WATER-USER ORGANIZATIONS IN IRRIGATION WATER MANAGEMENT IN THE GAL OYA LEFT BANK IRRIGATION SYSTEM

(A Case Study of Farmer Beneficiaries' Evaluation)

Mohamed Razaak
Jayantha Perera

Research Study No. 95 December 1995

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FOREWORD

This study on Water User Organizations in Irrigation Water Management, is a Case Study of a large scale irrigation system called the "Gal Oya Left Bank Irrigation Scheme", located in the South-East of Sri Lanka. The study was carried out by two Sociologists of the Institute.

The Gal Oya Irrigation System is a pioneer land colonization scheme of the country, constructed in the latter part of 1950s. After three decades of operation, the system was in a deteriorated condition. The Government of Sri Lanka, with financial support from USAID, launched a rehabilitation programme from 1979-1985. The Hector Kobbekaduwa Agrarian Research and Training Institute was entrusted with the task of establishing an institutional arrangement, which allowed greater farmer participation in the management of irrigation system. Under the programme, HARTI established Water User Organizations in most of the Gal Oya Left Bank Area. The project was officially completed in 1985.

This study analyses the strategy, process, and problems related to the development of water user organizations in the area.

Researchers found that during the initial period of the project, Water User Organizations performed well and their performances declined at the end of the project. Reasons for such a cyclical evolution of Water User Organizations vary. It ranges from degree of catalyst support to political interference in decision-making of organizational activities.

This brings up one of the fundamental questions of the theory of state-society relationships. In this way, researchers found that there were different interest groups who tried to manipulate resources under a common group logic. But none of the groups were concerned on the sustainability of the project. Thus, at the end of the project, many Water User Organizations established under the project were not very effective.

Since greater emphasis is given by the state and non-governmental organizations to promote farmer participation in agriculture resource management, this study has a direct relevance, as it provides some useful information for policy-makers and development practitioners. Finally, I would like to thank Mr. Mohamed Razaak and Dr. Jayantha Perera for their valuable contribution in carrying out this study successfully.

Dr. S.G. Samarasinghe
DIRECTOR.

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We also thank Mr. Joe Alwis and Mr. D.G.P. Seneviratne, former Directors and Dr. S.G. Samarasinghe, present Director of the Institute, for their encouragement and support given to expedite the publishing process of the report. Late Mr. Donald Abeysinghe, former Director of Social Service Department, edited the report.

We are also grateful to the farmers and farmer leaders in the Gal Oya Left Bank area for giving their valuable time and support to complete the field work very successfully.

Our thanks are also due to Miss. N.F.D. Miskin for typing several drafts of the report and Mr. Palitha Gunaratne for his extra-ordinary effort in the preparation of final script for publication. Finally, we thank Mr. K.A.S. Dayananda, Head, Publication Unit for his support and assistance offered to publish the report.

M.G. Mohamed Razaak
U.L. Jayantha Perera

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ABBREVIATIONS USED IN THE REPORT

AD	Department of Agriculture
AGA	Assistant Government Agent
ARTI	Agrarian Research and Training Institute
AI	Agricultural Instructor
CO	Community Organizer
DDI	Deputy Director of Irrigation
DC	Distributary Canal
FC	Field Channel
FR	Farmer Representative
GOLB	Gal Oya Left Bank
GOSL	Government of Sri Lanka
G	Gonagolla
IO	Institutional Organizer
ID	Department of Irrigation
IAR	Irrigation Water Management and Agrarian Relation of ARTI
ISTI	International Science and Technology Institute
IMD	Irrigation Management Division of the ID
IOPC	Institutional Organizer - Project Co-ordinator
IE	Irrigation Engineer
JP	Jala Palaka
KVS	Krushi Viyapthi Sevaka (Agricultural Extension Assistant)
MBC	Mandur Branch Canal
MO	Maintenance Overseer
NIBM	National Institute of Business Management
NIA	National Irrigation Agency in the Philippines
O&M	Operation and Maintenance
PD	Process Documentation
R&TO	Research and Training Officer
TA	Technical Assistant
USAID	United State Agency for International Development
UB	Uhana Branch Canal
VV	Vel Vidane (Village Irrigation Headman)
WUO	Water-User Organization
WMP	Water Management Project
YP	Yaya Palaka

CHAPTER ONE

Introduction

Since Independence (1948), a main priority in national-level development strategies in Sri Lanka has been irrigation-based agricultural development. This concern over agricultural development is directly linked with the government policy of Dry Zone development to increase food production and to ease population congestion in the Wet Zone. In the Dry Zone, the main constraint to agricultural development is not the scarcity of land but the non-availability of assured water for cultivation. To meet this challenge, the State has during the last four decades, constructed new reservoirs and rehabilitated old irrigation systems spending over Rs. 12,236 millions.

Table 1.1
Investment in Irrigation Infrastructure Development: 1950 - 1982 (Rs. in millions)

Period	Village Irrigation Works	Major Irrigation works	River basin works	Total investment
1950-54	16.4	171.9	84.7	273.0
1955-59	11.0	133.8	35.3	180.1
1960-64	6.4	153.6	15.3	175.3
1965-69	23.3	245.3	20.4	289.0
1970-74	70.4	175.0	280.7	526.1
1975-79	190.6	362.0	1654.2	2206.8
1980-82	285.4	1200.3	7100.0	8585.7
Total	603.5	2441.9	9190.6	12236.0

Source :Administrative Reports of the Irrigation Department and Progress Reports of the Ministry of Irrigation, Power and Highways, 1951-1982.

Several socio-economic factors hindered the efficient management of irrigation facilities in both refurbished and newly constructed major irrigation systems. Chief among them are the complicated system of tenure of individual land holdings, heterogeneity of settlers' socio-economic background and the resultant difficulties in bringing them together to operate and maintain irrigation systems.

In the 1970s, major irrigation systems witnessed rapid changes in their O & M activities as the State began to obtain large sums of foreign aid to rehabilitate old irrigation systems and to construct new irrigation systems. One important component of these new projects is the redefinition of the concept of 'irrigation water management'. The emphasis on physical management gradually shifted to embrace both physical and human aspects of management. This led to the new policy of incorporating beneficiary (farmer) participation in both physical and social infrastructure development. The rehabilitation programme of the Gal Oya Left Bank (GOLB) Irrigation System in the late 1970s provided a classic application of this new policy. It offered for both social scientists and engineers new challenges which led them to integrate their hitherto "isolated" activities into a comprehensive strategy of irrigation development and management.

The Gal Oya Rehabilitation Project, funded by the USAID and the Government of Sri Lanka (GOSL), had two main components: physical rehabilitation and the development of water-user organizations. The former was entrusted to the Irrigation Department, while the latter became the responsibility of the Agrarian Research and Training Institute (ARTI)[1].

The ARTI adopted a strategy called 'catalyst intervention' in developing water-user organizations in the GOLB. This strategy was adopted after a careful examination of similar experiments in Asia, particularly in the Philippines. The catalyst agents were called Institutional Organizers (IOs), who were expected to (i) catalyse the internal dynamics of farmer communities and (ii) to bring the irrigation bureaucracy and farmers together through several levels of water-user organizations. When the Water-User Organization Programme was officially completed in 1985, there were 380 water-user organizations in the GOLB.

1. Name of the Institute was changed as Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI) from Februry 1995.

Table 1.2
Number of Field Channel-level Water-user Organizations in the GOLB: as at 30th November 1985

Area[2]	No. of field-channel water-user organizations (in operation)	Number of Farmer-members	Extent of irrigated land covered (acres)
Uhana	95	1976	5064
Gonagolla	135	2273	7410
Weeragoda	108	2709	10173
Paragahakele	42	880	2600
Total	380	7938	25247

Source : ARTI (1986).

There were several problems that adversely affected the Programme. The chief among them being the difficulty of retaining a sufficient number of Institutional Organizers (IOs) in the Project. Many of them could not spend sufficient time in the field helping farmers to organize, strengthen and consolidate water-user organizations, which grew rapidly in number creating difficulties as the same IOs could not monitor the progress of several water-user organizations in a given locality. Moreover, diversity in approach and commitment and personality differences among IOs often tender to confuse farmers as to the aims and strategies of the Programme. The abrupt end of the Programme at the end of 1985 was not a result of the completion of the tasks identified but rather due to the exhaustion of funds. To remedy this, the ARTI and the Irrigation Department continued a skeleton Water-User Organization Programme in the GOLB. The Programme in the post-1985 period had essentially been a follow-up programme to monitor the functioning of water-user organizations in the GOLB and to utilize the experience gained when embarking on similar programmes elsewhere.

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2. The GOLB Water-User Organization Programme began in 1981 in the Uhana Branch Canal area, where physical rehabilitation works were in progress. The Programme was later extended to Gonagolla (1982), Weeragoda (1983) and to Paragahakele (1985) areas.

The follow-up programme was based on two inter-related assumptions:

(a) Since the Water-User Organization Programme had evolved over five years in the GOLB, there was a high chance that farmers possessed the capacity to establish and maintain their own water-user organizations with minimal external support.

(b) Related to this is the assumption that rapidly decreasing number of cadre of IOs which created a vacuum in the farming community, need not be a major problem for the Follow-up Programme as farmers were expected to evolve their own internal mechanisms to take over the role of IOs to continue their organizations.

As a component of this Follow-up Programme, the ARTI carried out an action-research programme in 1986 in the GOLB:

(a) to study farmers' views on water-user organizations as channels of improving water management and resolving conflicts over water distribution, and

(b) to help farmers enhance their own capabilities in evolving viable and independent water-user organizations.

When the Follow-up programme began in 1986, we soon realized that reports, papers and official memoranda that are available on GOLB farmers' activities and their perception of the WUOs as channels of improving water management were limited and biased. It was difficult to elicit from such documents how farmers perceived their role and functions in WUOs; they rather contained normative prescriptions the researchers and Programme implementors imposed on WUOs and their members and what they expected the farmers and WUOs to achieve as a result of the Programme.

In this context, we believe, a research study specifically aiming at discussing farmers' own evaluation of WUOs as a vehicle for bringing effective water management to the GOLB is relevant and appropriate. The Self-Evaluation Method[3] used in the Follow-up Programme provided excellent data

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3. See Annex No. I & II.

for this study. The manner in which this method assisted the farmers in strengthening their group activity, specifically in the sphere of WUOs will be discussed in a separate report.

This report has three objectives:

(a) to describe how the Water-User Organization Programme has evolved over the Programme's life time and the role of the Institutional Organizers (IOs) in this process.

(b) to assess farmer-beneficiaries' views and criticisms on WUOs. Whenever possible, beneficiaries' views are compared and contrasted with the views of agency personnel to check whether both groups had similar perceptions on important issues.

(c) to present a discussion on the participatory research method (Self-Evaluation Survey Method) in detail as it serves both as a data gathering method and as a technique of strengthening WUOs at the field channel level.

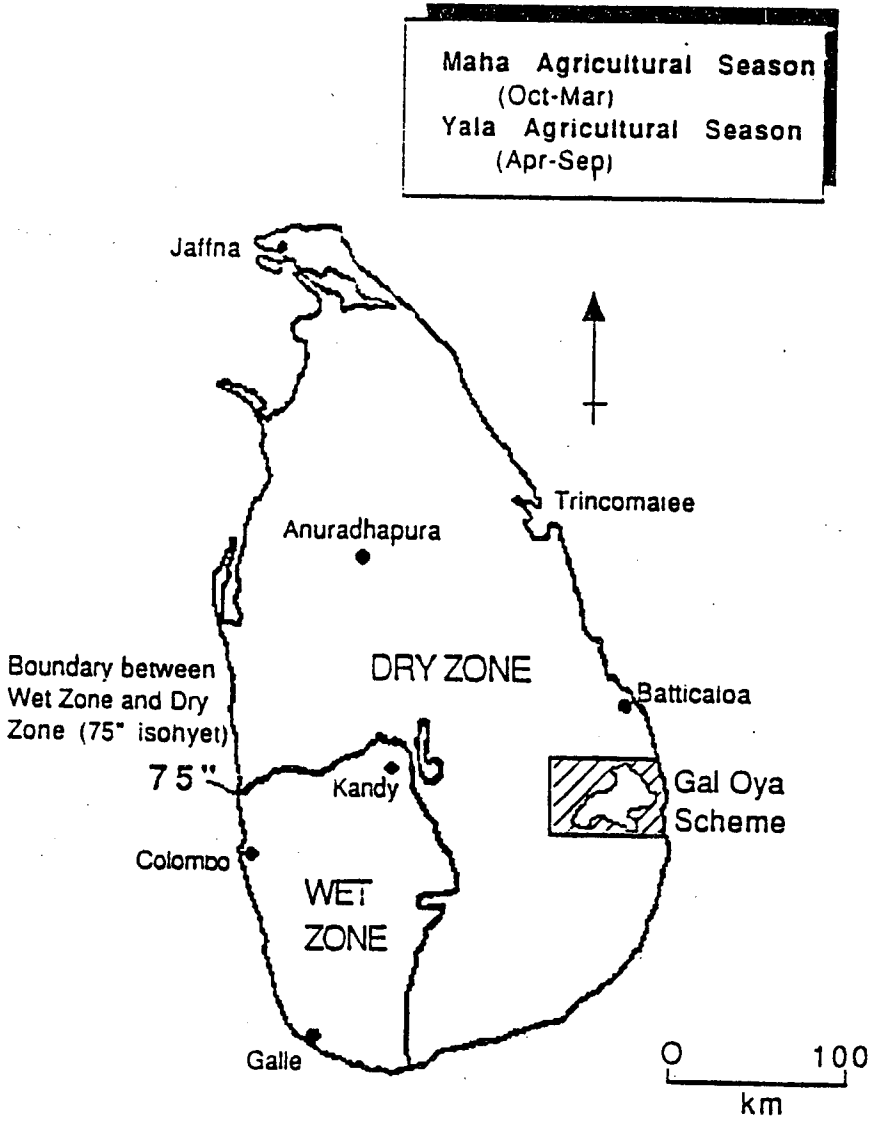
CHAPTER TWO

Pre-Rehabilitation Status of the Gal Oya Left Bank Area

2.1 Introduction

The Gal Oya Irrigation Scheme, the second largest irrigation scheme in Sri Lanka, is located in the south-eastern part of Sri Lanka (Map 1). The construction of its reservoir, Senanayaka Samudraya, began in 1948. A large dam was built across Gal Oya river at Inginiyagala and the construction of the irrigation system was completed in 1952. The command area of the scheme is about 50,000 ha (120,000 acres), which is divided into three divisions: the Right Bank, the Left Bank and the River Division. The Right Bank and Left Bank divisions are served by a conveyance system fed directly from the reservoir headworks, while the River Division is served by a series of diversion weirs across the Gal Oya River (Murray Rust 1983:39).

