures.
3. Command area development.
4. Water distribution and management.

Three members were nominated for each of the first three groups in this tank, while for the fourth group, nine members were nominated. Group meetings were held periodically by the field staff, and members were taken to the site in order to appraise the provisions made in the Public Works Department estimates and to understand the farmers' needs.

ENTRY PROGRAM ACHIEVEMENTS

The institution-building strategy of fielding a team consisting of an Institutional Organizer, a Process Documenter, and a Technical Assistant, ably supported by the Center for Water Resources staff and consultants culminated in the successful resolution of certain long-pending issues. This is of immeasurable value to irrigation management. Above all, the attitudinal changes in the community have poised it for promoting future growth. The achievements of the entry program are:

1. Resolution of the conflict between the two castes and reestablishment of the traditional relationship of amity and cordiality.
2. Motivation of the rural community in general and the ayacutdhars in particular to become partners in tank rehabilitation and management.
3. Identification of local leaders, involving them in decision making and inspiring them to a continued commitment to tank-irrigation improvement.

Some physical achievements due to the institution-building activity were also realized. These included the fixing of a new wooden plug in the existing sluice of Peria eri and the cleaning and desilting of the main canal and branch canal over a length of 780 m, by mobilizing the services of 31 farmers, among others. The implementing agency was also convinced to carry out selective on-farm development works including the sinking of a community well, based on farmers' requests, rather than in the conventional way.

Summing up, the nature and course of activities and the response of the farming community tend to show:

1. Increasing awareness and interest in developmental functions.
2. Initiative and leadership to manage problems as they surface.
3. Constructive thinking to identify the dimensions of the different problems and finding solutions by group action.
4. Developing the spirit of cooperation and understanding to shoulder common responsibilities.
5. Responding to the challenges by utilizing the services of the field team and effectively collaborating with the Center for Water Resources and implementing agencies such as the Public Works Department and the Agricultural Engineering Department.

EXPERIENCES AND LESSONS LEARNT TILL NOW

Our experiences in organizing farmers through the action of institutional organizers in the two study tanks during the last six or seven months show the following:

1. Building up a viable water users' organization to take responsibility for managing the small irrigation tank systems may be complicated and extremely delicate, especially in the heterogeneous caste society found in many villages in India.
2. Despite this negative factor there still exists a general awareness in the farming community of the need to unite on common issues such as the acquisition of adequate water in their tanks.
3. In view of the erratic nature of monsoon rains there is greater awareness among farmers about conjunctive use of well-water and tank water for successful agricultural operations.
4. The present year (1988/89) is one of subnormal rainfall for the Kattiamandal tank, whereas it is a drought year for the Kedar tank. The interest of farmers at the Kedar tank is, therefore, not very encouraging even though there is general interest among farmers to participate in this program. Hopefully, the next monsoon rains may help speedier integration of the farmers of Kedar tank.
5. This study is bound to invite increased attention among farmers in the future. In a caste-ridden heterogeneous community, integrating farmers into an organizational group will take time.

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Using Irrigation Agency Staff as Institutional Organizers: The Small Systems Turnover Program in Indonesia

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INTRODUCTION

THE IRRIGATION SECTOR in Indonesia is currently under pressure to shift its emphasis from construction and rehabilitation to the development of a self-sustaining operation and maintenance program aimed at slowing, if not stopping, the typically rapid rate of deterioration of irrigation systems. The current irrigation subsector loan programs with the World Bank and the Asian Development Bank are directed at allocating proportionately more funds to operation and maintenance and at introducing new policies aimed at making operation and maintenance more efficient and sustainable.

Perhaps the two most prominent of the new policies in the shift towards sustainable operation and maintenance are, charging for irrigation services and the turnover of small irrigation systems. The irrigation-service fee is payable under a policy, currently being tested, of collecting fees from water users in agency systems to recover operation and maintenance costs at the main-system level. The objective of the turnover program is to transfer operation and maintenance responsibility from the provincial irrigation services to the farmers in all systems below 500 hectares (ha) within 15 years of the 1987/88 budget year. This will amount to 70 percent of all systems currently listed in the government inventory of irrigation systems, or 21 percent of the total public-irrigated area in the country. During and after turnover, it is expected that provincial irrigation services will take on a more macro-level role to improve water management between systems along river courses. Assistance to small systems should then be provided only where solving the problems is truly beyond the capacity of local water users' associations. These policy changes constitute a basic revision of thinking about the appropriate management roles for the government and for the farmers.

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These changes have occurred in parallel with a broadening recognition of the traditional potential which farmers in various parts of Indonesia have for managing irrigation systems. The Balinese *subak*, the Javanese *ulu-ulu*, and the West Sumatran *tuo banda* are only a few of many examples of frequently observed competent traditional irrigation institutions. Government officials now widely recognize that farmers are capable of handling routine operation and maintenance tasks in small-scale systems, given the proper training, guidance, and legal support.

AGENCY INTERVENTION AND FARMER DEPENDENCY

Since provincial- and district-budget allocations are generally based on area irrigated by agency systems there has been an incentive to reclassify village systems as agency systems, often regardless of the amount of provincial irrigation-services investment in the systems, if any, prior to "incorporation" into the provincial irrigation services. A small-scale provincial irrigation-services system may not actually be managed by, nor be dependent upon, the agency.

Much change has occurred in both the degree and type of provincial irrigation-services investment, and correspondingly in the degree and type of farmer dependency on the agency in small irrigation systems. However, even a pattern of occasional provincial irrigation-services repair assistance to a small system may discourage the development of a routinely active water users' association, if the assistance given is solely from provincial irrigation services and if it replaces routine maintenance. The water users' association would not bother to maintain all parts of the system because it would expect the agency to repair them eventually. As long as essential structures continue to divert, convey, or divide water in accordance with the users' basic system objectives (e.g., two rice crops a year) they may be content to allow the structures to deteriorate even though the eventual cost of "heavy repairs" (what farmers assume is the role of the agency) may exceed the cost of "proper routine maintenance" (what the agency assumes is the role of the farmers).

The government hopes to break such patterns of dependency during the turnover process, because full responsibility for operation and maintenance in small systems will be transferred to the farmers. The government seeks to implement a turnover process which will prepare the farmers institutionally and repair the system physically (if need be), so that the farmers will find it simple to manage operation and maintenance unaided, in the future. The task of the institutional organizer is not so dramatic as might be assumed, as many of the management tasks are even now being done by farmers, albeit informally.

TURNOVER-IMPLEMENTATION PROCESS

Target

Implementation of the turnover program began with 12 systems irrigating a total area of 1,200 ha. The program quickly spread to other systems, sections, and provinces, and will reach 2,304

systems with a total command area of 185,300 ha, by 1992/93. During the fifth Five-Year Plan (Pelita V), the turnover program will be limited to only systems of 150 ha or less, except for two pilot systems of about 500 ha each. If the process progresses as planned, within 15 years all systems below 500 ha will have been turned over to water users' associations.

Involved Organizations

The Directorate of Irrigation together with provincial irrigation services is responsible for overall program development and implementation. During the first three-year pilot phase, they are being assisted by the Institute for Social and Economic Research Information and Education -- an Indonesian nongovernment organization and the International Irrigation Management Institute (IIMI). The Institute for Social and Economic Research Information and Education is responsible for training and assisting in program development and field-advisory support. IIMI's role is to collaborate with the Directorate of Irrigation and provincial irrigation services in research, monitoring and evaluation, and to assist with program development and advisory support. Both the Institute for Social and Economic Research Information and Education and IIMI are funded for the turnover work by the Ford Foundation. These participants meet periodically as "working groups" at the national, provincial, and section levels.

System Categories

Under the turnover process currently being implemented and tested, all systems below 150 ha in a given section are divided into three categories: A, B, and C.

System categories for the turnover program.

Category	Relevant system characteristics	Turnover preparation activities
A	No prior agency investment; May or may not need repair	Removal from provincial irrigation-services inventory; Development of water users' association
B	Prior agency investment; No need for physical repair	Development of water users' association
C	Prior agency investment; In need of physical repair	Development of water users' association; Special maintenance assistance for physical repairs

Stages of the Turnover Process

In its most complete form (category C) the turnover process consists of six basic stages at the field-implementation level:

1. An inventory of field data is made in all systems eligible for turnover and is divided by category.
2. In the B and C categories, a "profile" is conducted to obtain more detailed information. It involves additional walk-throughs of the system, making a sketch map of the system, and in-depth interviews of farmers and water users' association leaders.
3. A list of farmers' suggestions on the repairs needed is collected and drawings are made of each suggested repair. The suggestions are ranked by priority by farmers, and a farmer-design version is made.
4. Construction is carried out using farmers as laborers. The government pays for all materials and labor.
5. Where no official water users' association exists, one is created. Repeated monitoring and guidance by provincial irrigation services are felt to be needed for institutional development.
6. Official transfer of operation and maintenance authority and change of status of the system are expected to occur about 12 to 14 months after the inventory stage begins.

USING AGENCY STAFF AS INSTITUTIONAL ORGANIZERS

Why Use Agency Staff as Institutional Organizers?

In past experiments with the use of community or institutional organizers in the development of water users' associations, university-trained institutional organizers (usually social scientists) were recruited from outside the agency to live and work in the field. They were usually responsible for only one or two small systems or tertiary blocks. For the turnover program, at least in the initial three-year pilot phase, the government has decided to use provincial irrigation-services field-operations staff (usually the *juru pengairan*, or irrigation inspector) as institutional organizers. There are six main reasons for this decision.

1. On a national scale, there are no sufficient funds to hire non-agency institutional organizers, nor are there enough university-trained recruits.
2. In the long-run, this strategy is expected to help develop the agency's capacity to use a more sociotechnical approach to irrigation development. In part, this means more systematic interactions with farmers as water "managers," not just as "users." The role of the institutional organizer is not perceived as a "position" but rather as a "task" of the field staff.

3. To some extent, using agency staff as institutional organizers frees the agency from dependence on outside organizations in its dealings with the social aspects of irrigation development, and prevents the rather perverse outcome of having the agency become detached from the social aspects, in the very process of seeking assistance in dealing with them.
4. Many agency field staff have experience working in systems that will be turned over and are already acquainted with some of the problems and people involved. It is assumed that most have the potential for learning the requisite social skills, given proper training, supervision, and incentives.
5. Non-agency institutional organizers recruited on the open market tend to have a shorter span of attention and dedication since they have no long-term career security.
6. The institutional organizer experience helps reorient not only staff but the bureaucracy itself towards a more macro-level, coordinative, interactive, and service-providing role in the future.

Job Orientation and Background of Irrigation Inspectors

The irrigation inspector is the key field operation and maintenance position at the third level of the provincial irrigation-services hierarchy and supervises the lowest level of subsection staff -- the weir, gate, and ditch tenders. Most of his tasks are technical in nature. The inspector is used to receiving precise, tangible targets, and instructions and is not accustomed to being creative. Nevertheless, realities in the field may require some creativity in implementing even the most narrow instructions and some tasks do require communications and meetings with farmers. There are several factors such as relatively large area, distances which must be traveled, and the large number of gates to be set and inspected which tend to restrict the extent to which the irrigation inspector interacts with farmers in carrying out his duties. In the samples in west and central Java, most inspectors reported having sideline-income earnings which sometimes may compete for time. Most did not have motorcycles.

Clearly, if an irrigation inspector with his relatively restricted technical orientation is to be given an assignment as an institutional organizer which requires frequent and intensive interaction with farmers, in systems being turned over to the users, he will have to be given training in institutional- development skills, clear delegation of specific tasks (so as not to require too much creativity in this new endeavor), and an adequate transportation or overtime allowance. There will also be need for more frequent on-site visits by supervisors. There may be a need to decrease some of his routine work load during periods of intense activity as an institutional organizer. Under the turnover program most institutional organizers are assigned two systems which are located within his jurisdiction as an irrigation inspector.

Tasks of the Institutional Organizer

The irrigation inspector-cum-institutional organizer is called upon to act as: collector of social and technical information, individual and group interviewer, draftsman, lay consulting engineer, mediator between agency and farmers, bookkeeper, and water users' association institutional-development adviser. This follows the procedures listed earlier with regard to the turnover process.

The physical repair is intended as a catalyst for institutional development of the water users' association. During this stage, which should not exceed four to six months, the institutional organizer collects and makes sketches of all farmer suggestions for repairs, holds meeting with farmers in which they prioritize proposals, and then makes a farmers' version of design. This is later integrated with a "technical" version of design for use in actual construction.

Simultaneously with the implementation of the design and construction stage institutional organizers should be making efforts to form water users' associations or to strengthen them. This includes three basic elements: first, identifying key farmer representatives and informants; second, (if there is no formally established water users' association) assisting in the formation of the water users' association; and third, involving the key farmer representatives in the turnover activities. Assisting in the formation of an official water users' association involves helping farmers to hold meetings to select the water users' association leaders, preparing a water users' association charter and constitution, seeing to the approval of the charter and constitution by the appropriate local-government authorities, and possibly holding a meeting for the legal establishment of the water users' association attended by farmers and local-government officials.

The final stage is immediate preparation for turnover. At this time the main activities are 1) testing and possibly correcting newly constructed structures, 2) formal legalization of the water users' association (if not yet done), 3) preparation of the water users' association post-turnover operation and maintenance work plan, 4) possible planning and conducting of agency-staff relocations or reallocation of assignments, and 5) arranging and conducting formal turnover procedures and meetings.

It is expected that following turnover of the small systems, the irrigation inspector will collaborate with farmers in a more macro-level role in coordinating planting dates, crop types, and diversion of water between systems along river courses. He will provide technical advice and arrange for provincial irrigation-services assistance for repairs, only if solving the problems is considered to be beyond the capacity of the water users' association. It is hoped that the experience of the inspector as a turnover-institutional organizer will develop his capability to handle these tasks with a more balanced sociotechnical approach.

Institutional Organizer Training

The institutional organizers are trained for varying periods of time prior to each task: for three days prior to conducting the inventory; for eight days prior to use of the sociotechnical profile; for six days prior to design and construction phase; for an as yet undetermined period prior to preparation for turnover. During the current pilot phase the Institute for Social and Economic Research, Information, and Education has been conducting the training.

ABILITY OF AGENCY STAFF TO FUNCTION AS INSTITUTIONAL ORGANIZERS

Positive Results to Date

The experience of being an institutional organizer appears to be positive in helping the irrigation inspectors discover the value of farmer experience and knowledge and the importance of social factors related to irrigation. Many inspectors hear for the first time the farmers' rationale for why a certain type of structure is needed and not another. For example, they discover that farmers can tell them exactly what type of lining is needed and where. The farmers know this by experiencing relative degrees of water loss under different levels of water discharge through the channel. The institutional organizer realizes that this is knowledge which is not ascertainable by a conventional technical survey. The institutional organizer also learns that farmers request simple structures, such as lining, only where they are really needed so as to spread out and better use the limited funds available.

Institutional organizers are also receiving proposals from farmers which would not be perceived as a need by an inspector, were the farmers not consulted. For example, farmers know they need more sediment-flushing gates because of the amount of labor required to clean out the channels. Also the tendency of the proposals to emphasize the conveyance system as opposed to the diversion structures (which tend to be emphasized by the agency) makes the institutional organizer more sensitive to designing for farmer-management needs.

Through the profile the institutional organizer learns that although there may not be an active and functioning official water users' association, numerous management tasks are being accomplished by the users through informal or traditional mechanisms. Seeing the extent of current farmer-management practices, the institutional organizer discusses with the farmers their complete takeover of operation and maintenance, and repair work after turnover.

There is an apparent feeling among the institutional organizers expressed in working group discussions or in one-to-one interviews that they are a select group which has been given a challenge to implement a new type of program in which they are expected to use initiative in the field. They have come to realize that working with and motivating farmers to take on operation and maintenance tasks will be an increasingly important measure of their success as inspectors, rather than application of conventional job-performance measures of how timely they fill in forms or do operation and maintenance tasks themselves.

Problems, Constraints, and Suggestions

The problems observed to date, after one year of turnover-field activities, seem to be related mainly to the operational skills, supervision, and work incentives needed to support their work.

It is the conclusion of these authors that most irrigation inspectors are intellectually capable of understanding and performing their tasks as institutional organizers. These tasks are of two

types: 1) making physical repairs with farmer participation and 2) water users' association development. The key constraints are training, supervision, transportation, and operating expenses, and work incentives such as overtime. If these constraints can be overcome, the irrigation inspector as institutional organizer should be able and willing to see that the program successfully accomplishes its goals, which are to turn over operation and maintenance responsibility to the water users' associations and to reorient the way the agency relates to small irrigation systems.

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Community Organizers and Farmer Participation: A Case Study of Traditional Irrigation Systems in South Sumatra, Indonesia

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INTRODUCTION

THE GOVERNMENT OF Indonesia has been actively and intensively engaged in rehabilitating existing irrigation systems and in building new ones since the first Five-Year Plan (1969/74). Community organizers in irrigation development were first fielded in Indonesia in 1982 in a pilot project called the High Performance Sederhara Irrigation Systems Projects.

This pilot project was originally carried out by the Department of Agriculture and was funded by the United States Agency for International Development and the Ford Foundation. A year later the Public Works Department took over the pilot project. This was necessary as field experience showed that engineering problems could not be dealt with by the Department of Agriculture because it lacked the necessary authority to rehabilitate and build new irrigation systems. The Public Works Department was already vested with the duty, responsibility, and authority for the whole process of irrigation development and therefore appeared to be the right agency to undertake the pilot project. The Department of Agriculture was authorized to deal only with

The community organizers were fielded both in government-managed irrigation systems and in farmer-managed irrigation schemes, or what are usually referred to as traditional irrigation schemes. The latter are thought to have high potential for development. According to the Public Works Department data there are 4,819,470 hectares (ha) under irrigation in 6,731 government systems and 1,036,613 ha in 25,304 traditional schemes.

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Because its resources are limited the government has undertaken to turn over responsibility for operation and maintenance of small-scale irrigation schemes to water users' associations. Before turnover, water users' associations must be strengthened and prepared to manage their irrigation schemes. The government has launched a program based on community organizers to prepare water users' associations for this responsibility. In the past no such preparation was made.

Since the start of the community-organizer program in irrigation development the Indonesian government has been cooperating with nongovernment organizations such as the Institute for Social and Economic Research Education and Information which has considerable experience in the application of participatory approaches in rural development. In the traditional irrigation schemes in South Sumatra Province the role of the Institute for Social and Economic Research Education and Information was to select and recruit community organizers, to train them, and to supervise and monitor their work in the field. The government has asked the Sriwijaya University, located in the region, to monitor the project and to periodically compile the lessons learned.

This paper focuses on traditional irrigation schemes which are being developed in Lahat, South Sumatra Province with funding from the Ford Foundation. This case is of interest for several reasons. First, the schemes are traditional ones which are fully managed by the farmers. Other projects which use community organizers are government irrigation systems. Second, in this project, construction is done by "swakelola" (agency force account), in which the farmers, through their local-irrigation committee (*panitia siring*) act as contractor. In other projects a private contractor is normally engaged. Third, even though the government is investing in the development, the irrigation schemes will remain the property of the farmers after construction is completed.

BACKGROUND TO THE LAHAT CASE

Three irrigation schemes are included in this pilot project: Siring Agung, Siring Curup Ganam, and Siring Batu Surau Ilir. The water source for the three schemes is the Air Mata Lintang River. Six other schemes also draw water from this river. Even though the nine schemes divert water from the same river there are no arrangements for allocation of water among them. Each scheme distributes water independently using a type of proportioning weir called *tanggam*.

The farmers have their own institutions for repairing and cleaning canals, which may be done in two ways: by contract or by mutual cooperation. If done by contract, the *panitia siring* carries out the work. This method is distinguished from mutual cooperation in which all farmers participate in the activity. Mutual cooperation is the method applied when there is a major damage to the canal and is not called for frequently.

The *panitia siring* normally has two to four members. The members receive a salary from the irrigation fee paid by the farmers each cropping season. Basically, the *panitia siring* functions as a forum for discussing and solving irrigation problems. It is usually formed when farmers are ready to start planting their rice fields. The term of the irrigation committee is one cropping season; in the next cropping season a new committee will be elected. The systems of customary water allocation and of canal operation and maintenance have been in existence for many years.

STRATEGIES

The purpose of the project is to define patterns and procedures suitable for channeling government assistance to traditional irrigation schemes. Several strategies are applied. The first is a participatory strategy in which farmers take an active part in the planning and construction of the rehabilitation and finally in their operation and maintenance. To stimulate farmers to take part in that process a community organizer is posted in each project location.

The second is the swakelola strategy in which farmers, through their indigenous organizations, implement the improvements to their irrigation schemes. This strategy can be applied because the farmers have experience in developing irrigation schemes and are capable of carrying out the necessary works. With this strategy farmers continue to feel a sense of ownership of their irrigation scheme. Usually, when government agencies improve irrigation schemes, implementation is done by contractors. When this is the case farmers participate less in the rehabilitation process.