The scheme represented the first major effort of the State in the post-Independence era to colonize the Dry Zone of Sri Lanka. The principal objective of the scheme was to resettle landless farm families mainly from the Wet Zone, and providing them with an opportunity of ensuring improved living standards. As a multi-purpose development scheme, the objectives of the scheme included flood control, generation of electricity, opening-up of irrigable lands for paddy production and alienation of land to poor peasants. In the early 1950s, the Gal Oya Development Board commenced the setting up of colonization units in both Right Bank and Left Bank with Sinhala colonists mainly from the Wet Zone. In the tail-end areas of the Right and Left Banks and in the River Division, Tamil and Muslim farmers, who had been there for several generations, were resettled.



Map I : Location of the Gal Oya Scheme

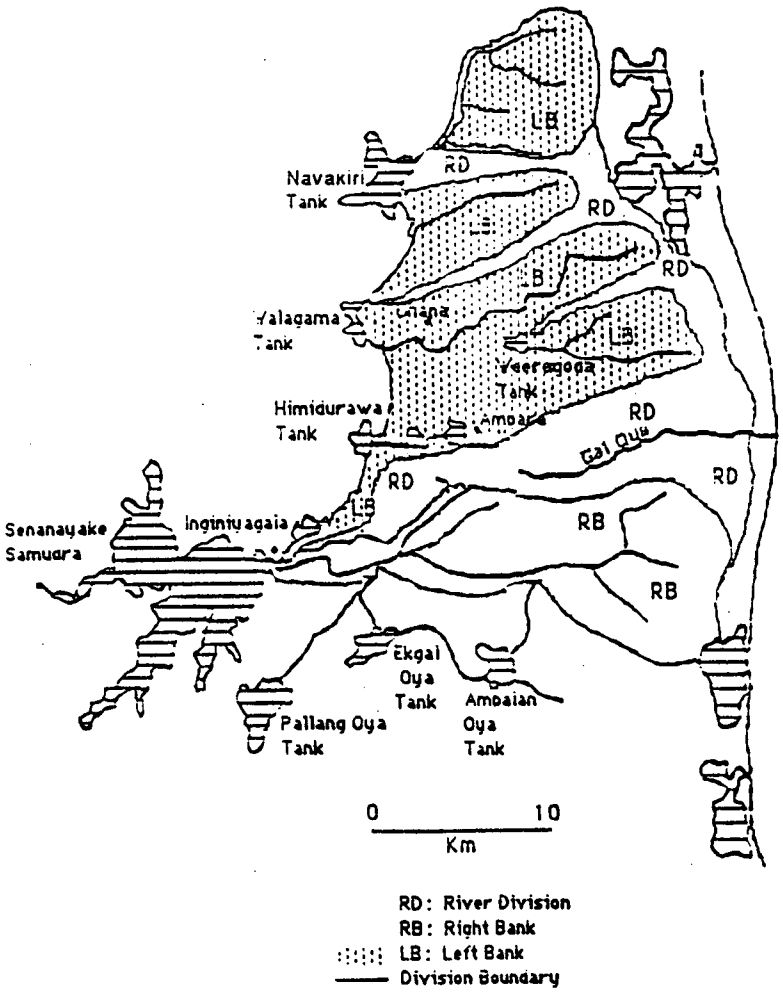
Three categories of colonists were selected for resettlement: (a) landless peasants from the Wet Zone; (b) landless peasants and fishermen from the Dry Zone; and (c) farmers who were displaced as a result of the Project construction. In selecting settlers, experience in irrigated agriculture was not given much weight as most of the settlers came from the Wet Zone where agriculture is mostly rainfed. However, attempts were made to resettle colonists in each unit with similar backgrounds; for example, settlers from the same administrative district were often resettled in the same colony unit. Thus names like 'Kegalle Colony' after the place of settlers' origin indicate their homogeneity at least in a regional sense. But the issue whether neighbouring colony units could co-operate with each other was not given sufficient attention in this exercise, although such co-operation was required, as there was no congruence between the colony (settlement unit) and its hydrological boundaries.

The GOLB (see Map II), on which this report is focused upon, is the largest of the three divisions with about 26,300 ha (65,000 acres) of irrigated land. This extent is nearly 50% higher than the original command of 17,200 ha (42,500 acres). The Left Bank irrigation system is comprised of 52km of main canal, 145km of distributary canals and 685km of field channels (Wijayaratna 1985: 119).

By the late 1970s, the colonization scheme in the GOLB was physically deteriorated, economically depressed and socially disorganized. This was due to several interrelated factors: the unequal and uneven distribution of water, land fragmentation and encroachments, heterogeneity among the settlers, lack of strong farmer leadership, mistrust between farmers and irrigation agency officials, and poor participation of farmers in the system management.

2.2 Physical Deterioration of the GOLB

The physical deterioration of the irrigation system was due to two inter-related processes. The first was that the Irrigation Department had failed to maintain the physical structures in good order and to distribute irrigation water efficiently, thereby contributing to the decay of the system. As a result of the poor management of the irrigation water, the water-users also neglected their duties towards the system management and misused irrigation facilities to their own individual advantage. Main system management in the GOLB in the late 1970s was at best, haphazard. For example, in the entire GOLB, the



Map II : The Gal Oya Irrigation Scheme

distribution of irrigation water was controlled and measured only at seven points. An area of 6,000 ha (15,000 acres) in the lower section of the system did not receive reliable irrigation water (Widanapathirana, 1986:7). At least one-third of GOLB's command area did not get irrigation facilities in the **Yala** (dry) season. As a result, paddy in several areas, particularly in the tail-end area of the GOLB, had essentially been a rainfed crop (Murray Rust, 1983:68).

Unequal distribution of irrigation water was widespread throughout the GOLB. Major variations existed, not only with regard to the volume of water delivered, but also with regard to the length of water issues and intervening non-issues. In the middle region of the GOLB the availability of irrigation water was inadequate and unreliable. This increased sharply towards the tail-end of the main canal, distributary canals and to a lesser degree, towards the tail-end of long field channels (Widanapathirana, 1984:4).

In certain areas, flow capacity of canals was inadequate to feed their allocated areas. For example, there were field channels each of which supplied water to an area of more than 100 acres. At the same time, there were distributary canals, each of which provided water to a paddy tract which was less than 15 acres in size (Wijayaratna, et.al. 1982:20).

The physical deterioration of the irrigation system had further been increased as a result of the lack of controlling gates. In many places, most of the turnout structures from the distributary canals were neglected. Often their maintenance was limited to cleaning weeds. Most of the field channels were found almost completely overgrown with weeds. Poor maintenance aggravated the silting problem of canals. These conditions did not allow farmers to rotate water. For example, as reported from the Uhana Branch canal (UB) 7, farmers often removed planks from sluice gates to get more water to their fields. Thus, the deterioration of the physical system of the GOLB was due not only to the mismanagement by the Agency (ID), but also due to the lack of cooperation among farmers in system operations.

2.3 Land Fragmentation and Encroachments

In the 1970s, land ownership was skewed in its distribution in the GOLB. Several surveys have shown that the size of paddy holdings in the GOLB ranged from 0.2 ha (0.5 acre) to 2.02 ha (5 acres) with an average of 0.8

ha (2 acres) (Perera, 1986:3). This was mainly due to the fragmentation of land holdings and illegal land sales. The number of land operators and the number of operational holdings in the GOLB doubled between 1952 and 1978. Fragmentation of land as a result of unrestricted inheritance and unauthorized asweddumization of "reservation" land created a disparity between the 'planned' and 'actual' command area of the GOLB.

In the GOLB, four types of land operators cultivated paddy holdings: (a) owner-operators who obtained support from their own households and hired labour, (b) absentee owner-operators who cultivated with the help of hired labour, (c) tenant-operators, and (d) encroachers. The resultant heterogeneity was one of the main reasons for the disunity and lack of organization among farmers in matters relating to water allocation. Thus breaking irrigation sluices, cutting bunds and stealing water had become daily occurrences in the GOLB by 1978.

Land fragmentation and illegal land transactions were quickened by the process of extensive encroachments in the GOLB. The encroached land area was not precisely known, but was estimated to be about 28% in the upper half of the irrigation system and between 33% to 50% in the lower locations (Murray Rust, 1983:59). In fact, many encroachers were the second and third generation members of the original settlers (Widanapathirana, 1986:56). Table 2.1 shows the volume of encroachments in the GOLB.

Table 2.1
Encroachments in the Gal Oya Left Bank in 1981: Three Assistant Government Agent Divisions

A.G.A. Division	Regularized encroachments (acres)	Pending regularization (acres)	Pending prosecution (acres)	Total area (acres)
Uhana	2223	7371	1601	11195
Samanthurai	2042	6227	184	8453
Kalmunai	89	00	299	388

Source : Widanapathirana: 1986:59.

2.4 Heterogeneity and Lack of Co-operation among the Settlers

As mentioned earlier, three categories of colonists were settled in the GOLB: (a) landless peasants who came from the Wet Zone; (b) fishermen and landless peasants from the Dry Zone, and (c) displaced local peasants. Settlers of type (a) brought different cultural values and practices to the GOLB. They had different socio-economic aspirations and different life styles and opportunities. Some of them possessed better educational qualifications than that of their Dry Zone counterparts. Also, some settlers from the Wet Zone became paddy farmers only after their arrival at the GOLB. There were few places where even a field channel was shared by settlers of different castes and/or by those who came from different regions. This heterogeneity was very evident in UB 7.3.1 and UB 6.3.2 (Ranasinghe Perera, 1984:61). This caused some tension among settlers and led to rivalries and dissension among them. Thus in the GOLB, hardly any community sense was evident which could have facilitated their collective work.

Another noteworthy factor in this regard is that the State itself had contributed to the heterogeneity among settlers. Often physical boundaries did not match hydrological boundaries. As a result, sometimes either a colony was served by several field channels or a single field channel served portions of several colonies. Village boundaries sometimes ran along field channels or in some cases, actually cris-crossed them, thereby bringing farmers from different colonies to cultivate together (Murray Rust, 1983:55). This disparity not only prevented co-operation among farmers, but also created difficulties in dispensing State facilities and services, e.g., input distribution. Intra-colony conflicts were common and caused tension in several areas.

2.5 Farmer-Officer Relations

Relations between farmers and officials were marked by mistrust and recriminations. Farmers had no confidence in the competence or the trustworthiness of the Irrigation Department (ID). On the other hand, the officials, especially Irrigation Engineers, believed that farmers could not use water in a responsible and careful manner (Perera, 1986:3). From the farmers' point of view, the main constraints impeding efficient water management were the inefficiency of field-level officials of the ID such as the Maintenance Overseers - **Jalapalakas** (JPs) and **Yayapalakas** (YPs). They were notorious for their corruption and thuggery. For example, in one distributary canal, if a

cultivator needed more water for his field, he could obtain it by bribing his JP with a sum of around Rs. 50/- and a bottle of arrack (Uphoff, 1981). In another instance, farmers complained that ID drivers drove their vehicles negligently apparently under the influence of liquor and broke several sluices along the road. This mistrust and ill-feelings between farmers and ID employees increased over time and resulted in lack of communication among them about irrigation and cultivation issues. Only the **Kanna** (seasonal) meetings provided a forum for farmers and officials to discuss agricultural and irrigation issues. However, the majority of farmers felt that such meetings did not allow them to air their views. They said that decisions in such meetings were made by few dominant farmers and officials. Many farmers also reported that officials did not implement the decisions taken at **Kanna** meetings (Ranasinghe Perera, 1984:59). Another factor that contributed to this lack of farmer-officer co-operation was the way the duties of the officials were allocated within the system. For example, some decisions pertaining to the Nugelanda area (which was a Sinhala majority area) were administered by Padirippu ID Unit which was located in a Tamil area. As a result, the Sinhala farmers could not meet officials conveniently when encountered with a severe water problem, as the distance and communal ill-feelings kept the two parties separated.