The third is the institutional strategy. As mentioned above, in the pilot-project schemes, the institutions created by the farmers themselves, the panitia siring already exist.

THE ROLE OF COMMUNITY ORGANIZERS

For the pilot project three community organizers were recruited from outside the government service by the Institute for Social and Economic Research Education and Information. Had government employees been used, the vested interests of the agencies might have made themselves felt. This would have been contrary to the goal of the participatory approach which emphasizes the aspirations of the farmers. Furthermore, it was assumed that their heavy work load would not have permitted government employees to implement the participatory approach.

Candidates for the positions were required to take three tests: an administrative, a psychological, and a general-knowledge test. The administrative test was to verify the eligibility of the candidates in terms of the announced qualifications. The psychological test was to determine the suitability of the candidates for the position of community organizer while the third test was, obviously, to assess their general knowledge.

The three community organizers chosen (one woman and two men) were relatively young, between 23 and 27 years of age, and all were graduates of the local university. The woman's field of study was geology and the men had studied social science and agricultural economics.

To gain the necessary capabilities and skills the three community organizers underwent training carried out by the Institute for Social and Economic Research Education and Information. During the two weeks of training, topics such as project background, government policy in irrigation development, the community-organizer philosophy, and community-approach principles were covered. In addition, the community organizers also did practical field work. At the conclusion of the training the community organizers formulated their work programs.

The main function of the community organizers is to stimulate the farmers to participate in the design and construction processes and in operation and maintenance of the irrigation schemes. Facilitation of farmer participation by the community organizers proceeds through the following stages: 1) social preparation, 2) socialization of ideas, 3) a walk-through of the existing system, 4) prioritization, 5) design and budgeting, and 6) construction.

Social Preparation

As the community organizers were new to the farming communities, farmers and community organizers had to become familiar with each other. One way this was accomplished was through their participation in social activities such as religious or customary ceremonies. It was hoped that this would lead to their acceptance by the farmers. At first, some farmers thought that the community organizers were contractors or Public Works Department employees. This reaction was normal as community organizers were a totally new and unfamiliar element. Another part of social preparation was the identification of the problems and conditions of the farmers. Identification was done through private interviews with individual farmers, meetings with the farmers as a group, observation, and the study of data, usually available in the village office.

Socialization of Ideas

At this stage, the community organizers assisted the farmers to identify and formulate their problems and needs, especially in the field of irrigation. The community organizers suggested to the farmers that they should think in terms of solving their problems themselves. The community organizers also informed them of the government's intention to assist them to improve their irrigation schemes through the swakelola method in which they would, through their institutions, implement the work. The response of the farmers was generally positive and even enthusiastic.

Walk-through of the Existing System

The next step was a walk-through to assess the condition of the existing system. Before this, a meeting was held to discuss any preparations required. Farmers, together with community organizers and a technician from the Public Works Department then walked from the dam through the entire system. The canal length was measured and staked every 100 meters. The condition of existing structures which needed repair, was observed and notes were prepared describing their condition.

The notes of the walk-through became the basis for planning the improvement of the irrigation scheme. Many sections were found to be in need of repair. In Siring Agung it was found that 20

sections of the canal were in need of repairs; in Siring Curup Ganam, 33 sections; and in Siring Batu Surau Ilir, 12 sections. Landslides were the main cause of damage to canals.

Prioritization

As it was not possible to carry out all the repairs found necessary due to a limited budget the farmers met to prioritize the works to be done. This was then checked in the field and discussed with the Public Works Department technician so that the commitments could be settled.

Design and Budgeting

After reaching agreement among farmers, community organizers, and the Public Works Department staff on construction priorities and obtaining the commitment of the farmers the works were designed and the budgets prepared. This activity was the responsibility of the Public Works Department but community organizers and farmers were also involved.

Construction

Before the start of construction, at the initiative of the panitia siring, farmers appointed a group to formulate a work plan with the assistance of the community organizers. The panitia siring prepared a register of farmers who would work in construction and divided them according to the type of labor required, such as collector of materials, transporter, or skilled laborer. After all preparations were completed the Public Works Department delivered the materials to the panitia siring in stages, which in turn handed them over to the work teams. Construction took two months. During construction, the panitia siring and sometimes the village headman or the Public Works Department staff supervised the work.

In addition to the works agreed to with the assistance of the Public Works Department farmers also organized to repair sections of their canals through pure self-help. The total value of self-help activities may be seen in the following table.

Self-help activities and their value (value in millions of rupiah).

Scheme	Work with assistance from the Public Works Department	Value	Work through pure self-help	Value of pure self-help
Siring Agung	3 sections of canal	1.6	1 section of canal	2.3 (US\$1,350)
Siring Curup Ganam	1 dam	1.6	-	2.5 (US\$1,645)
Siring Batu Surau Ilir	3 sections of canal	1.6 (US\$966)	1 section of canal	0.7 (US\$411)

Notes: Value of farmers self-help = Volume of work X wages per day.

Source: Final Report of the Pilot Project on Development of Traditional Irrigation Systems, the Institute for Social and Economic Research Education and Information, 1988.

In the final workshop held at the provincial level, community organizers and the Sriwijaya University team reported that the farmers were very satisfied. Farmers said "we haven't seen such a large quantity of water in the canal before."

Unfortunately, this paper cannot report on the role of farmers in operation and maintenance because the project is still in progress and till now the community organizers have concentrated on the design and construction process.

CONCLUSION

The Public Works Department assistance in developing traditional irrigation schemes with active farmer participation, as applied in South Sumatra, has shown positive results in the design and construction process. The application of swakelola in the context of this approach has encouraged active farmer participation. Under swakelola, decisions concerning irrigation development have become the responsibility of the farmers while the Public Works Department provides services and assistance. Empowering the farmers to make their own decisions is a key element of participation.

Where irrigation development is done by contract, farmer participation is very limited and farmers are observers rather than participants. Development of irrigation systems need not be by contractors but, within certain limits, may be turned over to the farmers who through their own institutions can execute the work. For best results, farmers' institutions should be strengthened with the assistance of community organizers.

The case of traditional irrigation schemes in South Sumatra has shown that community organizers fill an important function in facilitating farmer participation at every stage of the process. Farmers have the will and the potential to participate; the role of the community organizer is to stimulate and to accelerate the participatory process.

Although this project has shown positive results it should be remembered that it is a pilot project. If the government wishes to adopt this approach more widely government policy should be revised to provide more opportunities for farmers to implement works in irrigation development. There are many advantages to this approach:

- * It elicits farmer participation in the form of pure self-help construction, in addition to the Public Works Department-assisted construction.
- * The irrigation scheme continues to be farmer-managed and does not become a government responsibility.
- * There is a sense of ownership, responsibility, and participation on the part of farmers. There is also a strong likelihood that such schemes will continue to be managed by the farmers.

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Role of Social Organizers in Pumped Irrigation Systems in Subang, West Java, Indonesia

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INTRODUCTION

THE MAJOR OF the people in Subang are peasants who live in conditions of poverty. The economic resources are poor and the area is isolated and is suffering from the effects of drought. In 1982, the village of Sidajaya suffered a serious food shortage, the result of a very long dry season. About this time, after having studied the socioeconomic situation in Subang, Bina Swadaya, in cooperation with the local government, undertook to help the people to overcome these problems.

Before starting, a study was made to reexamine the technical, economic, and social feasibility of project implementation in the proposed region. In addition, in May 1984, a baseline survey was made to collect data necessary for project management and for comparison at the time of final project evaluation. The baseline survey covered the six villages of Sidajaya, Sidamulya, Padaasih, Cihambulu, Cikaum, and Pangarengan. Data were collected by a team consisting of five persons from Bina Swadaya and Bappeda Subang. The feasibility study for installation of pumping systems was conducted jointly with the Kabupaten Public Works Service. The findings concluded that a pumping system in Cikaum village would not be feasible and this village was dropped from the project.

The project is managed cooperatively and is organized under the water users' associations. Up to 1988 this project has covered 506 hectares in 5 villages.

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PROJECT AIMS

Through a process of motivation and consciousness-raising of the community, the aims of the project were formulated as follows:

- * To generate income.
- * To create employment opportunities.
- * To increase income equitableness among the following groups: landless farmers, landowners, and small farmers.
- * To increase community participation in the development process.

These aims are achieved through the efforts of social organizers who provide information, explanations, and guidance, to assist the development of the communities. There are now 85 self-reliance groups with a total membership of 3,190 people.

Farmers usually have a very limited role in irrigation development and often take little responsibility for system maintenance. Many facilities which have been well-constructed according to technical standards have a shorter life than planned as a result of insufficient maintenance. It has also been observed that certain irrigation facilities (structures/canals) remain unutilized, because they do not satisfy farmers' needs. This has been recognized as due to an insufficient sense of ownership, which is the result of farmers being uninvolved in the planning and implementation of the development of the system.

Negative results may be prevented in the future by increasing farmer participation. To obtain such participation social organizers who will live among the farmers are needed to carry out the following actions:

- * Motivating the farmers to participate in all stages of development of the pump-irrigation system.
- * Developing the farmers' organizations.
- * Identifying the farmers' needs and desires and communicating them to the technical planners, as well as submitting project suggestions to the farmers.

In Subang the social organizers carried out the above actions by applying the following basic strategies:

- * Improvement of technical design based on farmers' expressed needs.
- * Helping the water users' associations with organizational development, including identification of objectives, historical background, area location, membership, organization structure, and financial and administrative procedures.
- * Providing continuous technical assistance for institutionalization of water users' associations through extension, baseline-data collection, participatory planning and recording, and evaluating and monitoring.

It should be noted that project success is determined to a considerable degree by community participation and the quality of the social organizer. The social organizer who could be of either sex should have the following qualifications:

- * An agricultural field-worker background.
- * Age between 22-30 years.
- * In good health and preferably not handicapped.
- * Ability to communicate; to be creative, flexible, and logical.
- * Passed the social-organizer training carried out by the *Pusdiklat* (The Education and Training Center) of Bina Swadaya.
- * Ability to speak in local dialects which is an added advantage.

ADVANTAGES OF THE PROJECT

Income Generation

From the point of view of landowners, irrigation permits the harvesting of two crops of rice per year as compared with only one when unirrigated. For landless farmers income is increased when two rice crops are harvested per year. This group may also produce a non-rice crop in the third season of each year.

Increased Employment Opportunities

The increased productivity of the land permits more workers to be absorbed into the local agricultural activities, reducing problems of urban drift.

Equitable Income

Landless farmers are able to raise a third crop under irrigation in the dry season without paying additional rent, thus increasing their annual income. This contributes to more equitable income distribution in the region.

Increased Participation in Development

A package of education, training, and guidance offered to local groups on a regular basis increases their knowledge and skills. This process helps to increase their level of participation in community matters.

The training program is organized on two levels:

- * Promoter level: To stabilize the promotion of self-reliance groups, with 15 promoters (local volunteers) from the project-fostered villages trained in a special course.
- * Group level: Training by subject, with several courses already held in all of the fostered villages, encompassing basic accounting, leadership, and management, as well as various vocational courses.

As a final note, the success of this project depended on community participation. This was made possible through:

- * The involvement of formal and informal personages in motivating the community.
- * The quality of social organizers, especially their perception, commitment, and skill.
- * The benefits expected by the farmers if this project is successful.
- * Community involvement from the planning stage.
- * Confidence in financial management instilled in the community during physical project implementation.
- * The presence of field promoters residing in fostered areas.
- * The sense of belonging which grows and is fostered among the project beneficiaries.

Community-Based Irrigation Management in Laos

W.R. Ireson[§]

IRRIGATION DEVELOPMENT IN THE LAO PDR

AGRICULTURAL DEVELOPMENT HAS been a priority for the Lao government since the establishment of the Lao PDR in 1975 and irrigation has been given an important role in this process. However, priorities for irrigation development have changed during the intervening fourteen years, particularly as the National Irrigation Department has matured. During the first five years after the revolution irrigation development emphasized relatively large schemes which turned out to be beyond the engineering and construction capacity of the government. With the promulgation of the first Five-Year Plan in 1980 official policy was modified to emphasize small-scale projects in all sectors. In irrigation, the response was to begin a mix of projects ranging up to about 1,500 hectares maximum. Since 1985, foreign assistance to the National Irrigation Department from a few nongovernment organizations for village-scale irrigation projects has led to the incorporation of such small schemes into ongoing plans for irrigation development. To date, there have been no systematic efforts to incorporate community-organizing principles into irrigation-development programs, but there are examples of traditional community-managed irrigation systems in Laos which may provide models for government-sponsored community-managed irrigation development.

In 1985, the American Friends Service Committee began a program of assistance to small-scale irrigation development in the more mountainous regions of Laos. Development emphasized the replacement of seasonal weirs with small permanent-diversion weirs which would supply water to existing canal systems. Labor for most of the American Friends Service Committee projects was provided by the villagers involved with technical supervision by provincial irrigation technicians. This program gave no specific consideration to the need to

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organize farmers for irrigation management. In villages where farmers had been caring for a traditional irrigation system the new resource was incorporated into the existing system with minimal difficulty. However, where the new weir required several villages to cooperate in a larger irrigation network or involved the introduction of irrigated rice farming to groups which had previously grown swidden crops, significant difficulties in operation and maintenance were encountered (Ireson, 1988). The National Irrigation Department and several provincial irrigation departments have now recognized the need for a holistic approach to small irrigation development which includes farmer involvement in design, construction, and operation and management of headworks and canals. However, few changes have as yet been implemented.

This paper outlines the present pattern of village-irrigation management -- Irrigation Department interaction in the development of small-scale irrigation -- and finally discusses changes and new directions in the Lao government's approach to village-irrigation management.

INDIGENOUS PATTERNS OF IRRIGATION MANAGEMENT

In many parts of the country, particularly in the mountainous north, traditional irrigation schemes have existed for many decades. These systems usually consist of a temporary stone or wood-and-earth weir across a stream which diverts water during the rainy season into channels leading to nearby rice fields. The weirs must be repaired several times each year after damage by heavy rains; thus a system of local labor mobilization has been developed to carry out the repairs, as well as the more routine annual maintenance. Few traditional systems serve more than one village. Irrigation-system leaders are frequently men who have other responsibilities in the village government. Changes in the organization of village governments under the new Lao regime have not much affected the positions or responsibilities of such traditional irrigation leaders. Although terminology used for officers and activities varies, in general, these traditional systems operate much like the northern Thai systems described by Sirivongs (1983).

The following principles and practices seem to be common among northern Lao village-irrigation systems. Water is allocated in proportion to land area and distribution is usually accomplished by proportional outlets. Households receiving irrigation are expected to contribute labor whenever necessary for maintenance and repairs, but seldom cash. Leaders of an irrigation group seldom receive pay or compensation for their work; when they do, it is usually in the form of a rice contribution from the members. Written agreements governing the operation of the system and members' responsibilities are unknown. Irrigation leaders tend to be informally selected and hold office for indefinite terms.

Other than an annual meeting prior to the rainy season regular meetings of the irrigation users do not take place; most organizations keep no written records. The physical operation of Lao-irrigation systems is also rather casual. Water-division points are usually calibrated roughly only once at the start of the season and head regulators are not employed. Canal maintenance varies greatly, but field channels are often better maintained than main and secondary canals.

INSTITUTIONAL CONTEXT

To understand relationships between Lao villages and the government with regard to irrigation development, it is first necessary to describe briefly the institutional context of government activities. The country is administered through a five-tiered government structure, beginning at the national level in Vientiane, and passing through provincial, district, and subdistrict levels to the village. For the first time in Lao history remote villages are being integrated into a Lao nation. Since the revolution, the national government has taken the position that it is responsible for the development of the country. This attitude is in marked contrast to the behavior of the Royalist government prior to 1975, but at the same time fosters an attitude of paternalism and dependence which inhibits village initiative. Many officials believe that the government must provide all social services and inputs and guidance to development projects. Many villages postpone cooperative projects until government or foreign assistance is received, regardless of their local resources.

At present, however, the government has very limited resources and relies heavily on foreign aid. In most provinces salaries have not been paid for months and local departments do not even have funds to purchase fuel for vehicles to transport aid materials. Administrative rules and procedures are frequently changed adding confusion and uncertainty to program planning and implementation. Human resources are similarly limited. The Vientiane provincial irrigation department, for example, consists of only four technicians and three secretary-clerks, yet is responsible for administering nearly a million dollars of aid yearly.

SOCIAL CONTEXT

Most Lao villages have a long history of cooperation in mutual-assistance projects. This cooperation includes mutual aid during the rice-growing cycle, village-wide assistance at house raisings, weddings, and funerals and village cooperation on community projects such as school or temple construction. Traditionally, community projects were organized under the auspices of the village headman (*pho baan*) and the committee of elders, with perhaps a separate committee for the school or Buddhist temple (*wat*) constituted to handle the details. Since the revolution, the village headman has been renamed village president (*pathaan baan*) and given more clearly defined duties for keeping village statistics and collecting taxes. But most traditional elements of the role are still practiced.

GOVERNMENT SUPPORT FOR VILLAGE IRRIGATION

The Lao government usually becomes aware of possible village-irrigation projects through requests referred from the district to the provincial irrigation departments. Provincial irrigation technicians are then called upon to visit the site and make the first assessment of project feasibility.

If the project appears feasible further technical data are collected, usually in cooperation and consultation with the village leaders. At this stage provincial irrigation technicians perform the survey and design activities, but rely on district officials to introduce them to the village leaders and to facilitate communication with the village. Typically, there is little direct contact between either district or provincial technicians and the majority of the villagers. Rather it is assumed that the village president and the committee adequately represent the desires and priorities of the village. While this is usually the case the full details of discussions between village leaders and the provincial technicians are seldom recorded or relayed to the villagers. This situation can lead to difficulties during construction or operation of the project.

Assuming that the proposed project is approved at the provincial level and that the province has adequate budgetary resources for its construction, an agreement is made with the village committee regarding the division of inputs between the village, the district, the province, and foreign aid. Typically, for village-scale projects, the villagers will be expected to provide all labor for construction (with supervision by a province or district technician) and quite possibly provide form-wood and aggregate for concrete. In some cases the district or province may provide trucks to haul sand and gravel. The government typically undertakes to provide all purchased inputs whether from its own budget or, more commonly, with foreign assistance. Mobilization of workers is left to the village committee which will have convened a general village meeting sometime before work commences to explain the parameters of the work and to secure consensus on the project.

In most village-based irrigation projects the provincial irrigation departments assist or advise only in the construction or replacement of the headworks. It is usually assumed that villagers can design and excavate distribution canals on their own. Larger projects involving more than one village are more likely to have the canal system designed by the Irrigation Department. Water allocation and distribution are also left to the village. Rarely has the Irrigation Department consulted with villagers to advise them on procedures for water distribution. Consequently, some systems are well-organized with equitable distribution while others have only ad hoc distribution with high degrees of conflict and water stealing.

Upon completion of a construction project the village is left to manage it as best it can. Where a traditional temporary weir is replaced by a permanent structure the preexisting management organization usually continues with little modification, though perhaps with gradual expansion of the canal network over several years to take advantage of increased water availability. Where the village has had little prior experience with irrigation, the development of a canal network and of an operation and maintenance system may take many years and may never be completed to the extent originally planned. Because of national priorities for the expansion of irrigated area by the construction of new systems and due to poor monitoring of the performance of existing schemes irrigation cadres are regularly transferred to new projects, and are unable to devote the time

necessary to improve the performance of existing schemes. Lack of transport and per diem expenses while in the field also inhibit district cadres from spending the time necessary in a village to assist farmers to improve irrigation management. Some of the smaller pump schemes near Vientiane are an exception to this generalization.

In sum, the Lao government involves villagers in small-scale irrigation development by working through the existing government structure. Irrigation cadres work most closely with village leadership and have little direct contact with the majority of farmers. They assume that village leaders will mediate in the project and facilitate accurate communication between the village and the district or provincial government. The accuracy of this assumption depends on the ability and motivations of the village leaders. Little support or follow-up of projects is possible, however, once initial construction is completed, and for all practical purposes villages are left to their own devices for the management of their irrigation system.

EFFORTS TO IMPROVE SMALL-SCALE IRRIGATION MANAGEMENT

The National Irrigation Department and many provinces are now becoming aware of deficiencies in village operation and maintenance, and some have started plans for operation and maintenance-training sessions. Probably the only systematic effort in this sphere has taken place at the Operation and Maintenance Training Center attached to the Lao-Australian Irrigation Project in Vientiane. There, over 300 people have been trained in short courses over the last four years. The training is oriented mainly to pump operation and to pump and canal maintenance rather than to water allocation and delivery, or system management. There has been no follow-up of trainees to learn whether they have been assigned to irrigation projects or how successfully they have applied their training.

Recently, the National Irrigation Department has begun a project in Vientiane province to rehabilitate small-scale irrigation systems with assistance from Community Aid Abroad, an Australian nongovernment organization. This program will include explicit work with village-irrigation organizations and support for training of provincial and district irrigation technicians in community-organizing techniques for irrigation management. In addition, workshops in the villages will focus on strengthening indigenous irrigation groups and on improving overall-system management. As this project has just begun, it is too early to predict its impact. The content of the training courses and village workshops has not been fully developed but it is likely that the organizational approach will rely on local leadership patterns as described above. Any organizational support for village-irrigation groups must come from the district irrigation cadres who already have many responsibilities and few resources. Specialized community organizers for irrigation will not be a possible strategy. Rather the village-irrigation committee, or village-administrative committee will be the focal point of any training and organizing activities. Advice regarding technical issues of water distribution and system maintenance as well as suggestions for organizational changes, designation of specialists at the village level (ditch inspectors, etc.), and the development of a maintenance fund, will undoubtedly be directed through that committee, and not by direct contact between officials and farmers.

THE OUTLOOK

The prognosis in Laos for improved irrigation management through farmer participation is rather mixed. The present situation shows both positive and negative factors. On the positive side, the Lao government policy encourages cooperative and community-wide activities, particularly in agriculture, and supports two-way communication between local groups and the government. In contrast to many countries there are no social or institutional obstacles to organizing farmers into groups which effectively represent local interests. There is no landed elite, for example, to oppose farmer groups that might question rules for water distribution.

On the other hand, despite a favorable official and social environment for farmer organizing no resources are allocated to active support of farmer organizations. The Cooperatives Department in the Ministry of Agriculture and Forestry has been disbanded and the ministry has no effective agricultural extension service. Local nongovernment organizations which engage in community organizing in some countries do not exist in Laos. At present, any community-organizing work must be done by district officials whose approach is usually to convene a meeting of the village leaders and discuss the problem in a formal setting. Usually the issues discussed are those defined as problems by the government, rather than by the village. Whatever action is taken is directed toward solving that particular problem rather than to developing a generalized resource for solving this and future problems. No theory or model of community organizing is available to the government cadres other than that of working officially through village-administrative committees.

A positive factor for strengthening community-managed irrigation organizations is that most villages are solidary, with minimal conflict or factionalism, and led by a respected local president. Villagers are used to cooperating on specific community projects, as well as to participating in family-centered mutual-assistance activities; and customary norms of fairness and reciprocity associated with these activities can be incorporated as principles of water users' groups. Systems which extend beyond the limits of a single village are more problematic, however, as there is no clear model for organizing locally managed multi-village irrigation systems. Virtually all multi-village systems which have received government assistance are managed, at least on paper, by the district agricultural service. Similarly, there is no clear policy on handing over completed projects to the community to manage on its own. The unclear status of such projects leads to confusion as to who is responsible for enforcement of rules, or for maintenance. When government assistance goes to improve an indigenous irrigation system this lack of clarity could lead to the disruption of a previously functioning village organization.

While Laos appears to have a high-inherent potential for the effective development of community-based and farmer-managed irrigation systems, there are numerous limitations of manpower, knowledge, and basic administrative resources which inhibit such development. The National Irrigation Department, which is the only agency involved in irrigation development in Laos has begun to take steps to improve irrigation management through farmer participation, but how widespread and how effective these efforts will remain to be seen.

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Role of Social Organizers in Assisting Farmer-Managed Irrigation Systems: The Case of the Agricultural Development Bank of Nepal

D.B. Bajracharya[§]

BACKGROUND

SINCE ITS INCEPTION the Agricultural Development Bank of Nepal has been actively involved in the development of minor irrigation schemes as a means of increasing food-grain production. However, planned implementation of minor irrigation development began only after 1980/81. Minor irrigation includes community gravity-irrigation schemes within the Small-Farmer Development Project areas and individually owned shallow tube wells, rower pumps, etc.

The Agricultural Development Bank of Nepal and CARE/Nepal began joint implementation of community gravity-irrigation schemes in 1983/84 within the Small-Farmer Development Project areas to assist subsistence and marginal farmers to increase their agricultural production. Such schemes are now being implemented outside the Small-Farmer Development Project as well.

While the Agricultural Development Bank of Nepal extends credit and extension services to all farmers, those farmers living below the absolute poverty line (43 percent) require special attention to improve their status. The Small-Farmer Development Project is the main means to achieve this. Many income-generating activities are in progress and community irrigation (both surface and groundwater) is one of the more effective and accepted programs being applied to alleviate rural poverty.

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“SOCIAL ORGANIZER” IN THE AGRICULTURAL DEVELOPMENT BANK OF NEPAL CONTEXT

In the Agricultural Development Bank of Nepal-supported projects no social organizer is hired specifically to assist farmer-managed irrigation schemes. The Small-Farmer Development Project manager and group organizer is deputed by the Agricultural Development Bank of Nepal to act as a catalyst agent in forming groups and in motivating the farmers in their various socioeconomic activities. In the Agricultural Development Bank of Nepal context the group organizer may be seen as the social organizer.

The group is formed according to the Small-Farmer Development Project rules and regulations. The group organizer identifies interested small farmers and motivates them to form groups. Each group elects a group leader, a deputy leader, a secretary, and a treasurer. The group leader chairs group meetings and acts as an intermediary between the Small-Farmer Development Project, other line agencies, and the group. He assists the group to prepare plans and to conduct social actions. The group leader also calls group meetings as and when required. The deputy group leader performs all the above activities in the absence of the group leader. The secretary calls the group meetings, records minutes of meetings, and handles all correspondence.

THE STATUS OF FARMER-MANAGED SCHEMES IN NEPAL

Farmer-managed schemes cover approximately 500,000 hectares (ha) in the *Terai* (plains) and 150,000 ha in the hills. Farming communities have for long constructed, managed, and maintained irrigation systems in Nepal. Privately constructed irrigation schemes cover a greater area than do publicly constructed ones. Moreover, each year new areas are brought under irrigation through individual and community-based schemes using both surface water and groundwater.

COST-SHARING APPROACHES

A number of governmental, semigovernmental, and private efforts with varying cost-sharing approaches to irrigation development have been tried in Nepal. Each agency has concentrated mainly on developing irrigation facilities through its own organization. Government agencies identify, survey, and design projects and contract out the construction work to the private sector. Once construction is completed farmers within the command area are required to pay fixed

charges for the irrigation services in return for which the Department of Irrigation takes responsibility for maintenance. Farmers' participation in the identification, design, execution, and maintenance of such projects is minimal.

Other government and nongovernment agencies follow different approaches. In projects under the Farm Irrigation and Water Utilization Division (now amalgamated with the Department of Irrigation) grant-in-aid of 75 percent is provided while the farmers contribute 25 percent. The farmers' share may be supplemented by a loan from the Agricultural Development Bank of Nepal.

In projects under the Ministry of Panchayat and Local Development, a lump-sum grant is provided for a particular project. Although the proportion of farmers' participation is not fixed some degree of farmer participation is always required.

The Agricultural Development Bank of Nepal follows several different approaches. For surface-water schemes it provides locally unavailable materials (cement, reinforcement bars, etc.) in the form of grants. This comes to about 50 percent of the total project costs. Of the remaining costs, 30 percent is covered by beneficiary participation and 20 percent through labor contribution. No grants have ever been made available to irrigation projects constructed by individual farmers. For groundwater schemes, no grants have been made except for well-sinking costs not exceeding approximately US\$167 (NRs 3,000) for each shallow tube well.

CURRENT IMPLEMENTATION APPROACH

A common approach has been taken by all government and semigovernment agencies, based on two principles:

- * Obligatory participation of farmer beneficiaries in identification, design, development, and maintenance.
- * The same proportion of grant-in-aid to all projects of a similar nature, irrespective of the implementing agency.

This approach is applied to both group-operated and individually operated surface-water and groundwater schemes.

PARTICIPANTS IN IRRIGATION DEVELOPMENT

Many irrigation schemes have been identified by the Agricultural Development Bank of Nepal at the request of group organizers. The Agricultural Development Bank of Nepal and CARE/Nepal have conducted detailed surveys and have made cost estimates. After discussions with the farmers the proportions of cost sharing, involvement of beneficiaries, and labor contribution have

been finalized. The responsibilities and duties to be carried out by the related organizations are defined as follows:

1. The Beneficiary Farmers: Procurement of materials, management of labor, acquisition of a loan, maintaining records, and assisting in the execution of directives of the technical team.
2. The Small-Farmer Development Project (group organizer): Monitoring of work progress, checking of records, coordinating the construction committee with the beneficiary farmers, helping the technical team to implement the scheme and disbursing the approved loan.
3. The Technical Team: The technical team of the Agricultural Development Bank of Nepal and CARE/Nepal bear all technical responsibility including supervision.

The role of social organizers in developing farmer-managed schemes has been limited till now. Only CARE/Nepal has been involved. In this context, the group organizer identifies the project and prepares a request to the public sector (the Department of Irrigation or the Agricultural Development Bank of Nepal) to carry out a survey and to design the project. The scales of total investment, farmer participation, and farmers' labor contribution are finalized in the course of the project preparation. Following evaluation and approval, a contract is signed between the executing agency and the construction committee working on behalf of all beneficiaries, which includes, inter alia, the provisions made in the implementation guidelines and other modalities of operation. It also includes a binding clause requiring beneficiaries to maintain the works and to make regular repairs to the facilities once construction is completed. The technician involved certifies completion of the construction work and the construction committee hands over the project to the water user's committee.

Farmers' contribution is required from the very beginning of construction work and must be maintained throughout so that the value of the works shall always contain a farmer component, even if actual project costs are ultimately less than the original estimated cost.

An independent organizer is required to identify the project and to mobilize farmers' active participation from the very beginning until project completion. He also helps the farmers to develop the capabilities necessary to take responsibility for the operation and maintenance.

THE ROLE OF SOCIAL ORGANIZERS IN ASSISTING FARMER-MANAGED SCHEMES

At present, the role of social organizer in these projects is limited to the project-implementation stage only. As the resources are entirely under farmer control and require no large bureaucracies there is room to expand the role of the social organizer. More specifically he can contribute in the following areas:

1. Reducing the gap between potential irrigation and actual utilization.
2. Encouraging the farmers to increase production and income by adopting high-value and quick-yielding crops.
3. Accelerating the program of afforestation, restoration of pastures, protection of agricultural land, introduction of soil-conservation measures to prevent soil erosion through runoff, and the control of unrestricted grazing.
4. Discouraging the use of high-capacity pumps which may overdraw groundwater resources.
5. Encouraging farmers to install tube wells in joint ownership so that more land may be irrigated.
6. Identifying measures to conserve the resources and to prevent pollution of surface-water resources and groundwater resources.
7. Mobilizing maximum local resources and the introduction of appropriate technologies.

THE NEED FOR FARMER-MANAGED SCHEMES

The performance of sophisticated public-sector irrigation projects has not satisfied expectations despite heavy investments which amount to US\$2,225 to 3,335 (NRs 40,000 to 60,000) per ha. The major problem in the public schemes is the reluctance of farmers to become involved in their operation and maintenance. Fear on the part of farmers with regard to the financial and technical burdens of the sophisticated systems and their lack of involvement in decision making and planning are the major causes for this reticence. Allocation of low budgets for repair and maintenance results in untimely release of water further shattering the confidence in public-sector schemes. Under these circumstances, farmers are not committed to the systems and are unwilling to pay the charges. This in turn results in poor cost recovery.

Farmer-managed schemes, though unsophisticated in nature, cost only approximately US\$225 to 670 (NRs 4,000 to 12,000) per ha, and constitute effective organization and water-distribution systems. Since the schemes are farmer-initiated a positive attitude towards the scheme is common. The obligatory investment required of farmers and their labor contribution lead to feelings of ownership towards the schemes. This in turn is reflected in repair and maintenance costs of about US\$17 to 61 (NRs 300 to 1,100) per ha as compared to US\$111 to 278 (NRs 2,000 to 5,000) per ha in public-sector schemes.

It is evident therefore that farmer-managed schemes have greater management flexibility and farmer involvement in the schemes reflect the opportunity for quick returns on investments.

CONCLUDING REMARKS

Exploitation of natural and public resources by groups of farmers is a difficult affair. There are numerous legal considerations and various state agencies are involved. It is necessary to maintain close contact and frequent exchanges of ideas and views among the concerned agencies to help modify and improve existing provisions. Furthermore, there are considerations of costs and benefits in developing and maintaining irrigation schemes. The requirement that farmers share in the costs makes it necessary that they should have the power to exclude individuals, who do not share in the costs, from sharing in the benefits. Without this provision jointly owned irrigation schemes will be unable to operate. This is where the role of social organizer becomes pertinent in the development of irrigation schemes. He can contribute most in creating institutions of farmers that can effectively carry out the responsibilities of developing and maintaining irrigation schemes.

Taking responsibility for supervision and coordination together with the curbing of corruption is undoubtedly an awkward job for the social organizer in his role as catalyst agent for social development. The most effective means to achieve this goal is to involve independent internal or external nongovernment agencies to intervene and to assist the farmers to reach the necessary level of awareness.

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Role of Social Organizers in Improving Irrigation Management: The Experience in Nepal

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INTRODUCTION

THIS PAPER ATTEMPTS to highlight the role of social organizers in the process of improving irrigation-system management. The association organizer is employed in the Irrigation-Management Project to identify the organizational dynamics and to act as a catalyst in promoting farmers' participation in irrigation management.

THE ASSOCIATION ORGANIZER AS A COMPONENT OF THE IRRIGATION-MANAGEMENT PROJECT

One of the major objectives of the Irrigation-Management Project and its System-Management Division is "to develop and strengthen the capability of Water Users' Organizations to assume greater responsibility and authority for operation and maintenance of the irrigation system." The Irrigation-Management Project considers that new water user' organizations are not self-generating. Therefore a catalyst agent is required to help farmers organize their own water users' organization. In the Irrigation-Management Project this catalyst agent is called the association organizer. The Irrigation-Management Project has deployed association organizers for the last two years.

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An association organizer is a trained field worker who lives in the user community and assists the users to organize themselves on the basis of their felt irrigation needs and in accordance with objectives set by an irrigation-development program. An association organizer does not replace any technical staff of the Department of Irrigation but rather helps them to be more effective and to improve irrigation-management performance.

THE ASSOCIATION ORGANIZER'S RESPONSIBILITY IN RELATION TO MANAGEMENT TYPE

The duties of an association organizer depend very much on the specific management type targeted by the irrigation-development agency for an implementation site. For example: for the type designated "autonomous-management by user," the association organizer's duty would be to develop the capacity and confidence of the user organization to the point that users should, after a reasonable period of time, be willing and able to take complete responsibility for the management of their system. For joint-management type, the association organizer's duty would be to develop the capacity of the user organization and of the agency to an extent that both should be willing to jointly delineate and share management responsibilities and to mutually recognize the primary roles that each has to play in response to system needs (system operation and maintenance, etc.). This type of management objective is represented by the Sirsia-Dudhaura Irrigation System, the first implementation site of the Irrigation-Management Project/System-Management Division.

The Sirsia-Dudhaura Irrigation System was built in the mid-1950s in Parwanipur, Bara District of Nepal. It was designed to supplement rain-fed agricultural needs and presently commands 1,152 ha in summer and 807 ha in winter.

Before the Irrigation-Management Project the Sirsia-Dudhaura Irrigation System was typical of Terai public-irrigation systems in Nepal which generally suffer from the following problems: 1) deferred maintenance, 2) unpredictable operation and maintenance management, 3) antagonistic relations and lack of communication between agency staff and users, 4) rampant lack of discipline on the part of users reflected in the numerous breaches in the system networks, inter-user conflicts, and might-is-right practices, 5) inequitable water distribution, and 6) nonparticipation of users in any system-management activities.

The Irrigation-Management Project fielded association organizers in this system on 8 April 1987 with the purpose of strengthening the water users' organization and enabling it to resolve and overcome the above problems.

RECRUITMENT OF ASSOCIATION ORGANIZERS

To expedite the process of strengthening the water users' organization the Technical Assistance Team decided to recruit association organizers from outside the Department of Irrigation. This became imperative because the Irrigation-Management Project/the Department of Irrigation had no experience or know-how regarding the programs and personnel management of association organizers. Thus association organizers were contractually employed by the Technical Assistant in March 1987.

ASSOCIATION ORGANIZER ROLES

Organizing

For the first six months the association organizers were engaged in preorganizing activities which included their selection, training, and establishment in the field. The association organizers carried out a sequence of activities: building up rapport with the users, convening a sensitization workshop for farmer representatives and local staff, collecting and documenting information reflecting the relationship between the user and the irrigation system, and preparing lists of users. After these steps were completed association organizers initiated the process of forming a water users' organization.

The association organizers helped to organize the sensitization workshop by identifying farmer participants and ensuring their participation in the workshop. The objective of the workshop was to introduce the participants to Irrigation-Management Project objectives and to the water users' organization process, and to bring to the surface the main issues in local-irrigation system management. This helped both the water users and the agency staff to plan subsequent assistance activities.

The association organizers helped the water users to form a two-tiered water users' organization; 15 user *tolis* (groups) at the branch/village level and 1 system-level user *sangh* (association). The dominant mode used by the association organizers in forming *tolis* was mass assembly. Patterns of *toli* formation differed. In one area a *toli* was formed by consensus. In another area *toli* formation was accompanied by full-scale electioneering. In one tail-end area it was very difficult to form *tolis* as feudal polarization was sharp. Farmers were not convinced that a water users' organization could cut across this polarization and facilitate distribution of irrigation water. In another area users were afraid of governmentalizing their own adjacent irrigation system and thus did not want to join the *toli*. To promote user organizations in this difficult situation association organizers selectively approached local influential persons including politicians to make positive contributions to the organization process. At a later stage association organizers helped form a water-user *sangh* at the system level.

Resource Mobilization

The association organizers motivated users to develop cleaning and maintenance practices for field channels, sub-field channels and at certain points, for branch canals. In some places tolis built new field channels. For these activities tolis mobilized user resources in kind, cash, and labor. Establishing rules and applying them institutionally promoted equity in resource mobilization as well as in water distribution.

The association organizers helped user tolis first to identify essential structural improvements needed in their respective areas and then to prioritize them. They facilitated agreement between the agency and tolis on essential structural improvement works. The essential structural improvements agreement entitled tolis to appoint contractors for works of less than approximately US\$513 (NRs 10,000).

The association organizers then assisted tolis to open bank accounts for the organized and accountable management of toli resources gained from contractual works, from fines, and from other types of mobilization. Toli-appointed contractors, as per their commitment to contribute 10 percent, deposited 60 percent of the amount of essential structural improvement works payment owed to the toli fund.

The association organizers made efforts to channel users' ideas into the process of watercess (water tax) assessment by the land surveyor, as this mechanism was an essential element in the accuracy of watercess records. In April 1987 when the association organizers were first fielded, farmers' complaints against wrong and arbitrary assessment of watercess were very common. A sample survey done by association organizers in January 1989 (the second year of the Irrigation-Management Project assistance in the Sirsia-Dudhaura Irrigation System) showed that an overwhelming majority of water users paid their watercess for 1987 while only a small percentage was dissatisfied with the assessment work.

Organization Development

The association organizers assisted in identifying farmer trainees for Irrigation Management Centre-sponsored farmer-to-farmer training. They then helped organize user-community meetings to disseminate the lessons learned by those users who had participated in the training sessions. The association organizers also provided support in knowledge-building and sharing through inter-toli mobilization. In this process, they mobilized members of better performing tolis to assist those less effective.

Those user-toli representatives who received training began to gain an appreciation of the benefits which an effective user organization could bring to them, such as equitable distribution of scarce irrigation resources and a cost-effective system.

Communication

The association organizers helped in promoting organizational communication. Individual users have started airing their grievances related to their access to water, through tolis. This kind of communication has promoted equity in system-resource distribution. The agency has also made it a point to entertain only those petitions for water access that come through the tolis. Thus, concerned association organizers have facilitated the development of a system whereby representatives of areas formally outside the command area, but who previously received water, may request water when it does not jeopardize toli members' legitimate interests. Besides this kind of agency user communication, user tolis have been using traditional village *chowkidars* (watchmen) to communicate toli messages to the general user-members.

Through regular monthly meetings of the sangh, association organizers have helped user representatives and field-agency staff to start a dialogue on operation and maintenance issues at the system level itself. For instance, during the water-stress period the sangh may decide in favor of a rotational water-distribution system and ask the field agency to cooperate. The sangh may question the appropriateness of the field-agency decision regarding stoppage of water delivery on a date unilaterally fixed. The field agency might want to stop water delivery for some construction works. The sangh would consider this point and finally a date for stopping water delivery would be mutually agreed upon.