As several reports revealed (Uphoff, 1981 and 1982; Wijayaratna, *et.al.* 1982), farmers' lack of confidence in Government officials was one of the main obstacles for farmer participation in operation and maintenance (O & M) activities at the field channel level. Farmers felt that officials had not appreciated nor understood the gravity and seriousness of their problems. Further, officers according to farmers' did not take action even when they could use their authority to bring some relief to farmers. Such inactivity, lack of initiative and sympathy on the part of ID officials aggravated farmer's ill-feelings towards officials which, in turn, thwarted their active involvement in system management.

2.6 Local Power Structure and Leadership

Farmer participation in water management was also discouraged by the local power and leadership structure that prevailed in the GOLB. Local power groups comprised mainly of field-level officials such as **Yaya Palakas** (YPs), **Jalapalakas** (JPs) and rich farmers of the GOLB who competed with each other for limited land and irrigation water. The **Yaya Palaka** figured as the

most influential person in field-level water management activities. In the initial stage of the Water-User Organization Programme, many Institutional Organizers reported about YPs' injustices (Uphoff, 1981 and 1982). Sometimes, YPs obstructed farmers' organizational efforts. Institutional Organizers (IO) were subjected to threats of transfer out of the GOLB if they did not agree with YP's activities. There were instances of YPs who were selected by the farmers as their representative, attempting to use their positions to their advantage. For instance YP with his field allotment located at the tail-end of a channel, could use his 'influence' to raise the field inlets of all allotments which were located above his, so that more irrigation water could come along the field channel to his allotment. Fellow farmers along the field channel could not protest, because the YP had political and administrative backing in such activities (Perera, 1986:26).

The rich and dominant farmers kept close linkages with field officials and as a result, were in a position to influence the latter with regard to water management at the field-level. The power of rich farmers and how they used it were evident in the manner in which they misused irrigation water for their own advantage. IOs reported that some rich farmers took their tractors into field channels disregarding irrigation regulations and thereby damaged irrigation structures. They did not like Water-User Organizations as such collective efforts would curb their power and authority in the GOLB. Thus the farmer leadership in the GOLB prior to the rehabilitation could be characterised as either a leadership that was politically-oriented or interested in personal monetary gains (Ranasinghe Perera, 1984:9).

Under these circumstances, organizing GOLB farmers into Water-User Organizations appeared to be a challenging task. The ARTI/ Cornell research group soon after the completion of the Bench-Mark survey in the GOLB concluded that "there were low expectations of what could be done. The obvious challenge summoned forth many people's best efforts, as there was no room for complacency. Any progress was quickly recognizable and much appreciated. Perhaps most important, farmers were ready for self-reliant approaches. They knew after 30 years of hardship and neglect that if they did not help themselves, nobody else would" (Uphoff, 1986).

CHAPTER THREE

Water-User Organization Programme in the Gal Oya Left Bank: Processes and Catalysts

3.1 Introduction

This chapter has two main sections. Section I introduces the Gal Oya Water-User Organization Project - its genesis, main objectives and hypotheses. Section II discusses the Water-User Organization Programme as a process - how it was conducted in the GOLB with the assistance of IOs.

Section I

In 1978, the Government of Sri Lanka (GOSL) and USAID selected the Left Bank of the Gal Oya irrigation system for rehabilitation. The Irrigation Department (ID) was appointed by the GOSL as the Project Implementing Agency. Technical assistance was to be obtained from the PRC Engineering Consultants Inc., a US engineering firm. Through a Letter of Understanding, the ID was further assisted by the Agrarian Research and Training Institute (ARTI) which dealt with farmer organizations and socio-economic components of the Project. The ARTI was assisted in this regard by the Rural Development Committee of Cornell University, USA. The Project initially spanned over 44 months (August 1979 to March 1984). The Project life was subsequently extended by 21 months, i.e., until 31.12.85 as it needed more time to complete its assigned targets. USAID provided financial support in two ways: a grant of US $5.1 million and a loan of US $10.8 million. The GOSL's contribution to the Project was US $24,478 (USAID, 1983).

3.2 Objectives of the Water-User Organization Programmes

Both the GOSL and USAID agreed that to make maximum use of the rehabilitated irrigation system of the GOLB, it was necessary to develop better water management practices among farmers. To achieve this, they emphasised that the beneficiaries of the irrigation system, i.e., farmers, should be drawn into the operation and management of field channels which serve them directly. Such beneficiary participation, they maintained, was necessary to ensure efficient use of irrigation water and to prevent the decay of the physical irrigation structures. Farmers were to get involved in irrigation water management through their water-user organizations.

The Project assigned the establishment of Water-User Organizations (WUOs) and the promotion of farmers' participation in these organizations to the ARTI. However, the issues related to these tasks had been left rather undefined in the Project Proposal, except for the question of 'free labour'. From the ID's point view, it was the farmers' duty to contribute their labour for system rehabilitation works. Thus initially WUOs were to have an uniform legal status designed by the ID. ID's officials were expected to supervise WUOs' activities. The ID withheld the introduction of such WUOs at the GOLB at the request of the ARTI and allowed the ARTI to evolve a Water-User Organization Programme (WUOP). The ARTI did not possessed its own 'blueprint' and initiated the WUOP essentially as a Learning process, drawing experiences of similar programmes in the Philippines and the Minipe Colonization scheme in Sri Lanka.

The basic assumptions of the WUOP were:

i. No single WUO model would be suitable for the entire GOLB, given its ethnic, and hydrological variations.

ii. Water management style of the ID required radical reorientation.

iii. Informal field channel level WUOs had high chance of survival.

iv. Water management is central to WUOs; farmers need strong linkages with agricultural service agencies such as Department of Agriculture and Department of Agrarian Services.

The WUOP was to be implemented through i) carefully selected and trained catalysts called Institutional Organizers (ii) farmers who would respond to catalysts' sincere and informed efforts, and (iii) well motivated agency officials.

The Project Paper set a target of organizing 19,000 farmers on 23,100 ha (57,000 acres) into WUOs by the end of 1984. They were expected to desilt and rehabilitate field-channels through **Shramadana** (free labour). No funds were allocated in the initial Project Budget for this purpose. Farmers' participation in these tasks was taken for granted and the ARTI was expected to facilitate farmer participation through WUOs.

The ARTI emphasised the need for 'catalysts' to induce active farmer participation. "In effect, what had to be done was to make a planned intervention into the community, strong enough to catalyse the internal dynamism of the community and controlled enough not to dominate it. Thus, intervention was made through a catalyst agent called an Institutional Organizer (IO)" (Wijayaratna, 1985:123).

Section II

3.3 Selection of Catalysts - Institutional Organizers (IOs)

Among the criteria use in selecting the Institutional Organizers (IOs), the ARTI emphasised that candidates should be graduates in social sciences or in agriculture. Preference was to be given to those who possessed the following additional qualifications:

i. Knowledge of irrigated agriculture in the Dry Zone;

ii. Working experience in village-level organizational activities; and,

iii. Willingness to live and work with farmers in the GOLB.

IOs were recruited and trained by the ARTI in batches with a view to allowing them to develop inter-personal affiliations with each other. Table 3.1 shows the number of IOs recruited in six batches from March, 1981 until February, 1985.

Table 3.1
Number of Institutional Organizers Recruited during the Life of the Water-User Organization Programme in the Gal Oya Left Bank

Date of Recruitment	No. of IOs
15.03.1981	31
01.09.1982	33
21.03.1983	21
06.10.1983	32
15.04.1984	26
15.02.1985	26
Total	169

Source : Water Management Project Quarterly Reports (1981-85) and Process Documentation Reports (1981-84)1.

A batch of five **Jala Palakas** (field irrigators) and one Technical Assistant (TA) of the ID were also recruited as IOs on an experimental basis along with the first batch of IOs. But they left the Programme before the establishment of WUOs perhaps due to an apparent lack of motivation to become catalysts of the rural community.

The first three batches of IOs were deployed to expand WUOs. The deployment of the last three batches became necessary to fill in the vacancies created by IO drop outs of the first three batches.

3.4 Training of the Institutional Organizers

Each of the first three IO batches underwent in-service training for six weeks in community and institutional development and field training for two weeks prior to their deployment. The last three batches were selected and trained hurriedly to keep the Programme moving as many of the well-trained IOs left the Programme with short notice. As a result, IOs of the last three batches could undergo only a three-week in-service training in theory and one week's training in the field.

Table 3.2
Recruitment and Deployment of Institutional Organizers in the Project Area between 1981 and 1985

Month of Recruitment	No. of IOs	Deployed area
1. March 1981	31	Uhana/Gonagolla
2. September 1982	33	Weeragoda
3. March 1983	21	Gonagolla
4. September 1983 (replacement batch)	32	Uhana, Gonagolla, Weeragoda
5. April 1984	26	Weeragoda & Tamil speaking areas
6. February 1985 (replacement batch)	26	Paragahakele (new areas) and to fill in vacated IO positions in Uhana area.
Total	169	

Source : Water Management Project Quarterly Reports, 1981-1985.

Training Syllabus

Six weeks of in-service training concentrated mainly on theoretical and applied aspects of water-user organizations and community studies.

Field training was done in the GOLB. The emphasis was on (a) identification of farmers' problems and (b) farmer participation in water management. Three objectives were to be realised through field training.

i. To facilitate IOs' entry into communities and to help establish rapport with farmers.
ii. To identify farmers' needs and problems.
iii. To make IOs conversant with the social and physical environment of the Project area.

Summary of In-service Training Modules

Subject Area	Mode of Training	Resource Persons
General agriculture	Panel Discussions	Research and Training Officers (ARTI)
Irrigation Water Management	Role play games	Senior government officials
Agrarian issues (Land tenure/Credit)	Classroom exercises	Research and Training Officers (ARTI)
Rural Sociology	Lectures-cum-discussions	Local training experts (NIBM) & subject matter specialists
Communication/Group Dynamics	Panel discussions and Role play games	Government officials and Research and Training Officers (ARTI)

The field training module covered the following subjects:

Topics/subject areas	Duration
1. Problems related to Agriculture	Three days
2. Problems related to irrigation water	Three days
3. Problems related to cultivation and tenure	Three days
4. Role and functions of community organizations	Three days

At the end of each training session, trainees met with their tutors to discuss their problems and findings.

Institutional Organizer trainees were subjected to a continuous assessment in order to identify potential leadership skills and capabilities among them and to assess their knowledge. At the end of the training, they were introduced to the relevant government officials to help establish necessary linkages.

3.5 Field Management of Institutional Organizers

The supervision of IOs was the responsibility of the ARTI. The ARTI established a special research and training cell for this purpose called "Water Management Group" under the chairmanship of a senior Research and Training Officer. He coordinated the WUOP and attended to IOs administrative matters with the help of a Field Supervisor, who was released from the Land Commissioner's Department on a full time basis. The chairman with the assistance of other Research and Training Officers (R&TOs) of the Group carried out several research and training programmes for the benefit of the IOs and farmers. Cornell University consultants (both local and foreign) assisted the Group in formulating research, developing training modules and conducting training programmes - both in-service and field training.