Conflict Resolution

The association organizers have facilitated development of norms to resolve conflicts resulting from undisciplined behavior of user members. For instance, "Khotuwa-toli" reported that they penalized a member who while irrigating his field had flooded his fellow user's crop field. The wrong-doer paid compensation to the user whom he had harmed at the rate fixed by the toli.

Water Distribution

The association organizer helped tolis to understand the importance of water-measuring devices and the need for tolis to protect them. It has been noted that where this has been promoted water-use efficiency has increased. In the Harpur area at the head of Dudhaura system users now irrigate their land in a shorter time. Users at the tail end now receive water earlier and more reliably. Similarly, tail enders of Bahuwary in the Sirsia command area state that after several years of suffering from insufficient quantities they now receive a satisfactory water supply. This is probably one of the most visible impacts of field-channel cleaning and maintenance by the users. Users have been able to see a direct relationship between their actions in maintaining field channels, in more efficient water use, and in the greater equity in water distribution.

The effectiveness of user organizations in mobilizing resources for channel maintenance has resulted in expanded coverage of wheat crop in the command area. The user toils of Tajpur, Ramur, and Mushahari joined hands to clean and maintain field channels as well as certain portions of the branch canals from the Sirsia Trifurcation, a point which was considered the most critically chaotic in the diagnostic analysis made by the Colorado State University (1985), in terms of water allocation and distribution.

The agency and the sangh have decided in favor of a rotational water-distribution system for the wheat crop on an experimental basis. This experimental rotational water schedule was first introduced in the Sirsia-Dudhaura Irrigation System where it was monitored by the association organizers who provided suggestions to both the agency and the sangh on how to improve on it.

Agriculture

The association organizers have assisted in introducing the Block Production Program using mini-kit demonstrations with a view to integrating this program with tasks such as water scheduling. They have also assisted in identifying, locating, and interviewing farmers for crop-cutting surveys. The association organizers and farmers have estimated that after the Irrigation-Management Project, crop production in the Sirsia-Dudhaura Irrigation System area increased by 25 percent.

ASSOCIATION-ORGANIZER TRAINING

There are various types of association-organizer training which are differentiated according to job experience, job position (supervisory or regular), transfer from one irrigation system to another, and the management objectives to be achieved. The association organizers' training can be divided into three broad categories: pre-job training, on-the-job refresher training, and on-the-job transition training. Besides this training, eligible association-organizer candidates receive supervisory training. To be eligible, an association-organizer candidate for supervisory training should 1) have worked at least six months in the field as an association organizer, and 2) demonstrate certain managerial qualities.

Apart from the formal training provided to association organizers under the Irrigation Management Centre auspices, field-refresher sessions of a few hours duration each are regularly conducted. In these sessions, association organizers raise issues and problems which they have encountered in the course of implementing the monthly tasks assigned to them, plus the ongoing programs in the field. A resource person, usually a member of the water users' organization development staff, conducts these sessions.

FIELD SUPERVISION AND FOLLOW-UP

To continuously gear association organizers towards achieving the set management objectives intensive supervision and field follow-up mechanisms are necessary. The water users' organization section staff supervises and maintains this system in active cooperation with the field-agency staff.

For this purpose a task-oriented approach has been adopted. Under this approach, association organizers are assigned certain tasks each month. These tasks are defined after monitoring the monthly field activities through association organizers' reports, monthly meetings, internal weekly meetings, and refresher sessions. This approach enables identification of emerging system-management needs. The task-oriented approach helps concrete the association-organizer responsibilities and roles in a practical manner. Each association organizer must report on progress in implementing the tasks assigned to him each month. In this report he describes how he interacted with the users, the user organizations, and the agency-field office as per the tasks, what constraints he faced in implementing the tasks, how the constraints were or could be resolved, and what was achieved in each task.

INDICATORS OF ACHIEVEMENT

The association organizers have helped the Irrigation-Management Project to accomplish the following:

- * User resources have been institutionally mobilized for system maintenance.
- * Communication between agency-field offices and users has improved and is being formalized. This is reflected in the preparation of water schedules and in increased responsiveness in the dealings between agency and user organizations.
- * User-organized participation in system improvement, in identification of needs, and in the construction process were initiated with essential structural improvements assistance.
- * Water-use efficiency in the system has increased. The area planted to wheat in the winter season has increased over the previous year and the potential area has expanded to include the tail-end area.
- * Breaches in the system have been reduced.
- * The number of inter-user water conflicts has decreased as tollis have undertaken management of water distribution.
- * The number of petitions complaining against "wrong" assessment of watercess has decreased.
- * The ratio of user representation in water users' organization in the Sirsia-Dudhaura Irrigation System is 1 representative to 11 water users for a total of 197 user representatives. This is about one person per six hectares. The water users' organization has intensified supervision as well.

IMPROVING IMPLEMENTATION

Lessons from the Sirsia-Dudhaura Irrigation System show that association organizers can play their role more effectively if the following issues are given adequate attention:

- * Setting more practical construction targets which take into consideration the institutional-development needs and the management capacity of the users and agency staff.
- * Recognizing the construction process as an opportunity for developing operation and maintenance processes and planning accordingly.
- * Initiating interunit coordination between the water users' organization operation and maintenance, and monitoring, evaluation, and feedback sections.
- * Expediting collection of systematic information about water measurement so that the necessary information is in place to develop an operational plan.
- * Achieving balance between project agency and field office by delegating adequate authority and resources to the field.
- * Training association organizers in courses on bureaucratic behavior and agency staff in interdisciplinary courses to facilitate their progressive reorientation from the purely technical to include social issues in irrigation management.
- * Determining the hydrological boundaries of each section of the command area prior to organizing activities to satisfy the needs of both operation and maintenance and water users' organization.
- * Staffing the System-Management Division with a director who is trained to apply an integrated system-management approach to the System-Management Division operations rather than a single-sector orientation such as construction, monitoring, evaluation, and feedback, or water users' organization.
- * Not awarding contracts for construction to the farmers of public-irrigation systems while they are at the stage of getting organized. Contract awards at that point tend to transfer the agency-construction bias to the farmer community. This distorts the integrity of the farmer-organizing process.

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Role of Social Organizers: The Aga Khan Rural Support Programme for Irrigation Infrastructure Development, Gilgit

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INTRODUCTION

IT IS THE aim of this paper to highlight the role of social organizers in assisting farmer-managed irrigation systems in the mountainous regions of the northern areas of Pakistan which are federally administered by the Government of Pakistan. The focus is the development and changes in system management stimulated by the intervention of the Aga Khan Rural Support Programme in Gilgit District. This paper is based primarily on the experiences and observations of the authors made during the six years of implementation of the Aga Khan Rural Support Programme packages. This program is also operational in the Baltistan District of the northern areas and Chitral District of the North Western Frontier Province.

DESCRIPTION OF THE AREA

Gilgit, the headquarters of the program, is located about 600 kilometers (km) north of Islamabad where the Karakorum and the Himalayan ranges meet. The whole district lies in the rain shadow and the valleys receive barely 10.16 centimeters (cm) (4 inches) of precipitation per annum, while at higher elevations of approximately 4,575 meters (15,000 feet) above sea level precipitation in

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the form of snow, reaches 25.4 cm (10 inches). The topography of the area is such that the rivers flow in deep gorges far below the arable lands, most of which consist of alluvial fans. The perennial Nallahs (streams) and rivers in the northern areas of Pakistan are fed primarily by glacier melt while snow melt helps increase the runoff a hundredfold during short periods in the summer. Almost all the irrigation systems in these mountain areas depend on the Nallahs which serve as tributaries of the main rivers. The variation in discharge between the minimum and maximum flows is extreme and occasionally the flow dries up completely or totally freezes in the winter. These enormous variations in water supply pose a challenge to the economic design of headworks. Most of the channels from the Nallahs in the region are gravity-fed.

The success of the channels depends on a combination of local wisdom and modern engineering techniques. Some villages even now use traditional methods of water flow for determining the correct gradients. Theoretically worked out gradients have, in most cases, resulted in failure. The velocities of small channels, calculated in the office, have no capabilities for silt-clearing or for minimizing the scouring due to variations in rock formations. Similarly, variations in climatic conditions such as freezing and thawing play an important role. One has to learn when to close the channel and when to reopen it without causing excessive damage during thawing. All this requires experience and local knowledge.

HISTORY OF IRRIGATION IN THE AREA

In the past the areas on both sides of the Himalayas and Hindukush ranges were ruled by local chieftains. The treasuries of the rulers depended heavily on the taxation of water and agriculture. It was in their interest that agriculture should flourish and as a result available land was exploited to the maximum. The pockets of population ruled by these chieftains were secluded and had a very closed economy. The chieftains used their feudal authority to motivate and mobilize the people for construction and operation and maintenance of irrigation channels.

This arrangement was possible because a sufficient surplus of cheap labor was available. The local populace could be easily motivated to work without pay, in return for a piece of land to add to their declining resource base. In the late nineteenth century when the British administration took over the northern areas and opened access to the outside world by constructing roads, more lucrative job opportunities became available. Simultaneously, an increase in population put pressure on the existing arable land. Taxes on water and agriculture declined. The feudal lords could not sustain their authority under these conditions and in 1974, their control of the area was formally abolished by the Government of Pakistan.

When the traditional rulers were removed no alternative for construction and operation and maintenance of channels was introduced by the government. As a result, no new channels were constructed and existing ones fell into disrepair. It was at this stage that the Aga Khan Rural Support Programme began a program of development of institutional and physical infrastructure. The primary objective of the Aga Khan Rural Support Programme has been to facilitate the development of strong and broad-based village organizations which would undertake a wide range of rural activities on a permanent and sustainable basis.

The Aga Khan Rural Support Programme encouraged each village to identify and propose a productive physical-infrastructure project which would increase the incomes of the majority of the constituents of the village organization. It was the process of collectively identifying, proposing, planning, and implementing a productive physical-infrastructure project, such as a water channel, which strengthened the village organization, and started it on the path which ultimately led to managing all development activities of the village. The water channel thus constructed served as an entry point for subsequent development work in the village in addition to the direct income which it generated.

The role of the social organizer in the process described above has been pivotal. He helped the village organization to conduct meetings. During the process of productive physical infrastructure project identification, he ensured that at least 75 percent of the members attended such meetings so that equitable sharing of resources was ensured. At this crucial stage the social organizer had to be vigilant and resourceful to obtain all the basic information of the village, through a rapid appraisal. Without this it would not have been possible to create an active and cohesive village organization.

The social organizer's role during the survey and investigation of the project was equally important. He organized meetings and consulted village elders to obtain technical information such as flood levels, maximum and minimum discharges, and slides and stability of rocks. He passed this information to the engineering section for the preparation of estimates and for drawing conclusions. He facilitated meetings and exchanges of information between the technicians and villagers. While settling terms of partnership between the Aga Khan Rural Support Programme, and the village organization he again arranged meetings, explained the mode of participation, and clearly described the responsibility of the village organization so that no ambiguity remained.

The Aga Khan Rural Support Programme has given new meaning to the concept of participation of villagers in project implementation. Traditionally, government departments and other development agencies have defined participation as villagers' hypothetical cash contribution through their unpaid labor in the project. In the Aga Khan Rural Support Programme-terms participation involves the villagers' willingness to organize capital through savings, to agree to upgrade their skills, to undertake responsibility for identification, planning, and implementation of the project, and ultimately for management and operation and maintenance of the productive physical-infrastructure project after completion.

Once the terms of the partnership were settled and implementation started the social organizer helped teach maintenance of accounts and keeping of muster rolls, and provided guidance in setting up stores and in maintaining machinery and equipment. He thus served as a liaison between the village organization and the Aga Khan Rural Support Programme. The social organizer helped the village organization in the submission of progress reports through village-organization resolutions and arranged cash disbursements. The social organizer was, and remains, a contact between the village organization and the technical sections. Whenever technical inputs are required he arranges meetings between the two.

MAINTENANCE AND MANAGEMENT OF CHANNELS

Once a project is completed under the auspices of the Aga Khan Rural Support Programme the social organizer ensures that adequate arrangements are made by the village organization for proper operation and maintenance of the channel. The village organization must formally decide on the necessary arrangements for normal and emergency repairs and maintenance. The social organizer arranges meetings on such subjects and facilitates decisions, fixing full responsibility for maintenance on the village organization. The villagers, of course, also have their traditional arrangements and systems of maintenance.

At the crucial stage of *warabandi* (water sharing) the social organizer acts as mediator. In this process he imposes no decisions on the village organization but acts to ensure an equitable distribution of water. He also makes certain that formal decisions are taken so as to prevent future disputes. For the total and satisfactory management of the channel it is imperative that there be an active, cohesive, and self-reliant village organization. The Aga Khan Rural Support Programme directs all its interventions and preconditions its support in terms of finance and technical advice to enhance the effectiveness of the village organization. The social organizer, being the eyes and ears of the program in the field, focuses his full attention on the affairs of the village organization including proper management of the channel, equitable distribution of new land, and its sustainable development and proper land use, with the technical support of the Agriculture Section. The social organizer plays an important role in resolving disputes connected with land distribution and promotes timely land development.

Development of new land in most cases requires financing. This is provided to the village organizations in the form of medium-term loans for a maximum of five years. To obtain this loan the village organizations must pass resolutions in the presence of 75 percent of the members. At this meeting the village organization decides on the development plans, financing requirements, allocation of specific areas for different purposes, and on the implementation program. In this process the social organizer maintains very close contact with the village organizations. On the recommendation of the social organizer land-development loans are approved and the sums disbursed. Before recommending such loans the social organizer ascertains the capability and capacity of the village organization to utilize the loan and to repay it on time.

The role of the social organizer is varied and is crucial in identification, appraisal, approval, implementation, maintenance, and management of the productive physical-infrastructure project and at subsequent stages, in the distribution of new land, in land-development planning, in land utilization, in water sharing, and in the approval and recovery of loans. He performs the role of motivator, planner, facilitator, mediator, and manager in the Aga Khan Rural Support Programme methodology of rural development.

The success of the Aga Khan Rural Support Programme interventions in irrigation, as in all other fields, depends on the proper mix of scientific skills and traditional knowledge. Technicians tend to stress the technical point of view whereas villagers trust more in their traditional knowledge. It is up to the social organizer to ensure an appropriate blend which is acceptable to the villagers and which satisfies the technician. This is achieved through a series of dialogues arranged by the social organizer which sensitizes the technician to villagers' concerns and makes the villagers understand and benefit from scientific knowledge.

Role of Social Organizers in Communal Irrigation Development in the Philippines

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INTRODUCTION

THE PARTICIPATORY-APPROACH PROGRAM for developing communal-irrigation systems in the Philippines applies the concept of combining financial and technical assistance to farmers with obtaining their maximum participation in the planning, design, construction, and in their eventual assumption of operation and maintenance of the completed systems. This concept evolved from the unsatisfactory experiences of constructing communal-irrigation systems through the "dole-out" method of assistance in the 1950s to the early 1970s. These were designed and constructed without farmers' involvement. They were poorly operated and maintained and their costs were not repaid. These contrasted with the centuries-old, indigenous, farmer-built irrigation systems which are operated and managed by strong and cohesive farmer organizations without state intervention. The following are the general lessons derived from case studies of some indigenous farmer-built systems (Siy, Jr., 1989):

1. The collective effort to build the irrigation system and subsequently to maintain it resulted in a strong sense of ownership of the system.
2. The physical and institutional aspects of the irrigation system evolved simultaneously.
3. Over a period of time the organization developed the ability to find specific solutions suited to local circumstances and resources.
4. These associations nurtured leadership skills.

The Participatory-Approach Program was pilot tested by the National Irrigation Administration in two systems in 1976 and in two other systems in 1979. The Program was expanded to 14

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systems in 12 regions in 1980 and further expanded to 25 systems in 1981 and to 108 in 1982. In 1983, the Program was applied in all National Irrigation Administration-assisted communal-irrigation systems. At present, there are already 1,694 systems with an area of 232,163 hectares (ha) that have been completed under this Program.

An impact evaluation study conducted for National Irrigation Administration's Participatory-Approach Program (de los Reyes and Jopillo, 1989) indicated better performance compared to non-Participatory-Approach Program systems. Irrigation facilities constructed under the Participatory-Approach Program are viewed by farmers to be more functional, systems are more productive (with greater increases in rice yields and in irrigated area during the dry season), and the irrigation associations are stronger.

PHASES OF IRRIGATION DEVELOPMENT AND ACTIVITIES OF THE IRRIGATION-COMMUNITY ORGANIZER/IRRIGATION-ORGANIZATION WORKER

Investigation and Selection Phase

The work of the Irrigation-Community Organizer/Irrigation-Organization Worker fielded as profile writer during this phase could be compared to that of a researcher. The Irrigation-Community Organizer/Irrigation-Organization Worker collects data and information that are used in determining the institutional feasibility of a project or system. This is done through the development of a project-institutional profile. These data are used to select and prioritize projects to be implemented. The profile is also used by the Irrigation-Community Organizers/Irrigation-Organization Workers to develop their intervention strategies prior to deployment in the project area.

Preconstruction Phase

Six to nine months before the start of construction an Irrigation-Community Organizer/Irrigation-Organization Worker is fielded in the project area to facilitate organization of the farmers into an irrigation association. The following are the different institutional activities undertaken by the Irrigation-Community Organizer/Irrigation-Organization Worker during the preconstruction phase:

- * Integration with the community.
- * Social investigation.
- * Facilitating farmers' meetings.
- * Mobilization of farmers.

- * Formation of preconstruction committees.
- * Right-of-way negotiations.
- * Membership recruitment.
- * Securities and Exchange Commission registration.
- * Water permit application.
- * Presentation of project-development scheme.
- * Conducting of preconstruction conferences to discuss and formulate the National Irrigation Administration and the Irrigation Association policies for construction, to discuss provisions of the Memoranda of Agreement, and present the final system design.
- * Training of irrigation-association officers and selected members.

Construction Phase

After the signing of the Memoranda of Agreement construction may start. In this phase, the Irrigation-Community Organizer/Irrigation-Organization Worker role centers on facilitating the participation of the Irrigation Association in system construction and in strengthening the leadership and decision-making capabilities of the association. The Irrigation-Community Organizer/ Irrigation-Organization Worker also acts as coordinator between the Irrigation Association and the technical staff for discussion of issues that crop up and as mediator or facilitator during such discussions. The Irrigation-Community Organizer/Irrigation-Organization Worker would also continuously provide advice or suggestions on what the Irrigation Association should do and constantly remind them of their responsibilities. The activities during this phase include:

- * Creation of additional committees such as
 - 1) quality-control and quantity-control committee,
 - 2) cost-control committee,
 - 3) manpower and inventory committee,
 - 4) equity-generation committee.
- * Procurement of construction materials.
- * Manpower mobilization.
- * Material delivery and issuance.
- * Inventory of materials and equipment.
- * Cost recording.
- * Cost-reconciliation sessions.
- * Equity generation through cash, labor, and materials.
- * Construction of structures and facilities.
- * Test run before the turnover of the system to identify any defects in the constructed facilities and structures.
- * Debugging.

Operation and Maintenance Phase

For system turnover the Irrigation-Community Organizer/Irrigation-Organization Worker facilitates:

- * Irrigation Association acceptance of the final statement of chargeable costs which would become the Irrigation Association loan after deducting the equity generated by irrigation association.
- * Signing of turnover papers.
- * Formulation and signing of the amortization schedule.

Before or immediately after the turnover a training on System Management is coordinated by the Irrigation-Community Organizer/Irrigation-Organization Worker for the Irrigation Association. During training the Irrigation-Community Organizer/Irrigation-Organization Worker often acts as a resource person. The System Management features the preparation of actual Irrigation-Association plans on 1) cropping calendars, 2) water distribution, 3) farm facilities improvement, 4) maintenance, 5) problems of conflict management, and 6) delineation of duties and responsibilities of officers and members on operation and maintenance.

The functions of the Irrigation-Community Organizer/Irrigation-Organization Worker during the operation and maintenance phase are to assist the Irrigation Association in:

- * Mobilization for operation and maintenance of committees such as the irrigation committee, membership and education committee, financial management committee, and audit and inventory committee.
- * Development of operation and maintenance plans.
- * Collection of amortization payments.
- * Record keeping.

The Irrigation-Community Organizer/Irrigation-Organization Worker remains in the project area for two cropping seasons (one year). After the two cropping seasons the Irrigation-Community Organizer/Irrigation-Organization Worker is withdrawn and the Irrigation Association assumes full responsibility for operation and maintenance of the system. The system however, is visited periodically by the Irrigation Technician or Irrigation-Community Organizer/Irrigation-Organization Worker assigned to a nearby project to determine whether the Irrigation Association may need any assistance.