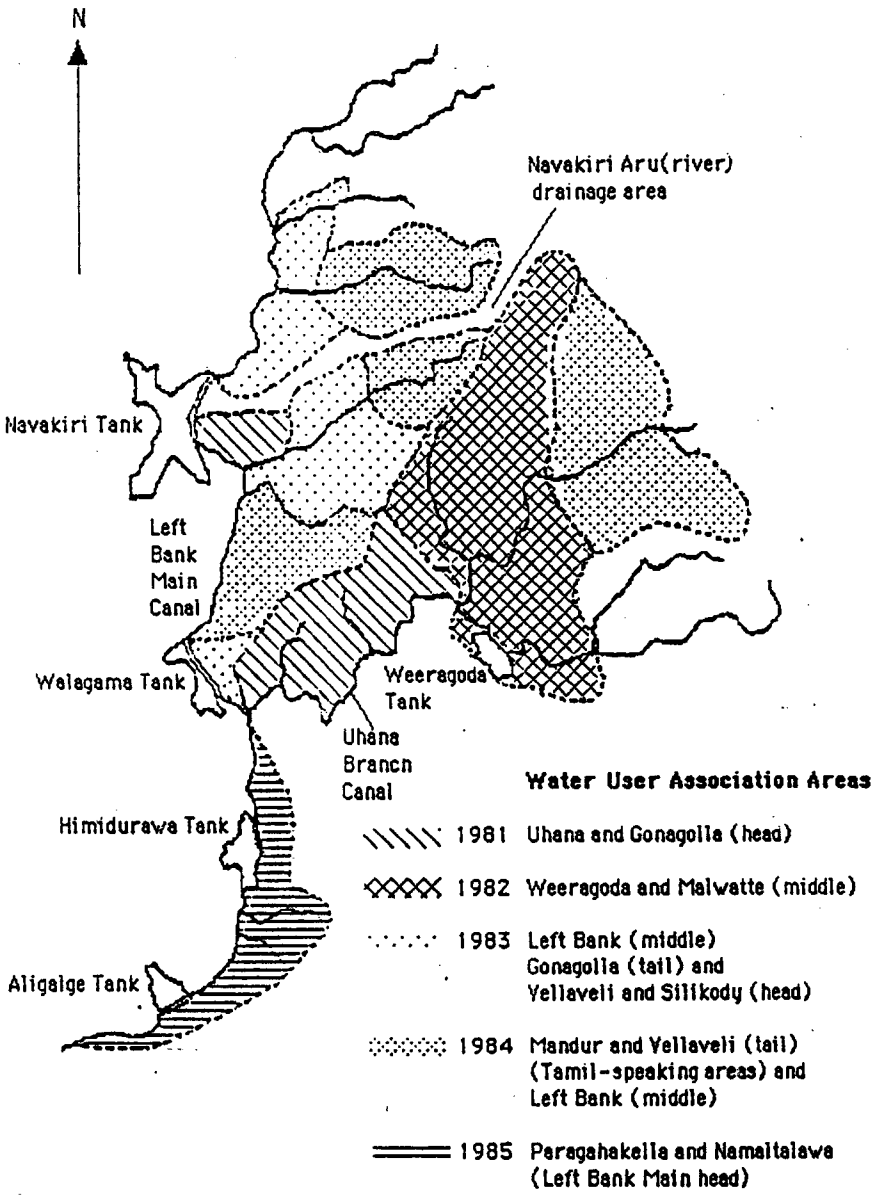
In October 1983, the water management Group was incorporated into a larger research and training division called Irrigation Water Management and Agrarian Relations (IAR) Division which was headed by a Deputy Director of the Institute. Despite this administrative changes the style of management of IOs and the supervision of WUOs continued without much change during the Project's lifetime.

Table 3.3
Field Management of Institutional Organizers: 1981-86

Year	No. of R&TOs	No. of Consultants*
1981	3	3
1982	3	3
1983	2	4
1984	2	4
1985	1	3
1986	2	3

* Both local and foreign Cornell Consultants.

The effective and systematic management of IOs by the ARTI suffered drawbacks after 1982 due to a variety of reasons. Thereafter, the management became less systematic.



Map III : Institutional Organizer Areas

i. The main amongst them being with several R&TOs attached to the WUO pogramme either leave the ARTI or proceed for post graduate studies abroad, co-ordination and supervision of the programme came haphazard and even erratic.

ii. While the WUO Programme was initiated as an action-research programme, the Water Management Group did not make any significant attempt in learning from experience and modifying the strategy of the Programme to suit local conditions. Thus in the latter years, the WUOP continued without much engagement in the "learning process" or in monitoring the conceptual development of the Programme.

iii. The attempts at expanding the WUOP all over the GOLB obstructed efficient administration of the Programme. The heavy dropout of trained and experienced IOs and increased security threats from insurgents aggravated this situation. As a result, towards the end of the Programme, links between the GOLB and the ARTI (Colombo) were reduced to a minimum.

The WUOP office, which was located in the ID's office premises, was known as 'IO Unit Office'. It had two full-time secretaries to attend to Programme's accounts and documentation. IOs visited the office to report on their administrative work pertaining to the Project. The Deputy Director of the ID, Ampara and an Irrigation Engineer provided the necessary support and linkages for the Programme through the WUOP office. The Deputy Director, Irrigation Engineers, ARTI's R&TOs and Cornell Consultants, Field Supervisor and Senior IOs constituted an informal 'Task Force' to facilitate the Programme at the Project level. In addition to this, IOs were encouraged by the ARTI to establish their own informal administrative structure to facilitate their activities and decision-making in the field. Two IO coordinators were elected by the IOs by secret ballot to assist the Field Supervisor in administrative matters. One coordinator was known as IO Project Coordinator, the other as IO Training Coordinator. In electing the two coordinators, the IOs considered their nominees' field experience as well as leadership abilities. The IO Project Coordinator convened group meetings of IOs and helped resolve their day-to-day problems and offered them ideas and instructions on how to build consensus among themselves. The IO Training Coordinator planned and executed farmer

training programmes with the assistance of the Field Supervisor, R&TOs and Consultants. He further coordinated farmer training programmes with ID training activities.

In each operational area - Uhana, Gonagolla, Weeragoda, Para-gahakelle and Vellaweli - there was an Area Coordinator whose responsibility was to coordinate all farmer and officer meetings, WUO meetings and to help resolve irrigation conflicts in his area of operation. There were five Area Coordinators in the GOLB by the end of Project in 1985 (see Figure 4). Assistant Area Coordinators assisted the Area Coordinators in these activities.

Table 3.4
Institutional Organizers' Administrative Structure 1981 - 86

Year	Institutional Organizer Supervisor	Institutional Organizer Project Co-ordinator	Institutional Organizer Training Coordinator	Institutional Organizer Group Co-ordinator	Institutional Organizer Asst. Group Coordinator	Process Documentator
1981	1	1	1	6	-	4
1982	1	1	1	9	-	9
1983	1	1	1	4	-	4
1984	1	1	-	4	3	2
1985	1	1	-	4	4	1
1986	1	1	-	4	4	1

Source : Water Management Quarterly Reports, 1981-85.

The position of Training Coordinator was discontinued after 1984 and was replaced by the post of Assistant Group Coordinator. The number of Process Documentators decreased over years. Many of these changes in the cadre of IOs had taken place mainly due to the heavy dropout in the cadre.

3.6 Feedback Process

The first feedback process was the activity called "Process Documentation". As mentioned earlier, this aimed at monitoring the actual

evolvement of concepts and strategies of the Programme at the field level. The basic objectives of Process Documentation exercise were as follows:

(a) to review the role and functions of IOs in relation to the WUOs in the GOLB;

(b) to report on constraints to and trends of farmer-officer relationships as well as mutual support and cooperation that had evolved within the community as a result of the Programme;

(c) to assess the "problem-solving-capacity" of WUOs through group efforts and to document the ways and means of solving problems; and

(d) to review the "team concept" that had been utilized by the WUOs as well as IOs in achieving the aims of the Project.

Project Documentators (selected from among IOs) were trained in the field work method of participant observation. They observed and reported their findings periodically. The Field Supervisor and research and training personnel were supposed to review the reports and to take necessary action in the field. However report contents were not analysed systematically and as a result, this valuable source of first hand field knowledge was left unused in files. On the other hand, the ARTI did not provide clear instructions to the Process Documentators on how to report the social dynamics that were generated as a result of the IOs' intervention in community activities. Thus the majority of documentation collected became a mass of information on general activities in the field rather than a synthesis of changes, trends and problems of the WUOs and IOs.

The second feedback process was "self-criticism". Through this process of "self-criticism" IOs were not hesitant to discuss their own problems and mistakes with their Coordinators, fellow IOs and Researchers, so that the whole Programme could gain from such experiences. As a group of different interests (IOs, Researchers, Supervisors and Consultants), it was necessary to have such group dialogues as one's mistake could have affected the activities of others and the progress of the entire Programme.

Figure I : Field Organization of the Water-User Organization Programme in the GOLB

The third feedback process was the periodical in-service refresher training sessions held for the benefit of IOs who had already spent several months in the field. The ARTI researchers and trainers as well as Cornell Consultants took part in these sessions. The discussions were held as a 'learning process'. The IOs discussed their experiences and problems in the field with trainers and obtained necessary advice for further action. Such in-service training helped identify problems, gain better perspectives and deepen the understanding of the participatory approach as it confronted field reality.

3.7 Establishment of Water-User Organizations

The first task of an Institutional Organizer (IO) after entering a farming community was to identify its physical and socio-cultural characteristics. This effort was known as "Profile Preparation" of irrigation system and the community. The profiles sometimes were referred to as 'area profiles' and 'household profiles'. Data on geo-physical characteristic location of field channels, farmer behaviour towards water management and categories of farmers were included in 'area' profiles, while background of settlers, their leadership institutions, household income and expenditure were included in 'household profiles'. Although this 'profile' construction was done following the exercise of the National Irrigation Agency (NIA) in the Philippines, the WUOP never made much use of these profiles. In retrospect, it seems, neither IOs nor their supervisors had seen a specific use in these profiles, but continued to collect profile data as the Programme was fashioned after the NIA's 'Learning Process' approach to Water-User Organizations. However, the compilation of profiles was done only at the initial stages of the WUO Programme i.e., until 1983.

The establishment of WUOs to promote farmer participation in irrigation water management was based on two assumptions:

i. Informal water-user groups would evolve into formal organizations through common objectives, understanding and activities.
ii. Water-user organizational efforts would evolve upward from the field-channel level as farmers realised the usefulness of such organizations.

Keeping with the "bottom-up" approach (a) IOs first met farmers individually in their fields or at homes, mostly in the evening. Through these personal contacts with farmers, IOs developed a sense of friendship and

acceptance among them. After these initial contacts, the IO met with small groups of farmers, who cultivated land using irrigation water from the same field-channel, to discuss their needs and problems. The objective of such meetings was to identify the means of solving farmer problems through group initiative and activity. In this regard, the IO acted as a facilitator.

Each IO organized farmers into groups and discussed with them the advantages of groupings for community work such as water management and paddy cultivation. When the first batch of IOs was deployed, the farming community in the GOLB did not display any evidence of group activity (see Chapter 2). Thus IOs while helping to bring together farmers to organize into small groups, they played an almost missionary role displaying commitment and enthusiasm.

The IOs encouraged each informal farmer group (**kandayama**) to choose a group 'spokesman' to lead group activities. As farmers gathered experience in group work, the IO encouraged them to form formal groups at the field-channel level. Each formal group (**sanvidanaya**) had a 'Representative' chosen by members. If farmers found it difficult to choose their Representative by consensus, a 'spokesman' was named by the group or by the IO as a temporary Representative.

Formation of field-channel groups was not entirely due to the IOs' initiative, but also due to some environmental factors. When IOs were deployed in Uhana and Gonagolla areas in 1981, water issues from the reservoir was at its lowest level. This allowed IOs to play a facilitator role through groups in sharing scarce water. This was clearly evident in the fact that out of 71 field-channel level farmer groups, 49 were compelled to practise water rotations in the **Yala** season of 1981. This led farmers to work as groups.

Although the WUOP began in both Uhana and Gonagolla areas at the same time, there was a difference in organization-building styles between the two areas. In Uhana area, formation of WUOs preceded irrigation rehabilitation. Therefore, farmers knew about the forthcoming irrigation rehabilitation programme. They were told by the IOs that WUOs would be invited to participate in irrigation rehabilitation activities. This created a great deal of interest among farmers in WUOs. In fact, the initial activities of WUOs in Uhana area were essentially geared towards physical rehabilitation activities,

such as participating in design meetings and earth works. Ranasinghe Perera in his recent study, reported that 22 rehabilitation design meetings were called during the period between April 1981 and March 1982 by the WUOs and on an average 92% of farmers participated in these meetings. According to him, this high rate of farmer participation in design meetings was due to the continued dialogue between agency officials and farmers. Amicable farmer-officer relations encouraged farmers to take part in earth work through **shramadana** (1985:33 and 34).

District level administrative decisions also encouraged farmers to cooperate with agency officials at the initial stages of the Programme. During the Yala season of 1982, the ID authorized farmers to cultivate only 2,025 ha (5,000 acres) because of an acute water shortage. Many farmers who were opposed to this decision appealed to Government Agent (GA) requesting for more water. The GA revised the ID's decision allowing farmers to cultivate 4,850 ha (12,000 acres). Further, he invited farmers to select their 'Representatives' to attend the District Agricultural Committee (DAC) meetings. The farmers welcomed this more by the highest administrative officer in the District and gladly elected their 'Representatives',for the DAC.

The following measures were adopted in the first plot area i.e., Uhana area, to obtain farmers' participation in irrigation-related activities.

i. Cleaning of field channels through voluntary group labour (**shramadanas**).
ii. Water rotation among fields to save water for downstream farm holdings.
iii. Participation in rehabilitation design meetings.