THE IRRIGATION-COMMUNITY ORGANIZER/IRRIGATION-ORGANIZATION WORKER: IDEOLOGY, RESPONSIBILITIES, ROLES, AND POSITIONS

The Irrigation-Community Organizer/Irrigation-Organization Worker acts as a catalyst and facilitator. He assists, advises, encourages, guides, questions, and argues with the farmers but leaves the decision making to the Irrigation Association. He does not do work which the Irrigation Association should undertake but rather guides the irrigation association in realizing its potential in carrying out responsibilities and tasks through group action. An effective Irrigation-Community Organizer/Irrigation-Organization Worker is one who can leave the Irrigation Association after project completion without impairing the stability and capability of the association (National Irrigation Administration, 1985). The National Irrigation Administration's Irrigation-Community Organizers/Irrigation-Organization Workers adhere to the "profarmer standpoint," considering the interests of the farmers as their primary concern.

Responsibilities

1. Assist farmers/irrigators to organize themselves into a cohesive and functional Irrigation Association that can responsibly participate in the planning, design, construction, and eventual operation and maintenance of the system.
2. Coordinate with technical staff to facilitate farmers' participation in all phases of project development.
3. Facilitate assessment of irrigation-community needs and resources. The Irrigation-Community Organizer/Irrigation-Organization Worker initiates discussions of needs and problems thereby training the Irrigation Association in problem-solving and decision-making processes.
4. Facilitate the development, conduct, and evaluation of capability development programs on Irrigation Association leadership, financial management, and irrigation-system management.
5. Monitor and evaluate the progress and status of the Irrigation Association.
6. Prepare and submit periodic progress reports.

Roles

The different roles that an Irrigation-Community Organizer/Irrigation-Organization Worker plays in facilitating irrigation-association organizational development are the following:

Catalyst

- * Helps the irrigation community establish means to achieve its goals.
- * Helps the community to formulate its direction by encouraging local initiatives.

Facilitator or Enabler

- * Facilitates the organization of the Irrigation Association.
- * Helps the farmers to recognize the existing circumstances of their community.
- * Motivates people to express their ideas and feelings.
- * Consistently guides the community to realize its potential and strengths in cooperative work.

Consultant

- * Provides data, technical expertise, and resource materials.
- * Points out community situations and issues.
- * Acquaints the community with experiences of other projects to instruct in useful principles.
- * Provides evaluation and interpretation of the process of collective action.

Change-Agent

- * Helps farmers to realize the need for change.
- * Facilitates farmers' decisions on problems, action planning, and implementation of plans.
- * Guides the farmers in the evaluation and assessment of their progress.
- * Makes provisions to sustain the changes adopted.

Trainer

- * Assists the Irrigation Association in the development of its problem-solving and decision-making capabilities.
- * Facilitates provision of capability-development programs to the Irrigation Association on leadership, financial management, and irrigation-system management.
- * Develops the capabilities of the Irrigation Association in conducting action-reflection sessions for any activity it undertakes, so it should be able to analyze the strengths and weaknesses of its actions and plans, and thus develop the basis for further improvement.

Deployment

Generally, an Irrigation-Community Organizer/Irrigation-Organization Worker in the Philippines is given one base project (either a preconstruction or construction project) and one to two radiation systems (usually operation and maintenance systems or systems under rehabilitation with existing irrigation associations near his or her base) for periodic visits to assess the need for assistance.

Positions

The Irrigation-Community Organizer position was created in 1976 while the Irrigation-Organization Worker position was created in 1986 when the National Irrigation Administration embarked on a crash program in communal-irrigation system development. In the mid-1980s, the continued existence of the contractual Irrigation-Community Organizers was questioned because of a Civil Service rule that persons may be contracted only for a limited period (about 2 years). After that time, the technology should have been transferred to the regular staff of the institution. Because of this, since 1987 the National Irrigation Administration has not hired any additional Irrigation-Community Organizers. All Irrigation-Community Organizer positions vacated since then have remained vacant. In place of Irrigation-Community Organizers the National Irrigation Administration had been hiring Irrigation-Organization Workers on a daily-wage, temporary-hire basis. This, however, presents a problem to the agency. Because of the absence of permanent positions for organizers a large number of Irrigation-Organization Workers and Irrigation-Community Organizers had been transferring themselves to other agencies involved in extension, where they enjoy higher pay and security of tenure. As a result training costs of the National Irrigation Administration are higher, because replacements have to be hired and trained every year.

SELECTION AND TRAINING

The capability and efficiency of an Irrigation-Community Organizer/Irrigation-Organization Worker is a vital ingredient in the implementation of the Participatory-Approach Program. The scope of activity of an Irrigation-Community Organizer/Irrigation-Organization Worker requires a wide variety of skills, knowledge, and ability. To ensure hiring of qualified Irrigation-Community Organizers/Irrigation-Organization Workers, the National Irrigation Administration has developed a process and guidelines on Irrigation-Community Organizer/Irrigation-Organization Worker recruitment.

Recruitment and Selection

The Irrigation-Community Organizer/Irrigation-Organization Worker recruitment and selection process starts with the Provincial Irrigation Office determining its requirements. These are relayed to the Regional Irrigation Office for evaluation and then submitted to the central office for approval. Once approved the positions of vacancies are posted at the Provincial Irrigation Office and municipal halls and announced through the radio or local newspaper. Applicants are required to send their applications to the Provincial Irrigation Office within two to three weeks after posting and/or announcements. The following steps comprise the selection process:

- * Evaluation of application forms.
- * Initial interview.
- * Psychological testing.
- * Panel interview.
- * Field exposure.
- * Final evaluation.

Training

The Irrigation-Community Organizers/Irrigation-Organization Workers are given training to develop their capabilities in carrying out their responsibilities prior to fielding and again prior to construction. Other Irrigation-Community Organizer/Irrigation-Organization Worker training in leadership, financial management, and system management supplement these.

PROGRAM MANAGEMENT

In the pilot stage of the Participatory-Approach Program, program management was the responsibility of a special group reporting directly to the National Irrigation Administration top management. As the policies, procedures, and guidelines for nationwide implementation were developed and adopted program management was gradually transferred to the regular units of the agency. At present the nationwide implementation is being supervised by the Institutional Development Department which is the unit of the agency responsible for overseeing the institutional-development activities nationwide. A recent change implemented is the creation of the Institutional Assistance Section at each Provincial Irrigation Office.

FARMER IRRIGATORS' ORGANIZING PROGRAM: AN ALTERNATIVE ORGANIZING SCHEME

An alternative organizing scheme utilizes farmers as organizers. The program, called Farmer Irrigators' Organizing Program, has been tried successfully in three national irrigation systems in the central Philippines. The advantage of this scheme is that farmer organizers are cheaper than professionals and they can also serve as advisers after the organization of irrigation associations while professional organizers are always transferred after the systems have been completed.

POTENTIAL AREAS FOR IMPROVEMENT

The following could be considered as areas of concern:

1. The unavailability of permanent positions for Irrigation-Community Organizers/Irrigation-Organization Workers has resulted in their getting transfers to agencies which offer better pay and job security. This is not only a drain of expertise but also adds to training costs for replacements.
2. Synchronization of the technical work and the institutional work although accepted in principle still requires close monitoring. In some instances because of a committed target date for physical completion the institutional aspect is sacrificed. On the other hand, slow accomplishment of institutional commitments delays the physical work.
3. A coordination mechanism to incorporate assistance of other agencies involved in agriculture must be developed. Irrigation development alone is not sufficient. Other agricultural assistance such as inputs and credit are essential to the process to complement the package of assistance to farmers.
4. The Farmer Irrigators' Organizing Program should be considered as an alternative for communal-irrigation system development.

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Role of the Irrigation Community Organizers: The Siwaragan Experience

R.B. Fernandez¹

INTRODUCTION

THIS PAPER DESCRIBES the experiences gained in the process of organizing the Siwaragan communal irrigation project in the Philippines. It focuses mainly on the process and the strategies employed in developing a farmers' association, the extent of farmers' involvement in project activities, and the roles and functions performed by the irrigation community organizers and provides some insights and concerns drawn from such experience. The implementation of the Siwaragan Communal Irrigation Project was lodged under the direct responsibility of the Iloilo Provincial Office which was headed by a Provincial Irrigation Engineer.

PROFILE OF THE SIWARAGAN COMMUNAL IRRIGATION PROJECT

The Siwaragan Communal Irrigation Project is situated approximately 56 kilometers (34.8 miles) northwest of Iloilo City, and it lies along the route to Antique. Its water source is the Siwaragan River. There are six *barangays* (smallest administrative units) covered by the Siwaragan Project. The potential irrigable areas of these barangays, with one exception, are located on the left bank of the Siwaragan River. The total potential irrigable area of the project is 300 hectares (ha) with 262 potential farmer beneficiaries.

Two irrigation community organizers (1 male and 1 female) were fielded in May 1980 to assist the Siwaragan farmers to form an Irrigators' Association. After eleven months of organizational

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work with the farmers, project construction was begun. Originally it was planned to complete the Siwaragan Communal Irrigation Project in two years. However, because the terrain required the construction of numerous structures and a 7.9-kilometer (4.91-mile) main canal, project construction was extended to Phase III, planned to be completed in 1983.

The project served 37 ha of its upstream command area in 1983 and a total of 144 ha by 1986. The entire command area was first served in July 1988. The system was turned over to the farmers during the first quarter of 1989.

ORGANIZING EXPERIENCE

The following discussion describes the process of organizing the farmers; events that occurred as the irrigation community organizers assisted the Siwaragan farmers to achieve the different milestones of organizational development, the extent of the association's participation in the planning, construction, and operation and maintenance of the system, and the irrigation community organizers' roles and organizing strategies.

FORMATION AND DEVELOPMENT OF THE SIWARAGAN IRRIGATORS' ASSOCIATION

Sector Formation and Firming Up of Potential Members

The two irrigation community organizers started the organizing work in the Siwaragan Communal Irrigation Project on 2 May 1980. The immediate priority activities based on their assessment of the project situation were:

1. Further validation of profile data and information gathering.
2. Establishing rapport with all the people in the community.
3. Dissemination of information to the farmers concerning the proposed irrigation project and the roles of the National Irrigation Administration and the irrigation community organizers in the area.
4. Initial identification of contact leaders and potential core-group members.

The geographically rolling terrain of the project and the absence of detailed survey data on potential irrigable area and proposed canal locations made the initial organizing work difficult as potential beneficiaries could not be accurately identified. Farmer-group meetings for project-information dissemination were done through barangays.

The first sector meeting through the barangay was held at Barangay Igburi on 5 June 1980. It was attended by 29 farmers. Subsequently, there were a total of seven barangay meetings conducted for project-information dissemination. In these initial meetings the contact persons were the barangay officials and identified community leaders. The main point raised by the irrigation community organizers was that the farmers should actively participate in all the technical activities of the project. The National Irrigation Administration's timetable for survey activities was at hand. Thanks to the irrigation community organizer's recommendations, farmers of different sectors agreed to form two working committees: the survey committee and the membership committee, the former to assist and coordinate with the National Irrigation Administration survey team in the survey activities and the latter to identify and begin firming up the list of potential beneficiaries within the sectors. When the topographic survey was conducted from July to December 1980, the actual potential irrigable area was determined to be about 300 ha. While this survey was going on, the irrigation community organizers assisted the leaders to review the status of existing sectors. The canal-location survey in October 1980 further facilitated the firming up of potential membership and the final revision of the sector coverage. Farmers themselves suggested that sectoring should be revised based on canal layout.

Identification and Development of Potential Irrigators' Association Leaders

Soon after their entry into the area the irrigation community organizers started to identify potential leaders whom they could ask to assist in disseminating project information to farmers. They tapped existing community leaders who helped them to inform farmers about the project and to call meetings. A core group composed of at least one member from each of the seven barangays was organized. The members of the core group did much to stimulate other farmers to attend meetings and clarified their questions regarding the proposed project. By 5 August 1980, all sectors had elected their officers and committee members and were simultaneously given orientation on their specific tasks and functions by the irrigation community organizers. Thus, before the final organizational election of the Siwaragan Irrigators' Association, several strong leaders had begun to emerge as a result of activities which were undertaken at the sector level. The irrigation community organizers continued to try to identify potential leaders who could occupy higher leadership positions. The National Irrigation Administration conducted leadership training in December 1988 in two groups attended by a total of 49 farmer leaders.

After the formation of preconstruction working committees and sectoral organizations, a committee on election composed of seven members chosen by the Board of Directors from each sector was formed to act as an independent body to implement policies and to oversee the overall conduct of the election of Irrigators' Association Officers. This general election, held on 27 September 1980, proved quite successful. Out of 270 potential beneficiaries, 193 attended. With the new set of officers, the general assembly proceeded with the formation of its standing committees; the Finance and Development Committee, the Audit and Inventory Committee, and the Education and Training Committee. All were chaired by Irrigators' Association Officers. The remaining three committees -- the Grievance and Complaints Committee, the Agricultural Supervisory Committee, and the Irrigation Management Committee -- were chaired by members chosen by the general assembly.

Formation of Working Committees

The Siwaragan Irrigators' Association was able to make its participation operational during the preconstruction and construction phases through its working committees. These were the committees on Survey, Membership Recruitment, Right of Way, By-Laws, Group Dynamics, Securities and Exchange, Water Permit, Equity Participation, and System Design. Membership in most of these sector committees ranged from three to four, headed by a chairman who was an ex-officio member of the same committee in the entire Irrigators' Association. All preconstruction committees accomplished their tasks satisfactorily. The construction working committees were created in November 1980 when plans were finalized for construction to commence during the first quarter of 1981. These were the Manpower, Inventory, Cost Control, Materials Control, and Canvass and Bidding Committees.

Completion of Legal Requirements

Foremost among the tasks accomplished during the preconstruction phase were the registration with the Securities and Exchange Commission, obtaining of the water permit, signing of the Memorandum of Agreement and the Right-of-Way negotiations. Most of these activities were undertaken through the working committees. The Irrigators' Association and the National Irrigation Administration undertook the preconstruction conferences during which each party formulated its own policies and systems that served as guides for construction implementation. The Memorandum of Agreement between the Siwaragan Irrigators' Association and the National Irrigation Administration was signed in March 1981, signaling the readiness of both parties to start project construction.

FARMERS' PARTICIPATION IN PLANNING, CONSTRUCTION, AND OPERATION AND MAINTENANCE

Farmers' Involvement in Project Planning and Design

During the information-dissemination phase the attitude of the farmers in the three downstream sectors was negative towards the project because they did not believe that the Siwaragan River could be tapped to irrigate their farmlands. However, the differential-leveling survey conducted on 20 May 1980 showed that their lands could benefit from the scheme.

There was close coordination between the irrigation community organizers and the technical staff involved in the Siwaragan project through the monthly coordination meetings at the provincial office together with the Provincial Irrigation Engineer. The irrigation community organizers were given complete information on the program of technical activities and the

technical staff on irrigation committee activities. Thus, the organizational work undertaken by the irrigation community organizers was always in harmony with the technical activities.

In accordance with the Provincial Irrigation Engineer's commitment, on 15 February 1981, the preliminary system design was presented to hear farmers' suggestions or recommendations, if any. In March 1981, the Irrigators' Association, the Project Engineer and the irrigation-community organizers conducted a walk-through and a plan-in-hand inspection of the main proposed project facilities. The Irrigators' Association Leaders were clearly aware of and identified all the major structures and facilities of the project. Frequent National Irrigation Administrations - Irrigators' Association dialogues were conducted while design preparation was in progress at the regional office.

The Irrigators' Association Leaders invested considerable time and effort in right-of-way negotiations with landowners and many changes in conveyance structures were made by the farmers to help ensure the functionality of the system.

Farmers' Involvement in Project Construction

As had been planned in the preconstruction phase the Siwaragan farmers were fully mobilized during the construction period. All the construction working committees functioned as promised with corresponding monitoring and follow-up from the Irrigators' Association Officers and irrigation community organizers. Even during Phase I construction of the dam farmers in the downstream sectors would hike more than seven kilometers to the construction site in the morning and then back again in the evening. With their scheme of manpower supplied proportionately by each sector the association provided almost all the labor requirements of the project save those works which required skilled labor. To strengthen the coordination mechanism between the National Irrigation Administration and the Irrigators' Association Leaders, meetings were conducted every 15 days at the project level. Cost reconciliation and equity generation were intensively monitored by the Irrigators' Association Leaders with the assistance of the irrigation community organizers. Most of the farmers' equity contribution came from their wages in construction work while a few contributed local materials for the *bodega* (warehouse). As of March 1984, the association had well exceeded its equity requirement based on the P300 (US\$14.00) per ha.

A unique feature of the Siwaragan project was the long duration of its construction. While there was a partial turnover of completed facilities to the farmers in 1986, construction activities continued up to 1988. The delay was attributed to the technically complex nature of the project requiring additional structures and facilities for adjustment, and budgetary constraints. The farmers, surprisingly, remained actively involved in construction throughout the seven years and remained undeterred in spite of the long wait.

Farmers' Activities in Operation and Maintenance

The Siwaragan Irrigators' Association at this time had relatively little experience in operation and maintenance since the works were only recently turned over to them. During the partial operation and maintenance stage the irrigation community organizers began coordinating with the Irrigation Technician to assist the farmers to firm up their operations and maintenance plans and activities. In 1983, the National Irrigation Administration conducted two System Management Training Courses for the Siwaragan farmers in anticipation of its full operation that year.

The Siwaragan Irrigators' Association revised its organizational structure as early as 1984 to respond to operation and maintenance responsibilities. It hired paid operation and maintenance personnel such as gatekeepers, bill collectors, and water tenders. The Irrigators' Association collected two cavans of palay (unhusked rice) or P350 (US\$16.40) per ha per cropping season in irrigation fees to cover the expenses of operation and maintenance and for amortization. The new amortization fee rate, which is 1.71 cavans or P299.25 (US\$13.95) per ha per cropping had just been finalized.

IRRIGATION COMMUNITY ORGANIZERS' ROLES AND ORGANIZING STRATEGIES

In the course of their organizing work at Siwaragan all the irrigation community organizers had to perform other roles such as researcher, guide, adviser, trainer, mediator and facilitator, expert, catalyst, or agitator. These varied roles were determined or dictated by the needs and issues identified in the area and the resultant organizing strategies applied to enable farmers to develop a functioning Irrigators' Association.

Monthly coordination meetings at the Iloilo Provincial Office and the biweekly National Irrigation Administration-Irrigators' Association project-site meetings during construction were effective mechanisms not only for periodic review of program implementation but also for providing continuous orientation of the National Irrigation Administration's engineers and organizers on the technical and institutional features of the program. The strategy resulted in the smooth and effective integration of technical and institutional field activities. In dealing with the issues the irrigation community organizers immersed themselves in the community. The groundwork, numerous meetings, and mobilizations of farmers required for collective decision making and implementation of Irrigators' Association activities were done at the sector and Irrigators' Association levels. The irrigation community organizer mediated and coordinated National Irrigation Administration-Irrigators' Association activities related to planning and project construction. They acted as trainers, consultants, and facilitators during committee orientation, group-dynamics training, and National Irrigation Administration-Irrigators' Association dialogues. In the process, the irrigation community organizers and the developed Irrigators' Association Leaders did much discussing, arguing, persuading, and agitating to raise the level of awareness of farmers, to enable them to make decisions, and to implement them.

The following are examples of the issues and problems encountered and the strategies employed to resolve them:

1. The incumbent municipal councilor whose district included sector 1 wanted to oust the member representing sector 1 on the Board of Directors, due to political conflicts. The irrigation community organizers met to discuss strategy with the sector officers and the working-committee members. Most of them expressed apprehension concerning resistance to the move of the municipal councilor. The Board of Directors member himself offered to resign if necessary. Sensing the submissive attitude and helplessness of the group the irrigation community organizers tried to persuade the sector officers to stand up to the municipal councilor. The irrigation community organizers expounded on the negative consequences to themselves and the association if they did not resist this move stating that they could generate support from other sectors if they stood up to the municipal councilor. After some discussion the sector officers decided to confront the municipal councilor and resolved to support their Board of Directors. They set a meeting and sent a verbal invitation to the municipal councilor, but he never showed up.
2. The Provincial Irrigation Engineer proposed a route for the main canal which farmers perceived as more expensive and difficult to construct than an alternative route. On the advice of the irrigation community organizers, the Irrigators' Association Officers asked their survey committee to recheck their proposed route with that of the Provincial Irrigation Engineers, to further evaluate and strengthen their own proposal. They also identified a spokesman to articulate their views at the general meeting to be held with the Provincial Irrigation Engineer. In the resultant dialogue, the Irrigators' Association requested the Provincial Irrigation Engineer to present a comparative cost of the two routes. It turned out that the cost of the canal route proposed by the Irrigators' Association was lower. The Provincial Irrigation Engineer conceded to the Irrigators' Association.

INSIGHTS AND PROGRAM CONCERNS

The following are a few important lessons learnt from the Siwaragan experience:

1. There is a need for adequate lead time in organizing to prepare the farmers to actively participate. The organizer needs time to contend with the geographical conditions of the project, to establish rapport with and trust among farmers, and to allow for the gradual development of their leadership skills.
2. Intensive farmer involvement in all project activities serves to develop a strong association and a functional irrigation system.
3. Even during the preconstruction stage, the National Irrigation Administration should discuss with the farmers the possible operation and maintenance issues and implications with regard to the proposed structures and facilities to be constructed. Had the farmers been deeply aware

of this in Siwaragan they could have contributed more to the betterment of the operation and maintenance of their system.

4. A well-developed Irrigators' Association can sustain the travails of a prolonged construction period without the interest of farmers waning.

The following are considered important program concerns, mostly as a result of the Siwaragan experience:

1. The National Irrigation Administration should develop an instrument or process to indicate Irrigators' Association functionality status prior to partial or full irrigation community organizer manpower pullout from the project.
2. The National Irrigation Administration should formulate plans to develop the capability of line units for efficient and effective program management and implementation.
3. The National Irrigation Administration should pay more attention to improving the operation and maintenance intervention for communal irrigation systems.
4. The National Irrigation Administration should make long-term plans to ascertain the nature and status of irrigation community organizer employment with the agency.

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Prospects of Using Social Mobilizers in the Management of Minor Irrigation Systems in Sri Lanka

M.H.S. Dayaratne[§]

INTRODUCTION

THE HYDRAULICS CIVILIZATION of Sri Lanka which dates back to the fifth century B.C., represents a unique combination of topographical and climatic features of the country and the cultural heritage of the earliest settlers from the Indus and Ganges villages of northern India. During the period of early settlement until the twelfth century, the agricultural society of Sri Lanka was characterized by high technology based on intricate irrigation systems geared to rainwater conservation and sound water-management practices.

A minor irrigation system, also known as village irrigation, has a command area up to 200 acres (80 hectares [ha]). In Sri Lanka, it is only the minor irrigation schemes that come under the category of farmer-managed irrigation systems, since medium and major irrigation schemes are generally agency-managed systems.

The decline of traditional management practices in minor irrigation schemes is the result of 1) the abandonment of the dry-zone tank culture begun in the twelfth century, 2) the abolition of customary laws (*sirith*) of irrigation management during colonial rule, and 3) the increased intervention by government and nongovernment organizations through numerous donor-funded projects since independence. With the different intervention strategies of the latter, water-user dependence on outside assistance has increased to such an extent that established maintenance and water-management practices are being neglected. Assistance programs should look into complementary and supplementary programs of operation and maintenance and water management to remedy this situation. Various strategies are now being implemented to restore farmer participation in the management of minor irrigation schemes in Sri Lanka.

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The main purpose of this paper is to consider the prospects of engaging social mobilizers, as those now serving in rural development projects, as catalysts to improve management practices of the minor irrigation schemes in Sri Lanka.

THE MINOR IRRIGATION SECTOR IN SRI LANKA

Distribution and Assistance Strategies

About a third of the total irrigated area in Sri Lanka is under minor irrigation. The total number of minor irrigation schemes identified is approximately 23,000 of which 13,000 are village tanks and 10,000 are anicuts or stream diversions according to estimates made by the Ministry of Lands and Land Development. It is also estimated that over 50 percent of these schemes are in working condition. The Department of Agrarian Services which is the authority responsible for minor irrigation in Sri Lanka found that there are about 8,500 operational tanks in the dry zone.

During the past two decades, the Government of Sri Lanka has made great efforts to improve the efficiency of operational schemes and to rehabilitate those abandoned, aiming at increasing the production of rice and other crops. Several bilateral and multilateral organizations have assisted the government to achieve this goal through the support of development projects called Village Integrated Rehabilitation Projects and District Integrated Rural Development Programs. Apart from these government projects, several government-related, private, and nongovernment organizations such as the Freedom from Hunger Campaign, the National Development Foundation, and international organizations including FAO, UNDP, and CARE, have funded minor irrigation rehabilitation in most of the dry zone.

As mentioned earlier, farmer management of these minor schemes has been favored for historical and project-specific reasons. The different strategies of assistance to improve or rehabilitate minor schemes cannot by themselves bring about the anticipated socioeconomic changes unless farmers are involved in the process of restoration and management. The nongovernment organizations, more than the government, have identified and implemented some programs leading to beneficiary participation to overcome this problem.

Traditional Water Management

The minor irrigation schemes have been traditionally owned by the water users, and through the long history of operation customary laws were developed with respect to irrigation with necessary modifications to suit local circumstances (Gunasekara, 1981). These customary laws emphasize individual responsibility for the commonly owned resource; and require equal and equal participation in maintaining and repairing channels and the dam. They specify methods to ensure equity in water distribution during periods of normal and of limited water supply and define penalties for those neglecting their duties or infringing on the rights of others.

These irrigation laws reflect sound water-management practices and were established through experience over centuries. During the colonial period the rulers tried to revive these customary laws for better irrigation management. With increased government intervention to obtain higher farm output under irrigated agriculture, enforcement of some of these laws was transferred to officers or agencies. Water users, as a result, have become more dependent on external assistance for small repairs, maintenance, and management. Although there is some degree of sustainability in small operational tanks, traditional management practices should be gradually reintroduced to “new farmers” under the various rehabilitated minor schemes by outside agencies acting as change agents.

Problems in Minor Irrigation Management

Because the aforementioned management practices have fallen into disuse the following problems have emerged, particularly in minor irrigation schemes:

1. Most farmers in recently refurbished minor schemes believe that the government owns the irrigation system and is responsible for ensuring its proper operation and maintenance.
2. Village-level irrigation leadership deteriorated due to the appointment of cultivation committee members on a political basis during the post-1970s.
3. Many minor schemes have been selected for refurbishment without consulting the existing or prospective water users, resulting in reduced efficiency of the system (i.e., more tanks in one catchment area results in less water in all tanks).
4. With the abolition of the *Vel-vidane* (Irrigation Headman) position and increased state intervention, farmers’ participation in beneficiary meetings, operation and maintenance work, and timely cultivation has been reduced.

ROLE OF SOCIAL MOBILIZERS

Change-Agent Program

In the late 1970s, the Ministry of Rural Development implemented a development program for the rural poor, using volunteer change agents. The procedure of the Change-Agent Program is as follows: A group of rural development volunteers is selected and intensive training is given to the group in mobilizing rural people for problem identification and seeking solutions requiring only locally available resources. A trained officer is assigned to a village and he lives among the villagers. He starts by organizing small groups of people and mobilizing them to identify their problems along with their causes and possible solutions. In this process, the change agent uses his skills to help the deprived groups to think and act positively, and to obtain the fullest benefits from government and nongovernment assistance.

This is, however, a long and slow process. Several years are required for the change agent to win the confidence of the target groups and to change a negative-oriented attitude into a positive-oriented one. Learning from this program, in 1985, the Ministry of Plan Implementation adopted a different strategy for its District Integrated Rural Development Program under the title of Social Mobilizer.

Social-Mobilizer Program

Some of the activities of the Ministry of Rural Development were transferred to the Ministry of Plan Implementation in the early 1980s. The latter made use of the Rural Development Training and Research Institute in Colombo, to formulate the concept of a village-level catalyst termed social mobilizer, with the sole objective of channeling the development benefits of the District Integrated Rural Development Program to the rural poor. In transforming the change agents to social mobilizers the Ministry of Plan Implementation eliminated the time-consuming elements of the earlier Change-Agent Program. The changes made were as follows:

1. The social mobilizers are selected from within the area (same Grama-Sevaka division [village-administrative division] or adjoining division) to avoid the "outsider" feeling and to assure that he would be accepted by the communities concerned.
2. The social mobilizers are selected from voluntary organizations which have experience in rural and community development.
3. Insofar as it is possible, more women were selected. They made better contacts with beneficiary families, as woman-to-woman communication generally moves fast and fast.
4. The social mobilizers were given initial training for one-to-two weeks and periodic on-the-job training in the form of one-day workshops each month at the District Integrated Rural Development Programs' head office.
5. Work progress was reviewed every month at the office of the Assistant Government Agent so that social mobilizers were motivated to produce visible results.
6. Community-development programs identified by social mobilizers and in which the beneficiaries were involved were incorporated into a subproject of the District Integrated Rural Development Program so that funding and project implementation were not delayed.
7. Beneficiaries saw the results of the program within a short time resulting in a high degree of participation.

The social-mobilizer program focuses heavily on active participation of beneficiaries throughout the cycle of activities. The main elements of the program are: high identification in the social mobilizer, self-reliance, active participation of all, a positive group attitude, and leadership building.

Present Use of Social Mobilizers

The social-mobilizer program was first introduced to the Hambantota District Integrated Rural Development Program in 1985 and following this, to the Monaragala District Integrated Rural Development Program, under the Norwegian Agency for International Development funding. The purpose of the social-mobilizer program is to improve participation for local-level development, particularly among the poorer households.

Under the Hambantota District Integrated Rural Development Program, trained social mobilizers were appointed to a few villages (on a Grama-Sevaka-Division basis, to work with 100 to 150 families). They were entrusted with the functions and responsibilities listed below (Hewage and Karunaratne, 1987).

1. Establish close links with existing development-oriented, village-level organizations and officials.
2. Carry out socioeconomic surveys in the selected areas to identify locally available resources.
3. Find ways and means of improving the productivity of the available resources in project areas.
4. Identify services available from government and nongovernment organizations and improve the delivery system.
5. Pay special attention to deprived poorer groups in the development efforts.
6. Assist the Hambantota District Integrated Rural Development Program to implement its projects and encourage the members of target groups to form organizations to enhance institution-building capacity based on self-reliance.

After a review of the performance of the first social-mobilizer program by the Norwegian Agency for International Development, in 1989, the expansion of the project into all areas of Hambantota district under the Hambantota District Integrated Rural Development Program was recommended. The review team was impressed with achievements in the main objective, i.e., mobilization of target groups for increased participation, with special attention to deprived poorer groups. The best performance was found in small farmers' groups, in women's groups, and in groups without income.

Although social mobilizers are not directly engaged in projects with rice farmers, they have helped in some places to organize small farmers to deal with their problems. For example, in Suriyawewa (North Hambantota) small groups of *chena* (slash-and-burn) farmers have been organized to rehabilitate tanks and to adopt improved farming practices. The social-mobilizer program has recently been expanded to include other District Integrated Rural Development Program districts for organizing both lowland and upland small farmers.

HOW TO USE SOCIAL MOBILIZERS IN MINOR-IRRIGATION MANAGEMENT

The social-mobilizer program has focused on rural development in general and on dispersed social groups in particular. In this process some small farmers have also been organized. It would be possible to utilize social mobilizers as catalysts to reorganize farmers into coherent groups on the basis of minor irrigation schemes. The introduction of social mobilizers on a broad scale to deal with refurbished but poorly managed minor irrigation schemes would present the best alternative for dealing with the problems in this sector, with the following key points:

1. The social mobilizers should be selected from within farmer groups on a democratic basis in order to achieve a high degree of farmer participation. The selected social mobilizer should be a young farmer, or the son or daughter of a farmer, who is acceptable to all.
2. The social mobilizers should hold frequent meetings with farmers for awareness-raising, education, and for mobilization, to alter their attitudes of dependence on outside agencies and to increase their self-reliance.
3. The social mobilizers' mobilization of farmers and increased participation would lead to improved access to the services of government agencies.
4. With the systematic organization of farmer groups the efficiency and self-reliance of the farmer-managed irrigation systems would increase confidence in the social mobilizer and in the group and would lead to greater self-reliance.
5. The minor irrigation schemes in need of repairs or rehabilitation should be selected by farmers on a priority basis in order to exclude nonviable systems and to ensure sufficient water in the remaining tanks in a given catchment area.
6. The increased levels of participation would lead to timely operation and maintenance and to timely cultivation, resulting in proper water management and improved yields.
7. Participatory farmer organization would be reestablished as a result of the application of this approach resulting both in improved management and in the ability to attract outside assistance effectively without becoming dependent on such assistance.

CONCLUSION

Owing to the disintegration of farmer organizations, the customary arrangements falling into disuse, and the increased dependence on outside agencies for management, the minor irrigation schemes can now rarely be called farmer-managed irrigation systems. To reverse this negative tendency, a social-mobilizer program such as the one described above which has had good results in the field of rural development could prove effective in catalyzing farmers to become organized. Using local youths trained as social mobilizers would permit implementation on a broad scale. With supplemental training in farmer-managed irrigation social mobilizers could assist farmers to develop sustainable management and to revitalize the concept of farmer-managed irrigation systems in minor irrigation in Sri Lanka.

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Adjusting the Process for Participatory Management through a Team Approach: A Case Study in North Central Sri Lanka

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INTRODUCTION

SMALL-SCALE IRRIGATION SYSTEMS in Sri Lanka are classified as irrigation works with command areas of 200 acres (80 hectares [ha]). The two main types of irrigation schemes are reservoir and weir systems. Reservoir systems, commonly called tank systems, were first constructed during the fifth century B.C. It has been estimated that there are about 23,000 small-scale irrigation systems of which 13,000 are reservoir systems. Small-scale irrigation systems account for 28 percent of the total rice production of the country while in 90 percent of the landholdings in small-scale irrigation systems the area of each holding is less than one acre (0.405 ha).

Small-scale irrigation systems are so vital to the economy of the rural sector that the state has taken the initiative to refurbish and modernize them. This is to be done using available local resources and with the assistance of foreign donors. One of the major foreign assisted small-scale irrigation-system projects in Sri Lanka is the Village Irrigation Rehabilitation Project. The Village Irrigation Rehabilitation Project seeks to increase cropping intensity and to raise farm income by improving the technical parameters of small-scale irrigation systems, mainly in reservoir systems in the dry zone. Initiated in 1981, the Village Irrigation Rehabilitation Project is nearing completion and it is hoped that a second phase will commence in mid-1990.

The project report of the Village Irrigation Rehabilitation Project envisages the implementation of a water-management program in the refurbished schemes through the fielding of Agricultural Planning Teams. In the initial stage of the project, an Agricultural Planning Team consisted of a Technical Officer and an Agricultural Instructor, with responsibility to formulate an improved water-management program for rehabilitated or modernized schemes. The Agricultural Planning

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Team was not involved in the construction program. Physical rehabilitation or modernization was left to state-construction agencies. Accordingly, the Small-Scale Irrigation Rehabilitation Program had two separate components: rehabilitation and water management. As the Agricultural Planning Team consisted of two officials specializing in engineering and agronomy their main interest lay in technical matters. An Agricultural Planning Team was usually assigned a large volume of work. These and other factors resulted in poor performance in project implementation and paved the way for even greater state intervention.

In 1984, a research study was undertaken by the Agrarian Research and Training Institute with one of its objectives being to study rehabilitation procedures and to investigate whether existing procedures hindered subsequent operation and maintenance activities to be performed by beneficiaries. Another evaluation was undertaken by the Faculty of Agriculture of the University of Sri Lanka, to study the impact and performance of the Village Irrigation Rehabilitation Project. These studies identified several basic issues which are given below.

Absence of Consultation

One of the major findings of both studies was the insufficient beneficiary involvement in the process of physical rehabilitation. The Agrarian Research and Training Institute study found that 67 percent of the farmers in rehabilitated schemes felt that the state owned the irrigation works. In the evaluation done by the University of Sri Lanka, similar results were found. These findings show that there was no mechanism to elicit farmer involvement in the rehabilitation process.

Bureaucratic Orientation

The studies revealed that the bureaucracy was not oriented to rehabilitation of small-scale irrigation systems because their experience had been with large-scale irrigation construction projects involving complete resettlement programs.

Rigid Centralized Planning

Planning of organizational forms and design of structures was done at the central level and sent to the field for implementation with no serious thought given to its functionality. In the rehabilitation process blueprints were followed with no attempt to adapt the plans to local needs. As a result, beneficiaries often misused or even destroyed facilities. In the early stages, measuring devices were usually not used by beneficiaries as the purpose of these structures was never explained to the users.

Lack of Viable Farmer Organizations

The Village Irrigation Rehabilitation Project envisaged the creation of farmer organizations in a predetermined way. The proposal to organize a Tank Committee for each reservoir system was a theoretical exercise not based on reality. Beneficiaries were not prepared to form Tank Committees. Farmer organizations were thrust upon beneficiaries who were not allowed to develop their own forms gradually, and as a result, the organizations were not socially and functionally viable.

RESTRUCTURING INSTITUTIONAL ARRANGEMENTS

The Agrarian Research and Training Institute study recommended that the Agricultural Planning Team be strengthened by the inclusion of an Institutional Organizer such as had already been tested and proven successful in the Gal Oya Major Irrigation Rehabilitation Project. The reasons for including an Institutional Organizer in the Agricultural Planning Team are as follows:

1. To allow for the integration of physical-construction aspects and social-development aspects. Institutional Organizers would act as catalysts in organizing farmers for activities during pre-rehabilitation, rehabilitation, and post-rehabilitation phases.
2. Institutional Organizers would facilitate a dialogue between farmers and officials to the benefit of both parties.
3. Institutional Organizers would facilitate community development in systems to be rehabilitated and would, in particular, promote disadvantaged groups such as encroachers or landless peasants.
4. The Institutional Organizer unlike other members of the Agricultural Planning Team, could be from, and resident in, the village. This would contribute to the sustainability of the group even after the Agricultural Planning Team has moved on.
5. Institutional Organizers bring a wider range of interests to group formation. They do not limit themselves to water management but deal with broader agricultural and rural development concerns, creating a wider base for group sustainability.

THE AGRICULTURAL PLANNING TEAM UNDER THE DEPARTMENT OF AGRARIAN SERVICES

As part of this process, the Water-Management Division of the Department of Agrarian Services launched several pilot projects in north central Sri Lanka where a large number of indigenous

reservoir systems are found. As this division was responsible for modernization of reservoir schemes it was decided to test the alternative approaches in schemes identified for modernization.

With the assistance of the district administration, the Agricultural Planning Teams were established by mid-1987. Although the Village Irrigation Rehabilitation Project report envisaged the establishment of only one Agricultural Planning Team for the district it could not cope with the increased volume of work. Transportation was also a problem. Small-scale irrigation systems are scattered in remote areas throughout the district. It has since become necessary to form local Agricultural Planning Teams based at the local Agrarian Services Center. Each of these 38 Centers in the District of Anuradhapura in the north central region has a Technical Officer, an Agricultural Instructor, and a Divisional or Institutional Officer. The Divisional Officer is responsible for dealing with institutional aspects of the agricultural sector. This combination of engineering, agronomic, and institutional aspects has facilitated the understanding of problems related to irrigation development at the grass-roots level.

Orientation programs, training programs, workshops, and seminars for reorientation of officers assigned to the Agricultural Planning Team were held in the area. The need to diagnose and analyze the irrigation problems in an integrated manner was stressed. Not only was each professional exposed to his own discipline but he was given an opportunity to understand irrigation problems holistically. After the initial in-service training, members of the Agricultural Planning Team were given on-the-job training in specific reservoir schemes. They were expected to understand and diagnose the problems of the irrigation system in consultation with the farmer beneficiaries and in an interdisciplinary manner. In 1988, 341 Agricultural Planning Team officers were trained. The importance of consultation between disciplines and of maintaining a continuous dialogue with farmer beneficiaries was essential to the success of the projects.

Another factor in the Agricultural Planning Team approach was cost-effectiveness. The fielding of Agricultural Planning Teams and the flexible approach applied have not added to the cost of the program. It needed only pooling of the available resources in a more meaningful manner to achieve the desired goal.

THE PILOT PROJECT

Six small irrigation schemes in north central Sri Lanka were chosen for the pilot project to test the new Agricultural Planning Team approach. Some schemes were selected to test different cropping patterns, others, to test improved operation and maintenance programs. Two schemes were selected with the express purpose of testing the process and procedures of farmer involvement in the physical construction program (Tank Modernization Program). These two reservoir systems were in working condition but with low efficiency, due to technical defects in the tank bund and the spill which prevented water storage. The sluices of these tanks were also not in proper working order causing a continuous unregulated flow. There were no proper channel systems in the command area resulting in water losses and in improper distribution, which in turn, created conflicts among the farmers.

From the initial identification stage the Agricultural Planning Team organized meetings of the beneficiaries to explain the concept of the modernization work. These initial meetings and dialogues gave the farmers some idea of the scope of the project. The Agricultural Planning Team met with the farmers to obtain basic data on the reservoir system. At this preliminary investigation stage the Agricultural Planning Team had to decide whether the Village Irrigation Rehabilitation Project selection criteria were satisfied. These criteria require that at least 10 farm families and at least 8 ha must benefit for a scheme to be rehabilitated or modernized.

At the full investigation stage the Agricultural Planning Team collected primary data regarding technical, agronomic, and institutional aspects. The members of the Agricultural Planning Team by this time saw the construction program not only as a "technical process, but also as a social process." The technical proposals were submitted to the farmer beneficiaries and their views solicited before the collection of technical data was undertaken.