These favourable factors allowed both the IOs and farmers to realize the value of WUOs at the initial stages of the WUOP. Unfortunately however, these positive factors were absent in the GOLB at the latter stages of the Programme. As a result, IOs had to take the full initiative of encouraging farmers to establish WUOs. Perhaps the initial favourable condition for WUOs had created high ideals and set targets which were difficult to meet by the latter day organizational efforts. In some instances IOs "established" WUOs with their own initiative, which was quite contrary to the principles on which the WUO Programme was based, to achieve set targets at its initial stages.

CHAPTER FOUR

Evolution of Water-User Organizations in the Gal Oya Left Bank

4.1 Introduction

The purpose of this chapter is to discuss how WUOs have evolved in the GOLB and the factors that contributed to this process.

The ARTI/Cornell team started the WUO Programme on the belief that IOs' intensive presence was necessary at the initial stages of WUOs and their presence could incrementally be reduced with the consolidation of WUOs. At the beginning of the Programme, it was difficult to predict how long IOs would take to organize farmers into WUOs. However, as field experiences gathered, the researchers tentatively identified three phases of WUO development: (i) achieving effectiveness (organizing); (ii) increasing efficiency (consolidation) and (iii) undertaking expansion (maintenance) (Uphoff 1983:31).

These three phases were closely interrelated and did not show sequential development in the GOLB. This was due to several reasons: chief among them was the difficulties in retaining trained IOs to take the WUOs through the above three phases. The high drop out rate among IOs did not often allow the Programme to go beyond the first phase - organizing WUOs. Some IOs of the last three batches were given not only the tasks of organizing farmers into WUOs but also the difficult task of consolidating WUOs. New recruits lacked the necessary experience and knowledge to consolidate the already established WUOs. On the other hand the IOs, who left the Programme for employment elsewhere had little time to transfer their knowledge and experience to the new IOs who replaced them as they left in batches with short and inadequate notice.

The 'Process Documentation' exercise would have helped to avert this situation. But unfortunately, gaps and superficiality of information gathering and reporting, did little to argument new IOs of field conditions sufficiently. Many new IOs attempted to organize farmers into groups where WUOs were already established, thus confusion among farmers. On many occasions, the well trained IOs left the Programme at the crucial stage of WUO formation, i.e. at the stage of the steady taking over of WUO operations by farmers themselves. When an IO left the Programme at this stage, the WUOs lost their standing sometimes collapsed altogether, only to be re-established by a new IO.

With these unanticipated events, it was difficult to follow the organization, consolidation and maintenance stages of WUOs as planned. However, it is still possible to see some trends and patterns of WUO development in the GOLB during the Programme's life time.

Section I

4.2 Organizing Water-User Organizations

The first batch of Institutional Organizers were deployed in March 1981 in Gonagolla (LB 29, 30 and G 1 to G 5 D canals) and Uhana (UB 1 to UB 16 D canals) which covered 2,700 ha (6,700 acres). Six IOs were fielded in Gonagolla, while the other 24 IOs were fielded in Uhana. The formation of WUOs began in both areas more or less at the same time. However, in this regard two different approaches were adopted. In Uhana, IOs met farmers in groups. As physical rehabilitation works were already in progress, it became imperative that WUOs be established as early as possible. IOs arranged farmers to take part in rehabilitation design meetings to meet irrigation agency personnel and learn about group activities. Such meetings and group work facilitated the formation of WUOs in Uhana. In Gonagolla, by contrast, IOs met farmers individually to encourage them to form their own groups.

During the first 8 months of the Programme (March-October, 1981), 96 field channel level farmer groups were formed with 1800 farmers (table 4.1). Area Councils (third tier of the organizational structure) were established in Uhana at the end of 1981.

In 1982, a significant change had taken place in the WUOP. The

Government Agent (GA) of the Ampara District decided that farmer representatives should sit in the District Agricultural Committee (DAC). This was the fourth tier of the WUO structure. The GA's decision indicated the willingness of the bureaucracy to accommodate farmers in the decision-making process. Thus within a year, three tiers of WUOs - field channel level WUOs, Area Councils and the Project Committee were established in the GOLB. The second tier - D-canal organizations - were to be established on the strength of the field channel level WUOs. By end of 1982, 113 field channel groups and 2 Area Councils had been formed in Weeragoda and Malwatta areas.

The establishment of farmer groups at the field-channel level continued to be the main activity in 1983. Since there were no D-canal level WUOs, farmer representatives as well as farmers attended Area Council meetings. This caused difficulties in decision-making. At the sametime, the Irrigation Department introduced a water rotation system at the D-canal level. This together with the difficulties in decision-making at the Area Council convinced farmers that the D-canal organization was a better forum to solve their water-related problems than the Area Councils. The first D-canal organization was formed at the UB 9 'D' canal (Uhana) in 1983.

The first major crisis of the WUO Programme arose in July 1983, when about two thirds of the IOs left the Programme to become government school teachers. This exodus of IOs affected the WUOP seriously. Several farmer groups collapsed as no IOs were available to guide them at their crucial stage of consolidation. To minimize the negative impact of this crisis, the Programme recruited a new batch of 32 IOs in September, 1983.

The WUO Programme underwent significant changes in 1984. A batch of 26 Tamil-speaking IOs were deployed in March 1984 to expand the WUO Programme into Tamil-speaking areas of the GOLB. Initially the IOs were fielded in Mandur and Vellaveli-Silikkody areas (see Map).

The other significant happening in 1984 was the establishment of more D-canal organizations. During the first quarter of 1984, five new D-canal organizations were established in Weeragoda and Gonagolla. The number of Area Councils increased from 3 to 4. However, the Programme experienced a major setback when almost all the Tamil-speaking IOs left the Programme after serving only six months. By mid August 1984, 24 out of 26 Tamil-speaking

IOs left the Programme. As a result, the 'organizing' phase of the Tamil-speaking areas came to an abrupt half. No single field-channel group was formed by them before they left the Programme.

Table 4.1
Expansion of Water-User Organizations from 1981 to 1986

Year	Project area covered (ac)	No. of farmers organized	No. of field-channel groups formed	No. of D-canal WUOs formed	No. of Area Councils formed
1981	6200	1800	96	-	-
1982	14117	2100	113	-	2
1983	15873	4500	163	1	3
1984	32934	10870	270	12	4
1985	25384	7400	341	20	6
1986	25247	7938	380	29	6

Source : Water Management Quarterly Reports (ID) 1981 - 1986.

The year of 1984 was important in several ways for the WUO Programme. Firstly, the highest number of field-channel groups were formed during the year although the number of IOs remained the lowest. By the end of 1984, there were only 18 IOs in the GOLB. However, the number of field-channel groups increased from 163 to 270 the same year.

Secondly, the WUO Programme received national level publicity through a 'Farmer Convention' organized by the WUOs. The Farmer Convention was held at Uhana Government Training College under the distinguished patronage of the Hon. Ministers of the Agricultural Development and Research, and Lands and Land Development and Mahaweli Development. The convention was attended by about 3,000 farmers (Water Management Quarterly Report: 1984).

The main purpose of the Farmer Convention was to obtain certain concessions, for example, the abolition of water tax, and to show the government that farmers were willing to take over O & M activities and system

management from the ID. However, in the end the Convention turned out to be a political forum for competing interest groups in the area of debate over farmers' problems. As a result, the agenda of the Convention was drastically changed by the Organizing Committee. The ruling party supporters praised state policies on water tax and input distribution. Many farmers who attended the Convention displayed their dismay and this effectively destroyed the common recognition WUOs had as "politically neutral organizations".

Thirdly, the attempt at organizing WUOs in Tamil-speaking areas ended in failure. Unlike the Sinhala-speaking IOs, Tamil-speaking IOs were not well trained before their deployment in the field. Moreover, communal disturbances and the resultant insecurity in the area compelled the ARTI to suspend WUO activities in Mandur and Vellaweli-Silikkody areas.

In 1985, there were only 20 IOs in the WUOP and they covered about 13,000 ha (32,000 acres). As the WUOs were still in their 'organizational' stage, they needed IOs' support and guidance to continue their activities. In January 1985, over 80% field-channel level WUOs reported that they had not met for several months. A new batch of 26 IOs were recruited in February 1985 to arrest this decline. However, these IOs were not selected through a rigorous selection procedure as in the past. The new IO recruits were casual field investigators of the ARTI. Soon after the completion of a research project, in which they worked as investigators, the ARTI transferred them to the WUO Programme. They did not undergo a comprehensive training programme as the earlier batches of IOs did. Twenty of them were deployed to fill in the vacancies in the IO cadre. The other six were deployed in the head-end of the irrigation system of the GOLB - Himidurawa and Paragahakele. By the end of first quarter of 1985, 1,000 ha (2,400 acres) in Himidurawa - Paragahakele area were brought under the Programme. By the end of June 1985, the cadre of IOs fell to 28 as 18 had left the Programme to become school teachers. This again created problems for WUOs at the field channel level, as they could not obtain necessary advice and guidance. To remedy this, the Programme began to consolidate several adjacent WUOs to form bigger and stronger WUOs at the field level.

Consequently, the 358 WUOs established in the first quarter of 1985 were consolidated into 344 WUOs (Water Management Quarterly Report, 1985). Eight new D-canal organizations were formed in Weeragoda and Gonagolla areas. The Project Committee (PC) was established in June 1985. As mentioned

earlier, FRs informally attended the DAC meeting upon the request of the GA. The establishment of the PC completed the Programme's four-tier structure and allowed more farmer representation at the highest level of decision-making in the Project area.

Table 4.2
Expansion of Water-User Farmer Organizations in the GOLB: By the end of Each Year

Year	Total No. of IOs in service	Extent of the Area (ac)	Farmers organized	FCW-UO formed	Acre per IO	Farmers per IO	WUOs per IO
1981	29	6700	1800	96	231	62	3
1982	47	14117	2100	113	300	84	2
1983	43	15873	4500	369	104	104	4
1984	20	32934	10870	240	1646	543	12
1985	15	25384	7400	341	1692	493	22
1986 June	7	25247	7938	380	3156	992	47

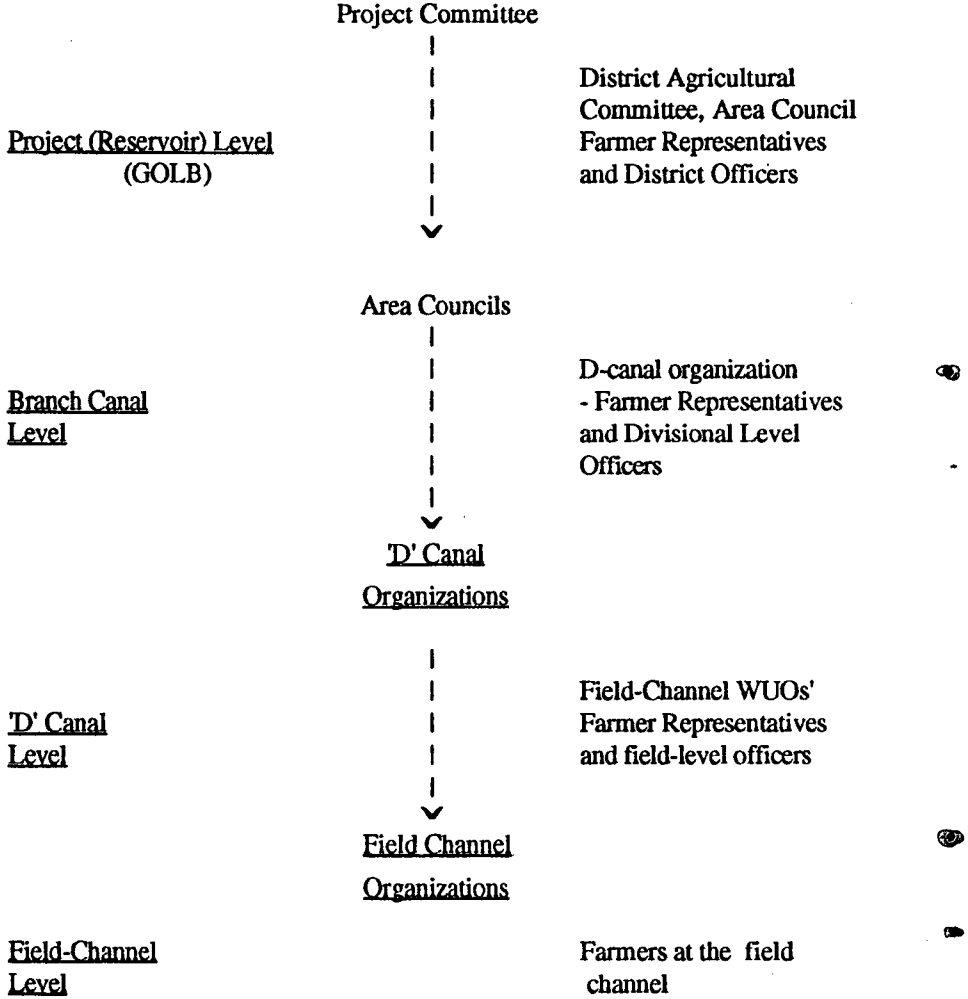
Source : Water Management Quarterly Reports 1981-1985 and IO Records.

By the end of the 1985 (end of the Programme), 94% of the field-channel level WUOs, targeted to be established by the Programme, had been formed in Sinhala-speaking areas. The Programme spread over 10,275 ha (25,384 acres) of the Sinhala-speaking areas of the GOLB and approximately 8,000 farmers were organized into WUOs. However, only 28 out of 42 D-canal organizations were established. The second half of 1985 witnessed the Programme's attempt at improving the organizational performance of WUOs than forming more field-channel level WUOs. However, five field-channel level WUOs were formed in Tamil-speaking areas (along M 5.4 which skirted Sinhala-speaking areas) by farmers themselves. These WUOs became the base for farmers' participation in physical rehabilitation in the area.

Figure 2
Time Schedule for Water-User Organization Promotion Activities during the Period between 1981-1985

Phase	Duration	Area per IO	Objectives	Role of IOs
1981-1982	12 months	200-500 acres	Organizing farmers for water management at the field channel (FC) level; formation of FC water-user groups.	Motivate farmers for collective action Motivator facilitator
1982-1983 Phase II	6-18 months	1000-5000 acres	Organizing and strengthening the WUOs at FC level. Formation of Distributary Canal Organizations	Contact with farmer groups; develop links with farmer representative(FR) officials (EducatorAdvisor)
1984-1985 Phase III	24 months continuing	2500-3000 acres	Maintenance of WUO activities. Coordinate the D-canal organizations and formation of Area Councils and higher-level organizations	Consultants to FRs, training and monitoring the D canal organization and Area Councils (Monitor and 'trouble-shooter')

Figure 3
Organization Structure of Gal Oya Left Bank Water-User Organizations



Although the WUO Programme ended at the end of 1985, the ARTI with the financial assistance from the Irrigation Department continued the Programme for another six months with 15 IOs, until it was amalgamated into the 'Integrated Management for Major Agricultural Settlements (INMAS) Project of the Irrigation Management Division (IMD) of the Ministry of Land and Land Development.

Section II

4.3 Structure of Water-User Organizations in the GOLB

The Water-User Organizations in the GOLB were expected to develop from informal field-channel farmer groups level to the Project Committee at the Project level.

Field Channel Level Water-User Organizations

The lowest level of the organizational structure of WUOs is the field-channel WUOs. They are often referred to as "Groups" because of their informal character. A Group is composed of 5 to 30 farmers who cultivate land under a field-channel. Leadership in these Groups is informal; a member is chosen to be the Group's 'spokesman' (Farmer Representative). In several places, however, farmers elected the Chairman, Secretary and Treasurer of their Groups.

The main objectives of these organizations are to (i) distribute irrigation water in the equitable manner among farmers through proper operation and maintenance of field-channels, and to (ii) promote cooperation and unity among farmers. The Groups have no regular schedules of meetings. They meet whenever there is a need. However, they hold meetings at the beginning and at the end of each cultivation season to discuss the water rotation and harvesting respectively.

Distributary-Canal Organizations

D-canal organizations are formal organizations of farmers. A D-canal organization has a President, Secretary and a Treasurer selected from among Farmer Representatives of Field Channel Groups in its command area. D-canal

organizations are not formed at each D-canal as some of them serve only a few field channels. On the other hand, however, several D-canals were formed at the same D-canal when it served a larger area. A good example is the Mandur 5 D-canal which is served by two D-canal organizations.

A D-canal organization does not have its own rules and regulations which specify the composition of its membership. Many D-canal organizations have only Farmer Representatives as their members, while a few D-canal organizations allow all farmers who cultivate under the D-canal to take part in D-canal organization meetings and activities. There are a few D-canal organizations which allow tenants and even encroachers to take part in decision-making activities. Many encroachers participated actively in D-canal organization activities with a view to encouraging officials to 'regularize' their encroachments.

The objectives of the D-canal organization are to (a) act as an intermediate forum, where farmers and field-level officers could meet, (b) find out solutions to problems forwarded by field-channel level WUOs and to (c) participate in canal operation and maintenance activities.

Each D-canal organization meets at the beginning of each cultivation season to discuss field-channel level problems, and farmers' requirements and views. The results of such discussions are presented by D-canal organizations at **Kanna** (seasonal) meetings. Thus the D-canal organizations functions as a forum where farmers could organize themselves to present a common plan of activities at the **Kanna** meetings.

Area Councils

Area Councils were formed at the Branch Canal level. However, in practice, Area Councils were formed more on social boundaries than on hydrological boundaries. Area Councils are referred to by administrative area names such as Gonagolla, Weeragoda, Uhana and Paragahakele. There are two types of Area Councils in the GOLB: (a) An Area Council called **Pradesiya Sanvidanaya** (Area Organizations) which opens its membership to Farmer Representatives of all field-channel WUOs in its area of operation. Such Councils were also known as **Mahasabawas** (General Councils). The second type of Area Council is called **Pradesiya Kamitu** (Area Committees).

A **Pradeshiya Kamituwa** comprises of the Presidents, Secretaries and the Treasurers of all D-canal organizations in its area of operation.

The main objective of Area Councils is to organize farmers in economic, social and cultural activities. More specifically:

a) to work for the social, cultural and educational upliftment of the people in the area;
b) to serve as a link between different levels of WUOs; and
c) to serve as a decision-making and advisory body in the area and thereby to facilitate agency activities.

The general assembly of each Area Council (*Maha Sabha Rasweema*) is convened only occasionally, while the Committee meetings (**Kamitu Rasweem**) are held regularly every month (ARTI, 1986:35).

Several important issues are discussed at Area Councils. Chief among them are issues relating to the availability of inputs, marketing or rice, getting rehabilitation contracts from the ID to WUOs, crop insurance and farmers' identity cards (ARTI, 1986:35). Furthermore, Area Councils organize the popular **"Aluth Sahal Mangalyaya"** (harvesting ceremony) in their respective areas.

Project Committee (Reservoir Organization)

The Project Committee was formed in 1985 and is called "Gal Oya Valley Farmer Organizations". It comprises of 10 Farmer Representatives selected from four Area Councils. The Committee is headed by the GA. All district heads of line agencies are ex-officio members of the Project Committee. The main objectives of the Project Committee are:

a) to solve problems which cannot be resolved by farmers and officials at Area Councils.
b) to encourage farmer participation at policy-making level.
c) to supervise operation and maintenance activities of the entire irrigation system of the GOLB.

The Project Committee is expected to meet once a season (**Kanna**) before the **Kanna** meeting is held. Decisions on issues related to irrigation and agricultural development in the GOLB, for example, distribution of seed paddy, cultivation of other-field crops and monitoring of the progress of physical rehabilitation of the irrigation system are taken by the Project Committee.

Section III

4.4 Institutional Organizers' Contribution to the Development of Water-User Organizations in the GOLB

Institutional Organizers have clearly played a significant role in the establishment of WUOs in the GOLB. However, IOs' contribution to the WUOP depended on two important factors: (a) the drop out rate of IOs, and (b) average length of time an area was served by an IO.

The Programme recruited IOs as catalysts on contract basis. Many IOs considered the job as a temporary solution to their unemployment problem. As a result, IOs always looked for permanent employment elsewhere (Perera, 1986:116). IOs' drop out rate accelerated between 1983 and 1985. As table 4.3 indicates, the drop out rate of the IOs in the years of 1983, 1984 and 1985 was larger than that of their recruitment. During this period (the last three years of the Programme), there was a sharp fluctuation in the number of IOs who served the Programme. The first batch of IOs served an average period of 28 months in the Programme. The IOs of other five batches served between 4 and 14 months (see table 4.4). As a result, after 1983, the WUO Programme struggled more to protect already established WUOs than to consolidate them. Although a total of 169 IOs were recruited and trained, at a given time, the number of trained IOs in the field never exceeded 47 and the average had been around 30.

On the other hand, the length of time which an area was served by an IO varied from three months to five years. This was due to the uneven pattern of IOs' dropout. Fourty one percent of IOs served in the Programme for less than 6 months and only 23% of them served the Programme for more than two years (ARTI, 86:57).

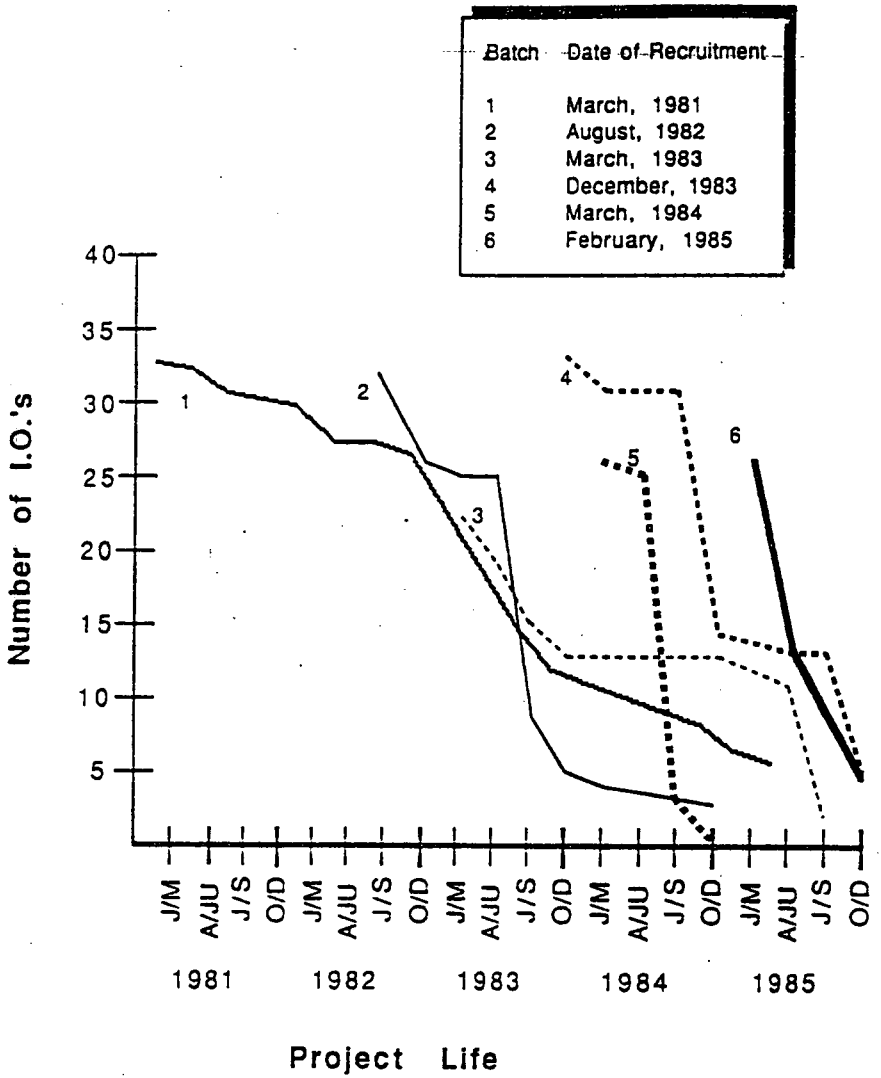


Figure 4 : Patterns of Institutional Organizers Dropout : 1981 - 1985

One serious negative impact of this continuous drop out of IOs was the presence of large number of newly trained and less experienced IOs in the Programme at a given time. In some areas, IOs' departure occurred three times a year. As a result, the majority of WUOs did not receive strong and continuous support from resident IOs.

Table 4.3
Recruitment and Drop Out Rates of IOs during the Period between 1981 and 1986

Year	Recruited	Total	Dropouts	In Service
1981 March	31	31	2	29
1982	33	62	15	47
1983	53	100	57	43
1984	26	69	49	20
1985	26	46	31	15
1986 June	00	15	8	7

Source : Water Management Quarterly Reports 1981 - 1985.

Table 4.4
Institutional Organizers' Average Length of Stay in the Programme: By Batches of Institutional Organizers during the Period between 1981 and 1985

Batch	Date of Recruitment	No of IOs in the Batch	Average period stayed (months)
(1)	January - February 1981	31	28.9
(2)	July - August 1982	33	9.7
(3)	January - March 1983	21	5.8
(4)	October - December 1983	33	13.9
(5)	March 1984	26	3.1
(6)	January - February 1985	26	4.8
Total		169	11.8

Source :International Science and Technology Institute (1986: B-17).

The high drop out rate of the third and fifth batches affected the WUO Programme very badly. The third batch of IOs were recruited mainly to continue WUO activities, when the first two batches of IOs left the newly formed (therefore weak) WUOs. However, the IOs of the replacement batch could not continue WUO activities without any lapses as they did not have a good grasp of WUO activities in the first place. Some new IOs therefore, started their activities right from the beginning by re-appointing FRs and re-establishing WUOs.