In carrying out the various engineering surveys the farmers assisted the Agricultural Planning Team, especially by mobilizing their labor. In our experience, the farmers' proposals regarding their requirements concerning the main construction components, e.g., tank bund, spill and sluices, merit serious and careful consideration. In many reservoir systems in the north central area, the general request from the farmers was to deepen the tanks by way of desilting the tank bed. Deepening and desilting of reservoirs would not normally yield economic results as it is a costly item. Desilting to increase reservoir capacity for additional irrigation is not normally cost-effective. The increase in stored water is, however, worthwhile if utilized for domestic purposes such as bathing, laundering, and watering cattle -- especially during a period of drought.

At the design stage more dialogues were initiated with the farmers about the future irrigation-management programs for their reservoir systems. The Agricultural Planning Team collected data to assist them in developing improved irrigation-management programs, including socioeconomic studies done on a diagnostic basis, and surveys of the physical resources of the reservoir systems done by the Agricultural Planning Team agronomist. The socioeconomic study helped illuminate the social and economic status of the villages.

At the investigation stage special consideration was given by the Agricultural Planning Team to ensure that the design of the structures was compatible with the future irrigation-management programs. Complaints commonly heard were: that water could not be distributed in some parts of the service areas; that farm turnouts installed by the construction agencies were defunct; and that farmers could not divert water to their rice fields from these outlets. As part of the preconstruction process the Agricultural Planning Team checked complaints with the beneficiaries concerned. It was also found to be important to select the locations for downstream structures together with the farmers. The walk-through of the system was done by the Agricultural Planning Team and the farmers together. At this stage, farmers cultivating adjacent blocks walked along the channel with the Agricultural Planning Team and decided on the correct location of new farm turnouts to be constructed.

The Agricultural Planning Team also had opportunities to negotiate with farmers regarding problems related to right of way. In the pilot-project areas farmers volunteered to donate part of their rice fields to construct canals. To make the construction program more compatible with the anticipated water-management program the farmers suggested having separate water courses starting from each farm turnout of a rotational unit. This invariably required farmers to donate more land. In one reservoir scheme 1.4 percent of the total command area was donated for this purpose. Not only farmers owning large plots but also those who owned only small parcels

donated the necessary areas without compensation. This gesture clearly shows that farmers understand the importance of the modernization program and the need to work together with government agencies.

In the pilot-project areas the Agricultural Planning Team was instrumental in getting contractors to work in close liaison with the farmers. In each scheme a committee of farmers was appointed to supervise and inspect the quality of work done by the contractors. In many schemes it was not just the committee which was responsible but beneficiaries themselves who took turns in supervising construction work. Seeing that their work was closely supervised by the farmers the contractors tended to be more careful and tried not to repeat mistakes. By this process, the farmers saw that the work was well-done and that the reservoir was built for them.

The Agricultural Planning Team helped to negotiate with contractors, in the deployment of local labor in some construction work, with payment to a revolving fund for use in operation and maintenance. The Agricultural Planning Team has made a point of having beneficiaries contribute, in the form of labor, a value equivalent to 10 percent of construction costs. There is no hard and fast rule regarding this free labor; however, the Agricultural Planning Team has always managed to organize *shramadana* (voluntary labor) to dig field channels, to clear light jungle at the tank site, to clear away anthills, and to do whatever other work the farmers felt they could undertake.

ACHIEVEMENTS

The above description of the processes during the preconstruction and construction stages shows that farmers feel the refurbished schemes belong to them rather than to the state. To inculcate this sense of ownership among the farmers the Agricultural Planning Team approached irrigation development in a holistic way. It was the synchronizing of the Agricultural Planning Team's nomothetic knowledge with the farmer beneficiaries' ideographic knowledge which has resulted in their feeling that the reservoir system belonged to them. A survey conducted in the modernized schemes revealed that over 90 percent of the farmers were satisfied with the construction program and over 90 percent felt that the reservoir belonged to them even after renovation by the state.

The greatest achievement in involving the beneficiaries in this process was that they themselves suggested carrying out a land consolidation of the rice fields. In one case, 18.21 ha (45 acres) belonged to 35 farmers; but the 18.21 ha (45 acres) were in 111 separate parcels. Some farmers had four to five parcels of rice fields at different places making it difficult to irrigate plots and to organize agricultural activities. This invariably resulted in poor productivity. Though there is no legal provision for land consolidation the Agricultural Planning Team took the initiative and arrangements were made to exchange rice-field parcels situated in different places and to block them together. This has made it easier for farmers to adhere to a meaningful irrigation-distribution system and to a more efficient operation and maintenance program. This example clearly shows that farmers have developed confidence in the Agricultural Planning Team and that the institution has been a useful facilitator in resolving their long-felt need.

Under the Village Irrigation Rehabilitation Project program, procedures for farmer organizations have been defined but experience has shown that merely adhering to procedures has not helped organizations to become viable. The concept of farmer organizations and their role was very vague to both the beneficiaries and the agencies. In the pilot-project areas, formal farmer organizations were never discussed in the initial stage. The Agricultural Planning Team allowed the water users to develop their capacities and capabilities during the preconstruction and construction stages. As the entire process took about one to one and half years, the Agricultural Planning Team was able to identify the farmers who would work with dedication and those farmers who could provide leadership. In many pilot-project areas, it was only a matter of time until a formal water-user organization was formed. By that time their role and tasks had been clearly identified. What the Agricultural Planning Team did was to modify and adjust the rigid procedures to allow the organizations to evolve.

The above discussion has shown that the new Agricultural Planning Team approach has yielded better results in the process of irrigation development. This does not mean that the Agricultural Planning Team approach was able to find solutions to all problems. Many issues still remain to be solved and the learning process must be continued. The experience gained so far has clearly been positive and we hope that the Agricultural Planning Team approach will be extended in a more meaningful manner with whatever corrective measures are necessary when we embark on the second phase of the Village Irrigation Rehabilitation Project next year.

Role of Social Organizers in the Development of Small Irrigation Systems in Northeast Thailand by the Royal Irrigation Department

R. Boonmathaya[‡] and R.A. Sharples^{§§}

INTRODUCTION

THE MOST PROMISING alternative for resolving water-shortage problems in northeast Thailand is the development of small water resources. The construction of weirs and small reservoirs is one component of this small-scale development strategy aimed at supplying water for domestic and agricultural purposes. The latter category may include supplementary rainy season irrigation, dry-season crop and vegetable irrigation, fisheries, and livestock. Unfortunately, the report of the National Committee for Water Resources (1984) indicated that not more than 50 percent of small reservoirs and weirs all over the country are being fully utilized and adequately maintained by farmer beneficiaries.

ACTION RESEARCH USING SOCIAL ORGANIZERS

In recognition of this issue, the Royal Irrigation Department which constructs most of the small weirs and reservoirs developed by the government throughout the country, is attempting to

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improve its planning and implementation by getting farmers to participate more effectively in this process. The premise underlying these efforts is that greater farmer participation in planning and implementation can contribute to their using and maintaining these resources more effectively. Since 1985, the Royal Irrigation Department together with the Water Resources and Environment Institute, Faculty of Engineering, and with social-science research assistance from the Research and Development Institute, and the Faculty of Humanities and Social Sciences, all of Khon Kaen University, has been applying an action-learning approach to test and develop the use of community organizers in organizing and coordinating local participation in the process of agency implementation. Financial support has been provided throughout by the Ford Foundation.

From 1985 to 1987 research and experimentation with community organizers directly hired and supervised by the Water Resources and Environment Institute in the Small-Scale Irrigation System showed that their role in coordinating within project communities and between project communities and the Royal Irrigation Department could significantly increase farmer participation in planning and decision making before and during construction. The Small-Scale Irrigation System did this by first defining essential community-organizer activities and methods and then refining the timing and coordination linkages required to enable farmer participation in the context of existing Royal Irrigation Department procedures.

The Farmer-Participation in Small-Scale Irrigation Projects (July 1987 - June 1989) evolved from the Small-Scale Irrigation System Project, with the major difference being that the hiring, supervision, and support of community organizers became the responsibility of the Royal Irrigation Department. In this phase, emphasis has been on developing systems for the supervision, guidance, and support of community organizers and for coordinating information on project communities and issues in the implementation process between relevant units and offices.

THE ROLE OF THE ROYAL IRRIGATION DEPARTMENT COMMUNITY ORGANIZER IN FARMER-PARTICIPATION IN SMALL-SCALE IRRIGATION PROJECTS

The role of the community organizer in assisting farmer participation may be divided into three main functions summarized as follows:

Organizing Local Participation in Planning and Decision Making

This process emphasizes getting community leaders and expected project beneficiaries to participate in specific activities and gaining consensus on local needs, namely: project-site selection; designating the appropriate water-storage level; identifying constraints to free access to land and land clearing; choosing acceptable outlet position(s), canal layout, and road access to project site (if any); and planning for utilization and maintenance. The community organizer

facilitates discussions in which these issues are raised, and stimulates villagers' efforts to resolve problems and to mobilize labor as well as resources for various project-development activities. The informal group developed through this organizing and catalytic process serves as a foundation for the more formal Water Users' Group established later by government officials.

One of the challenges for community organizers working in multipurpose projects is the identification of the 'organizing unit.' Often the level and distribution of benefits are difficult to anticipate and in many projects this uncertainty is only dissipated over a period of several years as farmer experience, project use, and management evolve. This is a major reason for continuing community-organizer follow-up for one year of post-construction extension.

Coordinating Information between the Royal Irrigation Department and the Villagers

This process begins with studying and gaining an understanding of community experience in small-irrigation development and local needs and concerns so that they may be summarized and relayed to relevant Royal Irrigation Department officials through the socioeconomic profile. At a later stage, design is presented to villagers, with technical advice and support from the Royal Irrigation Department engineers while community organizers coordinate requests for any design changes. Finally, the community organizer serves to prepare each community for dealing with issues which may arise during construction, by discussing activities and procedures while it is in progress. In working with villagers to open opportunities with the agency and to catalyze local interest and involvement in project development, community organizers seek not only to disseminate information and news of the project as widely as possible but to coordinate discussions of issues with individual villagers, small groups, and eventually with the largest groups comprising farmer beneficiaries. This initiating role serves as a base for local participation in decision making.

Coordinating with Relevant Government Officials in Providing Guidance, Assistance, and Training to Enhance Villagers' Skills

Within the Royal Irrigation Department. To assist villagers to understand the characteristics of the Royal Irrigation Department weirs and small reservoirs, as well as to stimulate interest in project use and maintenance, community organizers coordinate assistance from the Royal Irrigation Department and from other agencies not only to hold short training courses to bring villagers to visit farmers at other Royal Irrigation Department projects but to hold slide shows of project use and maintenance. During construction, the Royal Irrigation Department officials provide technical advice on project potential and canal layout. They may also negotiate with contractors who own construction equipment to assist villagers in special ways outside their contract responsibilities. Timely and well-directed assistance in line with villagers' needs and constraints can contribute to villagers' positive perceptions and later development of the project.

Within Local Administration. Community organizers must also seek to involve district and *tambon*-level (village level) officials as much as is feasible. The first step in the community-organizer work is to report to district officials which process must be maintained on a regular basis to ensure cooperation. Since local administration will eventually be responsible for project extension, this early coordination is aimed not only at involving these officials in resolving problems that arise, or attending village irrigation meetings, but also at developing a foundation for continuing support.

THE FRAMEWORK OF CURRENT COMMUNITY-ORGANIZER IMPLEMENTATION

Timing of Activities

The lead time allowed for organizing farmers is generally about two months prior to project design and approximately five months prior to construction.

Community-Organizer Work Load

A community organizer is assigned to work in two project communities prior to construction each year and continues follow-up of these sites for one year after completion of construction. In addition, during the second year, the community organizer begins work in two new projects planned for construction.

The Community-Organizer Position within the Royal Irrigation Department

The community organizer is assigned to a Provincial Royal Irrigation Department office which has responsibility for operation and maintenance of medium-scale projects and which conducts an annual inspection of small-scale projects following construction. The community organizers are currently under the supervision of officials holding several different positions, depending on the availability of personnel in each province. The position of the community organizer is still that of a temporary employee, with relatively low wages and few benefits. There is as yet no opportunity for any type of advancement.

The Royal Irrigation Department Supervision

The community organizers require regular follow-up and guidance as well as periodic in-service training, especially during the first year when much is learned on-the-job. Community-organizer monthly meetings are one forum for this, and are by necessity complemented by monthly on-site visits to community organizers. Although the Royal Irrigation Department possesses the technical skills and expertise to guide community organizers in design and construction issues it is not yet equipped to advise community organizers on methods and approaches to develop local-management capacity at the community level. Farmer-Participation in Small-Scale Irrigation Projects' field-advisory staff has helped to fill this gap; they have also helped community organizers identify relevant issues. Maintaining a development orientation among community organizers, through guidance and moral support is at present possible primarily through Farmer-Participation in Small-Scale Irrigation Projects assistance. Developing these capabilities within the Royal Irrigation Department should be a long-term objective.

Community-Organizer Financial Support

The budget for community-organizer wages and support is currently drawn from contingency funds of the annual small-scale construction budget managed by the Royal Irrigation Department regional offices. There is a lot of competition for these funds among the many units involved with project implementation, whose work is not specifically cited in project estimates.

Community-Organizer Recruitment

Two alternative approaches were tested with community organizers recruited from the pool of recent graduates in the social sciences or agriculture and from among officials and temporary employees already working with the Royal Irrigation Department. Utilizing existing Royal Irrigation Department personnel as community organizers revealed many difficulties: existing primary-work responsibilities which leave little time for community-organizer work; a technical rather than a social orientation; earning less than in their previous position (community organizers are not entitled to per diem for field work as are people in other positions); lack of any potential for promotion or career advancement. In addition, most Royal Irrigation Department officials are married and are reluctant to remain for long periods in village communities. Thus, current testing is with community organizers recruited from outside the Royal Irrigation Department.

Community-Organizer Training

In general, there are three types of community-organizer training, namely: initial training, in-service training, and learning by doing complemented by feedback and guidance of Farmer-Participation in Small-Scale Irrigation Projects' field-advisory staff.

CONDITIONS AFFECTING COMMUNITY-ORGANIZER IMPLEMENTATION

Results from research done to date examining the role of community organizers show that their ability to work successfully to facilitate adequate farmer participation depends on conditions at several levels.

The Community and Project Levels

1. Community leadership and the quality of communication exchange within the community. Where community leaders fail to pay attention to the opinion of the majority, farmers have little motivation to participate in water use and maintenance activities.
2. Local experience concerning water-resources development can serve as a base for planning and organizing local participation in development of the new project and for evolving local-management capabilities to optimize project use.
3. Technical potential of a project to provide benefits and meet local needs. The variability in local conditions and project potential in small-scale projects is high. Projects viewed by villagers as appropriate and useful inspire local concern for project development. Where benefits are limited so is local interest and willingness to spend time in project-centered activities.

Community Organizers' Background and Motivation

1. A major condition for community-organizer work is a thorough understanding of the community in which they work. Gaining an understanding of local conditions requires patience, perseverance, and a commitment to remain in project communities as long as possible.
2. Implementation of community-organizer work must be closely coordinated with planning, design, and construction at each step of the process. Lack of technical knowledge lowers community-organizer credibility in the eyes of the design engineer as well as of the farmers.
3. Many community organizers have had little previous experience in community-development work, requiring them to spend much time during the first year learning basic development skills on the job.

The Agency and National Policy

1. The concept of people participation proposed by our project must be integrated into the Royal Irrigation Department system in an accommodating way. This will not be possible

unless the Royal Irrigation Department is granted additional budget specifically for community organizers and this type of work.

2. Agency officials tend to overlook indigenous experience with water-resource development and the importance of giving information to villagers about the work process and procedures. The concept of farmer participation is not accepted easily in practice. Agencies have as yet few incentives to encourage people to become involved.
3. Current policy maintains that local administration, and not technical agencies such as the Royal Irrigation Department, should be responsible for project preparation (involving initial organizing work) and extension. The Royal Irrigation Department also tends to view its role as purely technical, thus separating social and technical concerns.
4. Current national policy emphasizes meeting local needs for drinking- and domestic-water supply first, with water for agriculture a secondary concern. To be useful, a community organizer should work where the potential is more than just for water storage for domestic use. The greater the potential for widespread agricultural benefits, the more useful the community organizer.

WHAT HAVE COMMUNITY ORGANIZERS BEEN ABLE TO ACHIEVE?

The usefulness till now of community organizers in enabling several new processes to occur in project implementation can be briefly summarized as follows:

1. Giving villagers a voice in design has led to several changes which facilitate project development. These include adding or moving an outlet to fit local plans for canal development, incorporating stop logs to allow flexibility in water management, and shifting the position of embankments to resolve conflicts or to gain consent of right of way to enable construction or canal development.
2. Awareness of project plans and agency procedures leads to improved local capacity to anticipate and resolve problems and to wider distribution of benefits. It also helps to maintain the good will essential to community efforts in project development.
3. The process of developing and strengthening of community capabilities in water-resource management begins during project planning and is the basis of the strategy of farmer participation.
4. Development of canals, where feasible, is not necessarily a spontaneous process. Those closest to the water source are assured of a water supply and in fact put themselves at a disadvantage in allowing canal right of way by conceding land, as well as by creating a situation requiring them to share a limited water supply. Organizing villagers to lay out canals with the Royal Irrigation Department support during or immediately following construction, enables joint resolution of social and technical concerns and can greatly increase project benefits, even in the first year of project use.

5. According to national policy, local district and subdistrict officials are responsible for following-up and promoting project utilization and maintenance. Most of these officials are not, however, aware of this policy. Drawing these officials in to help motivate project development or to resolve local conflicts is assumed to enhance project use and maintenance.

CONCLUDING REMARKS

What is needed at this point is for the Royal Irrigation Department to further define and delineate the methods required to support farmer participation and the work of community organizers, and to make a more firm commitment to institutionalizing this approach. At present the Royal Irrigation Department is awaiting approval of a request for a special budget for community organizers for small- and medium-scale projects included in a package of strategies for developing increased farmer participation.

Many issues aside from budget remain to be resolved:

- * Improvement of the system for monitoring and evaluating community organizers.
- * Assigning the Royal Irrigation Department community-organizer supervisors with the time and motivation to conduct this work.
- * Acceptance of the community-organizer role and the importance of farmer participation by technically minded agency engineers.
- * Addressing issues related to community-organizer benefits and incentives and the drain of experienced community organizers to more rewarding employment.
- * A policy commitment accepting the role of community organizer as an essential component of the process of project development.

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Opening Active Communication between Agency and People's Irrigation Associations through the Farmer as Social Organizer in Jointly Managed Irrigation Systems

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INTRODUCTION

INVOLVING THE THREE parties of agency, farmers, and university in the irrigation-management process is complicated. Although still at an early stage in Thailand the slow diffusion and utilization of research knowledge is already evident. A critical review of previous development performance has led to the conclusion that farmers must be directly involved in planning and working in all stages of project development; not as clients, not as participants, but in the key role as social organizer to facilitate a joint-management practice.

Joint-management of an irrigation system requires active communication and information exchange in the decision-making process. Tripartite efforts have been directed at initiating timesaving direct communication and cost-reducing methods for all parties involved. From previous experience it is known that hiring and training field professionals as social organizers are very costly. Due to regional variation, implementation of a nationwide program would lead to mixed results. Where local people's organizations are already resourceful and functioning to sustain community-irrigation tasks, as in the northern Thai region, there is much opportunity for successful joint-management using farmers as social organizers.

This paper proposes a model in which farmers serve as social organizers in irrigation-management development of medium-scale reservoir systems, as demonstrated at the Mae On Basin Project. Experienced farmers with supplemental training have been working to facilitate interaction between local Peoples' Irrigation Associations and the Royal Irrigation Department in operation and maintenance.

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PROJECT BACKGROUND

During the past few years, the Royal Irrigation Department has been applying responsive minimum-intervention policies in northern irrigation development. It has been widely recognized that there are no new sources of water to be captured and thus no sites for new construction. Only rehabilitation and replacement schemes will be effective economic and technical undertakings. Most schemes carried out by the responsible agencies have been purely technical solutions unconcerned with involvement of the beneficiaries and the human element in management. These schemes critically require assistance to improve irrigation management such as can be applied in a tripartite strategy. The Mae On Reservoir project is a medium-scale irrigation system built by the Royal Irrigation Department during the last five years. The system has been in operation for three years. During the design stage the Royal Irrigation Department's approach was to reduce its direct intervention at the level of individual, existing people's irrigation systems. The scheme was designed to allow the people's irrigation systems to continue functioning as usual, with the reservoir providing increased storage capacity and reliability for wet-season cropping, as well as sufficient supply for people's irrigation systems areas which had never before been under dry-season cropping. The Mae On Reservoir has a storage capacity of 4.5 million cubic meters, enough to irrigate about 960 ha (6,000 rai) under 8 people's irrigation systems. The Mae On River previously fed water to 22 small people's irrigation systems, consisting of a head section of 10 people's irrigation systems and a tail section of 12 people's irrigation systems. Farmers in the tail area obtained additional water from several small streams and the people's irrigation systems at that time worked independently to serve their members.

The changes required in the Royal Irrigation Department management, personnel, budget, and procedures to deal with this new approach were no less drastic than those for local communities and intersystem relationships. New management demands more intensive and stricter control of intersystem allocation or basin-level water sharing. Operation has to be managed jointly by farmers and the Royal Irrigation Department to coordinate upstream and downstream water use and to sustain a certain volume of Mae On water on storage. Linking all parties into an effective management system is essential. To accomplish this social scientists strongly recommend the use of social organizers.

The linking of research and development efforts with irrigation-management innovation is a necessary step in northern Thailand. A research base is being established at Chiang Mai University under a grant from the Ford Foundation. Social scientists are working in collaboration with the Royal Irrigation Department staff of the Operations and Maintenance Division of Regional Office I and with Peoples' Irrigation Associations to implement the joint-management model. Given the existence of active and experienced Peoples' Irrigation Associations using farmers as social organizers with supplemental training seems feasible. The question being asked in ongoing implementation is whether to use farmers as social organizers in joint-management systems, and if so, can this bring about the desired result, and under what circumstances?

In the Mae On project, the Royal Irrigation Department is experimenting with a new model of farmer-agency management of medium-scale reservoir system. The Royal Irrigation Department's post-construction plan includes four subprojects covering the following major tasks: 1) promotion of the formation of a federation of Peoples' Irrigation Associations, with a linkage between the Royal Irrigation Department and the federation, 2) the practice of joint planning and operation in water allocation, distribution, and scheduling for dry season cropping, 3) demonstration and

promotion of appropriate cropping patterns and water-delivery arrangements for dry-season cropping to improve water utilization, and 4) facilitation of successful marketing of dry-season crops. Under this scheme, researchers of Chiang Mai University are responsible for providing reports and case studies analyzing the development process through each stage, and for serving as feedback to the implementors and policy makers of the Royal Irrigation Department. A nongovernment organization works with researchers to manage a series of training sessions and study tours for Peoples' Irrigation Associations and farmers.

The methods employed in the four major areas of work under this project are: 1) an inventory and information-exchange system, 2) policy and plan dialogue, 3) networking among Peoples' Irrigation Associations and leaders, and 4) developing a federation type of organization at the basin level. The purpose of the first two methods is to create a flow of information and communication between the Royal Irrigation Department and the Peoples' Irrigation Associations. The latter two contribute to the organizational development required for joint-management of the system.

CHARACTERIZING JOINT-MANAGEMENT SYSTEM IN IRRIGATION

To sustain effective joint-management of a system a certain set of characteristics and operational principles must be established. In the Mae On Project the emphasis is on:

- * Joint-problem solving.
- * Maintaining open, active communication.
- * Establishing joint decision-making mechanisms and procedures which allow both parties to address their problems and express their opinions.
- * Active participation by all parties in all activities initiated either jointly or by a single party.
- * Sensitizing each party to the problems and limitations of the other.
- * Equitable sharing of benefits and opportunities as well as of responsibilities.
- * Maintaining appropriate attitudes towards one another.
- * Stimulating improvement of each party's capabilities.
- * Sharing the risks of actions required to achieve sustainability and efficiency.

WHY A FARMER SHOULD TAKE THE ROLE OF SOCIAL ORGANIZER

A number of reasons may be given in support of using farmer social organizers:

1. Farmers tend to perceive the Royal Irrigation Department professionals as outsiders or government men. A farmer social organizer, on the other hand, is perceived as an insider,

Summary of the major tasks required of each participating party.

Royal Irrigation Department	Chiang Mai University	Peoples' Irrigation Associations
1. Developing and promoting formation of water users' groups for reservoir management	1. Documenting development activity/process	1. Forming inter-Peoples' Irrigation Association cooperation and organization
2. Encouraging joint-planning and operation	2. Methodology development	2. Carrying out inventory
3. Developing operation and maintenance methods and procedures	3. Case studies	3. Doing sample survey and reporting
4. Practicing information utilization, exchange and direct communication through reporting and meetings	4. Developing training materials	4. Planning and participating in meetings, workshops, and study tours
5. Introducing private marketing sector to assist farmers required	5. Organizing meetings and training as Peoples'	5. Training other less-experienced Irrigation Associations

a coordinator whose authority is, or authorized responsibilities are, legitimized by local farmers through the well-accepted practice of community leadership.

2. Given that the participatory approach is a national-policy guideline, employing professionals as social organizers in extensive implementation will create a heavy financial burden. Even temporary or short-term use of them will create high expectations and dependence on external assistance.
3. Joint-management of an irrigation system and the tripartite development scheme are complex and need a strategy to strengthen direct communication, rather than an indirect communication channel through an employed social organizer.
4. In institutionalizing organizer professionals, the agency has to deal with social-organizer succession or rotation and project sustainability. The movement of a farmer social organizer into and out of the catalyst position or responsibility can be arranged when necessary, by replacing one appropriately trained farmer with another, with minimal disturbance to the organization or program.

5. Farmers in the role of social organizers reflect less of a gap between the social organizer's and the water users' needs, attitudes, and values, while establishing direct communication with the Royal Irrigation Department.
6. The Royal Irrigation Department has had little incentive to invest in sociocultural and economic research and surveys for use in planning and operation. A simplified system of data collection requiring minimum data and needing little training for its use can be designed by researchers. Such a system may be used by farmers who are familiar with the situation in the field.
7. It is well-known that there are many qualified, experienced farmers who can be tapped into the system under a participatory model.

REVIEWING AN INFORMATION SYSTEM IN A PEOPLE'S IRRIGATION ASSOCIATION

Much research on traditional irrigation organizations in northern Thailand (Coward, Tanabe, Abha, Wanpen, Uraivan) has confirmed the innovative thinking, flexibility, and quick learning capability of northern farmers. Agricultural-development records also support this observation. In addition, systematic information collection, careful historical recordkeeping and reporting as an indigenous practice of Muang Fai organization (People's Irrigation Association) have been reported (Uraivan 1983, 1985, 1987). The Muang Mai Organization of Chomthong District in Chiang Mai has used an information system as a built-in mechanism and management tool for many decades. Having analyzed these information bases and methods of collection the author believes that the capability of these farmers should be utilized in the present scheme, and will be useful in encouraging diffusion of the practice to those People's Irrigation Associations/Leaders that do not now have them.

Farmer Social Organizers' Roles

The roles of the farmer social organizers in the ongoing project at Mae On are carefully aimed at:

1. Stimulating the process of inter-Peoples' Irrigation Associations/federation formation, and facilitating improvement of water users' problem-solving capabilities.
2. Assisting Peoples' Irrigation Associations to establish a system of information exchange, active communication with the Royal Irrigation Department, and finally at achieving a real farmer-agency management system.

3. Assisting the Peoples' Irrigation Association Leaders in conducting systematic routine data collection and recordkeeping for use in collaborative operation and maintenance with the Royal Irrigation Department, in a process which will be institutionalized into Peoples' Irrigation Association procedures.
4. Coordinating with the Royal Irrigation Department activities related to irrigation management and linkages with outside agencies.

Though a long list of qualifications is required, local leaders in typical villages meet many of the necessary aptitudes. Aside from literacy, many qualifications relate to interest and the ability to work well with people, and with both local and government officials. Motivation is critical as well, since the farmer social organizer must be willing to work on a semivoluntary basis with small compensation and modest expenses. The farmer social organizer is expected to work part-time and to carry out his responsibilities in harmony with his private farming. Some of the missing qualifications could be provided in short training sessions.

PROCEDURES

The following procedural steps to achieve this model have been experimented with for several years:

1. Identifying experienced, innovative Peoples' Irrigation Association Leaders and familiarizing them with information on this strategy and method.
2. Getting selected leaders to work on some format of recordkeeping and data collecting such as an inventory technique.
3. Arranging workshops to discuss and improve methods and procedures.
4. Circulating information to the Royal Irrigation Department channels and getting feedback.
5. Finalizing the data-collection form through joint efforts.
6. Organizing data on cropping for use in joint planning.
7. Encouraging efficient data collection and utilization through workshops on crop planning, proposal writing to agencies, etc.
8. Finalizing appropriate methods and setting the minimum standard data.

Methods used to carry out the above procedures were meetings, farmer-to-farmer training, and study tours.

LIMITATIONS OF THE FARMER SOCIAL-ORGANIZER MODEL

1. *Preconditions.* Opportunities for using farmer social organizers are contingent on an enabling environment with the presence of efficient local organizations and farmer leadership.
2. *Familiarity.* Where a system of information management does not yet exist local people lack interest and awareness of the usefulness of information. An attempt to install farmer social organizers into the management system may be possible, but is difficult in practice.
3. *Risks.* Establishing an informal structure is a risk for the project. If farmer social organizers have soft personalities and are not properly trained, they may be influenced by the local power structure and politics, in which poor farmers normally have little share.
4. *Beginnings.* The interest and willingness of the Royal Irrigation Department and farmers to work collaboratively have to be established at the outset, prior to actual joint activities. This is not a simple task.

ADVANTAGES OF THE FARMER SOCIAL-ORGANIZER MODEL

1. *Participation.* Applying the farmer social-organizer model and assigning the catalytic role to farmers by itself increases the real participation of farmers and begins to create an environment conducive to local communities' involvement in development.
2. *Affordability.* The voluntary or semivoluntary structure of farmer social-organizer implementation is inexpensive and affordable even in an extensive program.
3. *Practical training.* Rapid, learning-by-doing job training is realistic, and can be arranged by the Royal Irrigation Department's Mobile Campaign Unit or local nongovernment organizations. Farmer-to-farmer training is also feasible.
4. *Sustainability.* Enlisting farmer social organizers for this role, helps to create a built-in, ongoing mechanism to facilitate management development.
5. *Self-reliance.* Farmer social organizers gradually impart to Peoples' Irrigation Associations and communities, the confidence and self-reliance to deal with external agents and agencies, with the changing environment in irrigation and other fields.
6. *Information exchange.* The farmer social-organizer model, if applied successfully, can reduce risks in government investment in irrigation by developing a system of farmer-agency information exchange and active communication for improved planning.
7. *Informality.* The farmer social-organizer model is generally recognized as having a low degree of formality. This informality eases communication, facilitates trust, and corrects the inadequacies of the formal system.

Summary Results of Small Group Discussions

DISCUSSIONS COVERED THE following issues:

1. Farmer participation.
2. Supporting policies to the farmer participation program.
3. Alternative approaches.
4. Social-organizer implementation.
5. Flexibility and sustainability.
6. Institutionalizing the social organizer into the system.

FARMER PARTICIPATION

Farmers' participation is defined here as a transferring of decision-making powers in system development and management to farmers. This participation consists of authority to take decisions and resource mobilization (e.g., ideas, money, manpower, and materials). The type of farmers' participation varies according to the type of irrigation-system management. There are three types of system management: agency-managed, farmer-managed, and jointly managed.

The objective of farmers' participation is to develop cooperation between the government and the farmers which will bring fruitful results for farmer-managed irrigation systems. Negative experience in the past with inappropriate participation shows that there is a need to review the approaches being taken to involve farmers in irrigation development. Research has shown evidence of a remarkably high-management potential in indigenous farmer-managed irrigation systems. Evidence from recent experiences in many areas indicates increasing farmer involvement and participation, in terms of achieving increased self-reliance and a sense of ownership. One approach being taken to enable farmer participation is through the use of social organizers.

Through the actions of social organizers in farmer-managed irrigation systems, the following benefits have been attained:

- * Cohesiveness among farmers.
- * Reduced social problems attributable to irrigation development.
- * Improved equity in water distribution.
- * Greater certainty of water delivery.

- * Enhanced internal resource mobilization to sustain operation and maintenance through farmer participation.
- * Increased capital build-up and improved self-reliance.

Farmers' participation is influenced by government policy and bureaucratic procedures. The following issues should be addressed:

- * Need for strong and continuous support of social-organizer role.
- * Need for consistency in implementing the policy.
- * Legal provisions recognizing farmer participation.
- * Reassessment of bureaucratic procedures consistent with farmer participation.
- * Conditions for promotion of government officials who promote farmer participation.
- * Developing the understanding of agency staff with regard to the social-organizer role.

In short, there is a need for bureaucratic reorientation which could be done through:

- * Intensive dialogue in working groups held among agency staff, planners, research institutions, and farmers.
- * Providing incentives for government officials to promote farmer participation.
- * Developing appropriate bureaucratic procedures responsive to farmer participation.

SUPPORTING POLICIES TO THE FARMER-PARTICIPATION PROGRAM

Policy Objectives

1. To increase farmers' capabilities, self-reliance, and sense of ownership.
2. To promote farmer participation in developing and managing irrigation systems.
3. To support development of appropriate interventions by government agencies, nongovernment agencies, and the private sector which relate to objectives 1 and 2 above.

Suggested Supportive Policies

1. Legalization of water users' associations could make these groups more effective in system management. For example, they would have access to credit for improvement of the physical works. The legal basis of water users' institutions, also gives a legal basis to social-organizer activities. Local ownership should be supported by a legal framework in the following manner:

- a) Mandatory turnover of systems where feasible and in an appropriate time frame.
 - b) Community privatization of systems where feasible.
 - c) Legalized status of water users' institutions.
2. Government recognition and support of social-organizer roles and openness to cooperation both within and outside the bureaucratic structure.

Suggested Supportive Initiatives

To persuade decision makers of the value and feasibility of farmer participation, there are a number of methods which have proven useful. These include pilot projects, field trips, workshops and seminars, impact research with documentation and reports, the creation of working groups which include key agency personnel, and other activities depending on the particular environment.

ALTERNATIVE APPROACHES

Any approach using social organizers must address the issue of how to harmonize the technical and social aspects of system development and management. Three alternative approaches have been identified as enabling social organizers to help facilitate this process:

1. Development within a single organization.
2. Tri-lateral coordination efforts comprising research institutions, the irrigation department, and farmers.
3. Involvement of universities, nongovernment organizations, and other independent organizations in the transitional period and, in the long run, letting the government (with the assistance of universities, nongovernment organizations or other independent organizations at the macro-level) and the private sector implement the approach.

SOCIAL-ORGANIZER IMPLEMENTATION

Determination of an appropriate form of social-organizer intervention requires assessment of specific national policy, organizational structures, program and project characteristics as well as community conditions.

Social-Organizer Roles, in Relation to Supportive Policy Objectives

- * Facilitating the formation and development of water users' associations.
- * Enabling farmers to acquire appropriate coordinative skills for dealing with line agencies involved in agricultural development.

The breadth of the social-organizer role and the varying emphasis among different programs in different contexts are reflected in the number of terms being used to describe the social organizer. These include institutional organizer, community organizer, irrigation-community organizer, field organizer, group organizer, and association organizer.

Social-Organizer Qualifications

The role of social organizer implies an innovative process, commitment, and the capability to work with farmers and concerned agency staff for the benefit of farmers. With this in mind a social organizer can be chosen from within the community and within the agency or elsewhere, depending on the particular type of work. To be qualified social organizers should have the following characteristics:

- * Know the dialect as well as the culture, customs, and beliefs of the area in which they work; possess good communication ability and be self-motivated to carry out the social-organizer roles.
- * Any educational background is acceptable, but they should be open to a sociotechnical orientation and supplemental social or technical training.
- * Interested, committed, and willing to learn.
- * Physically fit.

Social-Organizer Recruitment Process

The recruitment process should serve to test social-organizer qualifications. Field exposure to test commitment and skills should be a part of this screening process. Representatives of all parties directly involved in social-organizer implementation, and especially the social-organizer supervisor, should be involved in the recruitment process. The goal is to have the social-organizer implementing agency directly recruit social organizers; however, this capacity may need to be developed within the agency as part of the social-organizer program, with another agency assisting during the early stages.

There are two main modes of recruitment: permanent and temporary (contractual, ad hoc) for a specific period.

Social-Organizer Training

Four kinds of training are appropriate for social organizers:

- * A series of task-oriented training sessions.
- * Training for a specific time with a fixed curriculum.
- * Horizontal training, i.e., bringing people of the same level together (agricultural extension, social organizer).
- * Vertical training, i.e., bringing people from different levels together.

Experience in several countries indicates that it is useful, besides an initial training, to also plan later periodic training sessions on the basis of issues and problems anticipated in each upcoming activity or phase.

Supervision of Social Organizers

The following types of supervision are required:

- * Regular visits to social organizers.
- * Guidance.
- * Explanation of expected role of the social organizer.
- * Mediator for social organizer passing information to higher levels.
- * Assessment of training needs.
- * Monitoring and evaluation.

The bodies responsible for supervision on a permanent or transitional basis are:

- * Institution (nongovernment organization) itself.
- * Research group.
- * Advisory group.
- * Concerned agency.

Supervision and evaluation of the social organizer should maintain the accountability of social organizers to the local community.

Social-Organizer Incentives and Motivation

Incentives include both financial remuneration (such as wages, per diem, and logistical support) and nonfinancial benefits such as recognition, acceptance, security, and involvement in the process of project decision making. The types of incentives or motivation may be looked at in

terms of the social organizer's organizational affiliation or location, as shown in the following table.

Social organizer incentives and motivation.

Location	Type of	
	Motivation	Incentives
Nongovernment agencies	<ul style="list-style-type: none"> * Self-motivated/self-reliant through training * Flexible of non-government agencies (organization) 	<ul style="list-style-type: none"> * Sufficient financial remuneration * Recognition of their roles
Agency	<ul style="list-style-type: none"> * Through training * Study tours * Decision making authority * strong, clearly defined policy with regard to social organizer role 	<ul style="list-style-type: none"> * Job security * Career development and promotion, including financial remuneration
Farmers (within community)	<ul style="list-style-type: none"> * Recognition of the role of the social organizer * More authority/influence * Self-motivated 	<ul style="list-style-type: none"> * Financial remuneration * Continuous support from other farmers and government agency * Recognition from agency

Criteria for Evaluating the Effectiveness of the Social Organizer

Social-organizer effectiveness should be evaluated, in the short-run, according to the extent to which assigned work or tasks are accomplished and the social organizer's presence in the field as well as, in both the long- and short-run, the extent to which farmers are able to manage their own system or to carry out responsibilities during all stages of project development. The criteria for measuring the effectiveness of a social organizer are summarized in the following table.

Criteria for evaluating the effectiveness of the social organizer.

Stages of irrigation development	Criteria
Preconstruction	<ol style="list-style-type: none"> 1. Ability to create awareness of implementing-agency procedures regarding project implementation. 2. Ability to get farmers' input in information gathered and decision making in design. 3. Stimulate farmers' consensus for resource mobilization (i.e., materials, manpower). 4. Ability to identify and develop farmers' leaders and working committees for project implementation. 5. Ability to interface the technical and institutional aspects smoothly.
Construction	<ol style="list-style-type: none"> 1. Ability to stimulate farmers to implement, (their) consensus reached (in any obligations). 2. Ability to interface the technical and institutional aspects smoothly. 3. Ability to encourage farmers to participate in construction activities.
Post-construction operation and maintenance	<ol style="list-style-type: none"> 1. Effectiveness of water users' associations in operation and maintenance and resource mobilization for operation and maintenance on their own.

FLEXIBILITY AND SUSTAINABILITY

There is a need for flexibility in implementation of the program which can assure the sustainability of the role of the social organizer. The sustainability of water users' association's performance in management and maintenance requires monitoring after pullout of the social organizer, within a certain time frame.

INSTITUTIONALIZING THE SOCIAL ORGANIZER INTO THE SYSTEM (BUREAUCRACY)

Institutionalization requires that social and technical aspects be harmonized. This may be accomplished by developing capacities for structural information, and human-resource management within the agency or by strengthening the linkages between agencies. This may require some bureaucratic reorientation and in both cases, the key is the coordinating body. Therefore, appropriate mechanisms must be generated to provide regular support and facilitate coordination to the farmer-participation program during and after implementation.

Recognition and support of the role of the social organizer by the implementing agency are needed to legitimize the social organizer in strengthening system management.

SUGGESTED WORKSHOP FOLLOW-UP

1. Continue exchange of ideas through the Farmer-Managed Irrigation Systems Network and Newsletter.
2. IIMI should identify the relevant needs and concerns regarding social-organizer approaches and provide guidelines for reviewing individual social-organizer programs.
3. Participants should review and assess their own situations to develop clear strategies for each program to convince decision makers to work for supportive policy and procedures.
4. Potential components of such a strategy besides those noted in the preceding summary may include:
 - a) A workshop on operation and maintenance with both technical and social or institutional personnel.
 - b) Workshops on a national level as well as on an international level to address institutional/technical interface issues and develop mechanisms for effectively integrating these aspects in irrigation development.

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