The fifth batch of IOs were mainly recruited for Tamil-speaking areas. These IOs did not make any progress in their field activities as they did not get adequate training before their deployment. Most of them were not able to carry out their duties because of the unrest and insecurity that prevailed in Tamil-speaking areas. The major problem for most of farmers in these areas was not inadequacy of irrigation water, but the threats to their lives from subversives. As a result, Tamil-speaking farmers did not welcome the WUO Programme as much as the Sinhala-speaking farmers did.

Time schedules of WUO operations and their progress did not tally well throughout the life of the Programme. The WUO Programme evolved as an uneven process due to various factors such as high drop out rate and hurried service IOs setbacks of the physical rehabilitation programme and delays in agency re-orientation.

4.5 Summary

The above discussion indicates several important aspects of the WUOP in the GOLB and role IOs played in forming WUOs.

Although 169 IOs were deployed in different phases of the WUOProgramme, on an average, 26 well-trained IOs were available to implement the Programme at a given time. The high rate of recruitment, training and deployment of IOs in six batches cost the Programme heavily without much benefit to farmers. From this, several lessons can be learnt.

Catalyst agents - IOs - should be recruited on a long-term contract basis. "The appointment of IOs only for a short period to help farmers organize Farmer Organizations is correct. But it is difficult to accept that the tenure of an IO should also be temporary because without a career prospect, no intelligent

Table 4.5
Progress of WUOs Development under the WUO Programme: 1981-85

Period ending	No.of Core IOs (1)	Farmers Organized*	Area Covered*	WUO formed*	Ratio WUO/IO*
1981	29	100	100	100	3.3
1982	25	116	210	117	4.5
1983	24	250	236	384	15.0
1984	37	603	491	250	6.0
1985	15	411	378	355	23.5

1. IOs who underwent thorough induction and in-service training and who remained more than six months in the field.

* 81(end) = 100 index.

and innovative graduate would agree to remain on a contract basis as an IO, when permanent employment opportunities exist for them. Thus there is enough justification to create a permanent cadre of IOs from among the better IOs" (Perera, 1986: 110). In the GOLB, no permanent cadre of IOs were established although numerous discussion papers, cabinet papers and memoranda exchanged hands within and among relevant Ministries on this issues. An assurance that a certain number of IOs would be employed on permanent basis would have arrested at least, to some extent, the high drop out rate of IOs.

The unexpected drop out rate and the subsequent take in standards among IOs jeopardized the WUO Programme in several ways. First, the phasing out of IOs as planned could not be implemented. Table 4.5 might give the impression that a core group of IOs had managed to form, consolidate and expand WUOs during the five year period - 1981-86. As discussed earlier, what actually happened was the Project personnel attempted to reach the targets of WUO Programme without waiting for WUOs to evolve through the anticipated three phases. Thus the nearly 300% increase of WUOs (100 to 384) between 1981 and 1983 had taken place as a result of rushing in of IOs with little training. This is particularly true in Tamil-speaking areas. IOs failed to organize viable WUOs and left creating a vacuum in Tamil-speaking areas within a year of their appointment. Thus the rapid increase of the ratio of WUO/IO from 3.3 to 23.5 between 1981-85 was not gradual. It was rather a

haphazard process which reflected the deployment of "replacement" batches of IOs with a view to increasing WUOs in the GOLB. Their departure even before completing the organizing phase of WUOs, left several hundreds of weak and unstable WUOs in the GOLB. Thus the WUO Programme did not go beyond the phase of 'organizing' except in few places, where core IOs continued to work.

The high dropout rate of IOs, (e.g., 65% in 1983, 55% in 1984 and 68% in 1985) created two interrelated problems. When new and inexperienced IOs formed WUOs and then left the Programme, the core IOs had to fill in the vacuum and to take over those WUOs under their purview. This has had inhibitative effects on the entire WUO Programme as the core IOs could not concentrate on the 'consolidation' of already established WUOs. Related to this is the bad 'demonstration effect' of collapsing WUOs for want of IO's guidance and support. Thus many WUOs in the GOLB could not go beyond the organizing phase. This created a heavy dependence for the part of WUOs on IOs which had serious repercussions for the survival of WUOs after the Programme was completed in 1985.

CHAPTER FIVE

Water-User Organizations and Irrigation Water Management: Farmer and Agency Viewpoints

This chapter deals with the WUOs' evaluations of their own performance in managing irrigation water at the field-channel level. WUOs involvement in water distribution, water savings, water rotations, conflict resolution, operation and maintenance, and protection of channel structures are some of the areas that were studied for this survey. WUOs views and explanations were compared and contrasted with that of agency officials, particularly of the Irrigation Department, to find out the differences, if any, between farmers and agency officials over crucial irrigation management issues. An attempt was also made to describe styles of interaction among field channel WUOs and their linkages with higher level WUOs and agency officials.

Involvement of water-user organizations in water management in the GOLB had mainly taken place at the field-channel level. WUOs were established to (a) facilitate equitable and adequate water distribution at the field-channel level, (b) ensure that water is used efficiently eliminating waste, (c) operate water rotations where necessary to ensure efficient distribution of irrigation water, and to (d) reduce conflicts over water by solving problems related to irrigation at the field-channel level. Against these objectives we can evaluate both farmers' and agency officials' viewpoints about the WUO's performance. In doing so, it is interesting to find out how the farmers' viewpoints on certain important issues such as water savings and resolution of water conflicts differ or agree with officials' viewpoints, and assessment. In this chapter, we will attempt to discuss not only farmers' and officials' viewpoints but also reasons if any, for the differences between these viewpoints.

5.1 Water Distribution

Farmers in WUOs reported that water distribution in their field-channels had become more effective and equitable after the establishment of WUOs. Almost 90% of WUOs indicated that over 50% of farmers got adequate irrigation water. However, as table 5.1 indicates that this performance cannot be generalized for the entire GOLB.

Table 5.1
Water Distribution in the GOLB: Views of Farmer Members of WUOs

Level of Water[4] Distribution (estimated %)	Area Uhana No. of WUOs	%	Gonagolla No. of WUOs	%	Weeragoda No. of WUOs	%	Total
More than 75% of farmers get adequate water	10	31	21	55	11	37	42
Between 50% to 74% of farmers get adequate water	16	50	15	40	15	50	46
25%- 49% of farmers get adequate water	05	16	02	05	04	13	11
Less than 24% farmers get adequate water	01	03	00	00	00	00	01
Total	32	100	38	100	30	100	100

Source : Self-Evaluation Survey of WUOs (1987) (N=100).

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4 For an elucidation of score ranking, please see Annex I - Self Evaluation Model.

Fifty five percent of WUOs in the Gonagolla area felt that more than 75% of farmers got adequate water, whereas in the Uhana and Weeragoda areas the corresponding percentages were 31 and 37 respectively. Farmers in Gonagolla attributed this satisfactory water distribution to two main factors: co-operation among WUO members and reliable water deliver due to the privileged location of land holdings. WUOs which reported adequate water distribution, were mostly located in the head areas of the D canals. This reliable water deliveries also promoted cooperation among farmers for WUO activities. On the other hand, farmers attributed poor distribution of irrigation water to faulty construction of channels and to Farmer Representatives' weaknesses in overseeing water distribution in 'their' channels. Farmers believed that inadequate water availability at the 'D' canal discouraged farmers in taking part in WUO activities at the field channel level.

Water Savings

Saving of irrigation water had increased as a result of farmers' participation in WUOs. About 70% of WUOs reported (see table 5.2) that the majority of farmers was concerned about other farmers' water requirements and therefore, attempted to save water by closing 'poles' once they received adequate water to their fields. Areawise, Uhana reported a low participation rate (50%) in water savings when compared with the other two areas - Gonagolla (79%) and Weeragoda (80%). Farmers in Uhana attributed this to the inefficiency of FRs and the lack of support from tenants and mortgagees who cultivated land in the area.

Farmers' attitudes towards water savings had been influenced by reliable system performance as well as by group efforts that had been developed through WUOs. It is difficult to know however, which of these two factors had more influence on farmers' behaviour. Agency officials, who took part in the GOLB water management project stated that system rehabilitation and activities of WUOs had equally contributed to these changes (see table 5.3). However, taking the entire GOLB as a whole, it is safe and proper to say that the overall improvement of water savings among farmers is mainly due to their cooperative attitudes and activities which had been evolved through their WUOs. In this regard, physical rehabilitation of the irrigation system cannot completely be ignored; both factors mutually strengthened each other.

Table 5.2
Water Savings in WUOs in the GOLB: Percentage Distribution by WUOs and Area

Level of Water Distribution	Area						Total
	Uhana		Gonagolla		Weeragoda		
	No. of WUOs	%	No. of WUOs	%	No. of WUOs	%	
Over 75% of farmers of WUOs closed their turnouts after obtaining adequate water	01	03	09	24	05	17	15
50-74% of farmers of WUOs closed their turn-outs after obtaining adequate water	15	47	21	55	19	63	55
25-49% of farmers of WUOs closed their turn-outs after obtaining adequate water	14	44	07	18	06	20	27
24% or less farmers of WUOs closed their turn-outs after obtaining adequate water	02	06	01	03	-	-	03
Total	32	100	38	100	30	100	100

Source : Self-Evaluation Survey (1987) (N=100).

Table 5.3
Reasons for Low Wastage of Water by Farmers: Agency Officials' Views

I	**Agency's Contribution**		
	More reliable water supply by the ID	20% ----	
	ID's strict water control	11% ----	50%
	Better channel maintenance	19% ----	
II	**WUOs Contribution**		
	Better understanding among farmers about others' water requirements	27% ----	
			50%
	Farmers' awareness that excess water is unnecessary	23% ----	
	Total		100%

Source : ARTI, 1986: 119.

Water Rotation Practices

The main objective of water rotations adopted by WUOs was to facilitate equitable distribution of water among all allotments along a particular field channel, especially when water was in short supply. For this, two types of water rotation were introduced: (a) 'tail-first' rotation and 'head-first' rotation. Between 1981 and 1984, WUOs took an active part in planning and executing water rotations (Ranasinghe Perera, 1985:38). The percentage of water-user organizations adopting water rotations increased from 28% in the 1981 **Yala** season to 78% in the 1983 **Yala** season (ARTI, 1984). However, the practice of water rotations by WUOs decreased to 51% in the 1985 **Yala** season (ARTI, 1986). This decline was not due to the inefficiency of WUOs, but due to the adequate water supply in 1985. At the same time, water rotations had increased equity in water distribution. However, the Department of Irrigation attributed the decline of adopting water rotations by WUOs in 1985 not only to the availability of sufficient irrigation water, but also to two additional factors.

a) The implementation of water rotations at the D-canal level and the continuous flow at the main canal level since 1983 (ISTI 1985).

b) The ID's computer-based water monitoring programme which led to a more effective monitoring of water deliveries and better estimation of actual water delivery requirements (Merry and Murray-Rust, 1987).

This agency view was supported by our survey. According to farmers of Uhana and Gonagolla areas, WUOs practiced water rotations more frequently during the period between 1981 and 1983 when compared with the period between 1983 and 1985. This was mainly due to the improvement in water deliveries as a result of physical rehabilitation of the irrigation system. However, WUOs in Weeragoda area began to practice water rotations systematically only after 1983. Farmers attributed these differences in water rotations to the presence of IOs in the field and to the commencement of physical rehabilitation works.

Farmers' involvement in water rotations varied widely among the three areas in the GOLB (see table 5.4). In Gonagolla and Uhana areas, the majority of WUOs (93% and 69% respectively) reported that farmers supported the irrigation agency (ID) by taking part enthusiastically in water rotations. In Weeragoda, however, only 37% WUOs reported that farmers had supported water rotations.

Low-level cooperation among farmers in water rotations in Weeragoda was due to several factors: first, they thought it was unnecessary to practice water rotations as the ID itself carried out water rotations at the 'D' canal level. Second, farmers felt that it was inconvenient for them to attend to water rotation in the night. Third, they found that their fields and field-channel banks were damaged due to heavy discharge of water during rotations. Fourth, in some areas, water did not reach the tail-end of field channels towards the end of the main water issue on rotation.

The WUOs' performance as an efficient mechanism of water management was suggested by agency personnel as well. According to the ARTI's postal survey, administered to different categories of agency officials, WUOs performed well in different aspects of water management and were capable of organizing farmers in water management (ARTI, 1986).

Table 5.4
Farmers' Co-operation in Water Rotations

Percentage of farmers who co-operated in water rotation in WUOs	Area						Total
	Uhana		Gonagolla		Weeragoda		
	No. of WUOs	%	No. of WUOs	%	No. of WUOs	%	
More than 75% members co-operated in water rotations	01	03	24	63	02	07	27
50-74% of members co-operated in water rotations	21	66	11	30	09	30	41
25-49% of members co-operates in water rotations	09	28	03	07	19	63	31
None of members co-operated in water rotations	01	00	00	00	00	00	01
Total	32	97	38	100	30	100	100

Source : Self Evaluation Survey 1987 (N=100).

Both farmers and ID officials agreed that water rotations helped paddy farmers, especially those who were at the tail-end of field channels, highland cultivators and encroachers. Such planned water deliveries allowed them to cultivate previously uncultivable land. Several research reports revealed that farmers were benefitted by water rotations organized mainly by WUOs (Ranasinghe Perera: 1985; Uphoff: 1982 and 1983). This was especially evident in Uhana and Weeragoda, e.g., M 5.4, UB 17, where about 800 acres of abandoned but cultivable lands were brought under irrigation through such water rotations.

Table 5.5
Observations of Agencies on Water-User Organizations and their Performance in Water Management

Agency Observations	Yes %	No %	Cannot say %
Farmers waste less water now than before	50	40	10
There is more equitable distribution of water now than before	70	23	07
There is better knowledge of irrigation system among farmers now than before	53	13	34
Farmers now show greater concern for water requirements of other cultivators of the channel than before	46	16	38
There is less damage to irrigation structures by farmers than before	57	37	6

Source : Final Impact Assessment Survey (1986). (N=36).

Conflict Resolution

Several factors caused conflicts among water-users: inadequate and unreliable water supply, damages to control-structures (e.g. the removal of channel flash gates) farmers' lack of confidence in water rotations and illegal water tappings. After the formation of WUOs such conflicts declined sharply. Accordingly the ARTI's Final Impact Assessment of the Project Study (1986), only 23% of farmers were involved in conflicts over irrigation water during the **Yala** season of 1985. The reported number of conflicts for both the **Yala** and the **Maha** seasons of 1985 did not exceed 10. The present survey found no conflicts over irrigation water in field channels in 50% of sample WUOs. This

Table 5.6
Farmers' Perceptions on Conflict Management through Their Water-User Organizations

Frequency of conflicts	Area						Total
	Uhana		Gonagolla		Weeragoda		
	No.	%	No.	%	No.	%	
No conflicts over water (if a dispute occurs, it is settled quickly and in a friendly manner)	07	22	28	74	14	47	49
Conflicts over water are rare and resolved satisfactorily	17	53	09	23	16	53	42
Conflicts over water are occasional and cannot be resolved at the WUO level	08	25	01	03	00	00	09
Conflicts over water are frequent	00	00	00	00	00	00	00
Total	32	100	38	100	30	100	100

was mainly due to their ability to resolve misunderstandings and settle clashes quickly and in a friendly manner. Another 42% of WUOs reported that conflicts over irrigation water took place only occasionally.

The table 5.6 shows that the settling of conflicts over irrigation water issues had successfully been done by WUOs in Weeragoda (100%) followed by WUOs in Gonagolla (97%). The success rate in Uhana is low (75%) when compared with the other two areas. In Uhana, farmers attributed this to the complexity of land tenure which caused difficulties in resolving conflicts. In Weeragoda, farmers were confident that they could resolve conflicts amicably because they knew well about the benefit of efficient functioning of their field-channels. In Gonagolla, farmers attributed the very low rate of conflicts over

irrigation water to the reliable water delivery, which is a direct result of the physical rehabilitation of the irrigation system.

5.2 Operation and Maintenance of Field Channels through WUOs

The Water-User Organizations were expected to help in system maintenance at the field-channel level in two ways: (a) cleaning channels prior to each cultivation season and (b) maintaining field-channels without damaging channel structures.

At the initial stages of the Water-User Organization Programme, O & M activities such as field channel cleaning, desilting and earthworks were organized through **shramadana** campaigns. The IOs organized farmers' **shramadanas** to show them the benefits of group efforts. However, it is correct to say that the main impetus for farmers' involvement in **shramadana** activities at the initial stages of the Programme came from physical rehabilitation activities in the GOLB. Furthermore, with IOs' encouragement farmers continued to involve themselves in **shramadanas** for various tasks. However, with the completion of physical rehabilitation activities and the drop out rate of IOs after 1983 decreased the volume and frequency of **shramadana** work in the GOLB (see table 5.7).

Table 5.7
WUOs' Participation in Channel Cleaning through Shramadanas: 1981 - 85

Year(1)	No. of WUOs	No. of Shramadanas
1981	100	77
1982	122	78
1983	131	124(2)
1984	302	166
1985	348	56(2)

(1) Status at the end of each year.
(2) Data on some **shramadanas** were not available.

Source : Water Management Quarterly Reports, ID.

This was due to several factors: (a) rapid drop-out rate of IOs which caused difficulties for organizing farmers for collective activities; (b) irresponsible behaviour of head-end farmers who continued to ignore their responsibility for channel cleaning, as they got enough irrigation water even without cleaning their field channels; and (c) the FRs' inefficiency in mobilizing their fellow-farmers for such activities.

Nearly half of the WUOs (48%) reported that their field-channels were well cleaned before both cultivation seasons. However, the area-wise performance is highly variable. WUOs in Gonagolla performed well (71%) followed by Weeragoda WUOs (54%). Good performance was largely reported by WUOs which were located in the tail-end areas of the 'D' canals, where field-channel cleaning is essential to get water to individual fields. The majority of WUOs in Uhana (62%) rated channel cleaning as poor in both seasons. They attributed this to several factors. First, physical rehabilitation of field channels provided more reliable water even without seasonal channel cleaning. Secondly, the presence of complex land tenure practices in the area, such as tenancies, encroachments and leaseholds, caused difficulties in promoting collective activity among farmers. Thirdly, was the lack of motivation and guidance from IOs in organizing **shramadanas** in the latter period of the Project; Fourthly, difficulties encountered in earthwork due to the length of some field channels which impeded cleaning operations through **shramadanas**; and Fifth, the absence of effective leaders among several WUOs who could motivate fellow-farmers to participate in **shramadanas**.

Protection of Channel Structures by Farmers

Damages to channel structures by farmers were common prior to the establishment of water-user organization in the GOLB (Widanapathirana, 1985; Murray-Rust, 1983; Uphoff, 1982; ARTI, 1983). At end of the WUO Programme, farmers' interest and commitment in safeguarding channels and minimizing damages to such structures have increased considerably.

Table 5.8
Degrees of Farmers' Involvement in Field-channel Cleaning: WUO Members' Viewpoints

Degree of Farmers' Involvement	Area						Total
	Uhana		Gonagolla		Weeragoda		
	No.	%	No.	%	No.	%	
Channels were well cleaned before both cultivation seasons	05	16	27	71	16	54	48
Channels were well cleaned before Yala and less cleaned before the Maha season	07	22	11	29	01	03	19
Channel clearing was poor before both seasons	20	62	00	00	12	40	32
Channels were not cleaned before either of seasons	00	00	00	00	01	03	01
Total	32	100	38	100	30	100	100

Source : Self-Evaluation Survey, 1987 (N=100)

The above table shows that WUOs protected their field-channel structures well. Factors that contributed to this improvement varied according to the area. Over ninety percent of WUOs in Gonagolla attributed this to the improvements that were made to the field channels during their physical rehabilitation. Such improvements included the removal of unnecessary gates and structures and the provision of reliable water deliveries to their fields. In Weeragoda, 70% of WUOs reported that the improvement was mainly due to farmers' participation in WUO activities. Such participation, they argued, had increased farmers' awareness of the importance of proper maintenance of field-channels. In Uhana, WUOs attributed the relatively low performance (53%) in

Table 5.9
Protection of Irrigation Structures at the Field Channel Level: Farmers' Assessment

Farmers' Assessment	Area						
	Uhana		Gonagolla		Weeragoda		Total
	No. of WUO	%	No.of WUO	%	No. of WUO	%	%
Over 75% of farmers well protected FCs	01	03	01	03	08	27	10
50%-74% of farmers protected FCs	14	44	34	89	13	43	61
25%-49% of farmers protected FCs	12	37	02	05	06	20	20
Less than 24% of farmers protected FCs	05	16	01	03	03	10	09
Total	32	100	38	100	30	100	100

Source : Self-Evaluation Survey (1987) (N=100)

protecting field channels to the lack of commitment among the 'non-allottee' farmers. These farmers showed little interest in keeping structures in good form. Selfish motives led them to damage structures as they did not consider themselves to be members of the community.

The agency officials too supported these observations and accepted that WUOs had the required capacity to protect field channel structures. Officials attributed the improvement of protecting field-channel structures to several factors: (a) operation of WUOs (b) better irrigation system performance (c) improved communication between the ID and farmers, which created a great sense of ownership and responsibility among farmers over their irrigation system (Merry and Murray-Rust, 1987).

5.3 Styles of Interaction among Water-User Organizations

Water-User Organizations at the field-channel level kept their links with higher-level WUOs such as Area Councils through their Farmer Representatives.

The majority of farmers (72%) said that their WUOs were efficient in communicating with agencies and higher level WUOs (Table 6.10). This was mainly attributed to FRs' good performance in forwarding field-channel level problems and issues to D-canal organizations and Area Councils. In Uhana, communication between field-channel level WUOs and higher-level WUOs was weak and this was mainly due to the inactivity of FRs and in some cases, the exclusion of FRs from higher-level WUOs. The same pattern was visible in the capacity of field-channel WUOs in obtaining necessary information from higher-level WUOs (see Table 5.11). Weeragoda area too showed rather a poor performance in obtaining necessary guidance and advice from higher organizations. Farmers attributed this, as in the case of Uhana, to lack of interest and leadership of their FRs.

The rapid drop-out of IOs created further difficulties for communication between FC-WUOs and higher-level WUOs. One such difficulty was the lack of close monitoring of WUOs activities; another was the stagnation of WUOs at the "organizing stage" which led to their heavy dependence on IOs. Particularly towards the end of the Programme, the quality of guidance and volume of information received by farmers from higher WUOs declined. As WUOs pointed out, the multi-tired structure of the WUO system was, on the whole, inefficient in generating satisfactory communication network as it depended on IOs or FRs or on both to link farmers with agencies.

However, agency personnel viewed WUOs as a satisfactory mechanism for disseminating information. The postal survey (ARTI, 1986) showed that 80% of agency officials felt that WUOs had done a good job in communicating information from the agency to farmers. Officials reported that farmer meetings at the field-channel level often helped them to inform farmers about ID's decisions such as water rotation schedules and to promote farmers' understanding of agencies' role in operating the irrigation system. 'D' canal WUOs provided a regular forum for agency officials and farmers to get together to discuss and resolve water-related problems. Officials of the Departments of Agriculture and Agrarian Services mentioned that WUOs facilitated their work at the field level.

5.4 Relationship Between Farmers and Agency Officials

The improvement of farmer-officer relationship soon after the establishment of WUOs in the GOLB was discussed by several researchers

(Wijayaratna, 1985: ISTI, 1985; Perera, 1986 and ARTI, 1986). The Final Impact Assessment Study (1986) pointed out that 63% of respondents of a sample survey indicated that they had no contact with agency officials before the WUOs were established. However, after the establishment of WUOs, this percentage had come down to 48%. Agency personnel also supported this observation. Out of 30 officials interviewed for the study (ARTI, 1986) 22 (73%) felt that farmers had evolved a better farmer-officer relationship through their WUOs. Twenty (66%) of them felt that the WUOs had promoted understanding and trust between agencies and farmers. They further pointed out that WUOs provided opportunities for farmers to reach officials to resolve their problems. On the other hand, farmers also realized the constraints and difficulties in operating the irrigation system and made efforts to resolve many of their water-related problems through WUOs, without going to the agency officials (ARTI: 1986).

Table 5.13 shows that farmers' contacts with agency officials improved during the Project period (51%). However, the degree of frequent and close relationship between the two groups had come back to the level of the pre-Project period soon after the Project was completed in 1985[5]. This general observation can be elaborated by highlighting area differences in communication patterns between farmers and agencies.

Table 5.14 shows that the majority of WUOs (68%) reported that their contacts with agency officials were weak and occasional. This perception was common to all three areas of the GOLB. Farmers attributed this to several factors. During the Project period, the IOs played a mediator role successfully in maintaining the good links between farmers and agencies. Farmers often obtained advice from IOs on how to organize meetings with officials and forward their problems.On the other hand, officials were ready to respond to IOs' requests which were made on behalf of farmers, as officials expected that IOs would bring only genuine problems to their attention. But when IOs were withdrawn at the end of the Project, farmers were not ready to take over IOs' role of consultation and mediation. This was due mainly, as discussed earlier, to the rapid dropout of IOs before they consolidated WUOs.

5 This negative observation may be due to the different definitions of qualitative relationships employed in the three studies. However, it is noteworthy that farmer-officer relationships have been as high as 89% at the 'occasional' and 'frequent' levels in post-Project era.

Farmers pointed out that high-level agency officials such as the Deputy Director and Irrigation Engineers of ID were very favourably impressed by the participatory strategy of WUO Programme and were willing to support it as its

Table 5.10
Farmers' Assessment of the Efficiency of their WUOs in Communicating with Higher-level Water-User Organizations

Degree of Efficiency	Area						Total
	Uhana		Gonagolla		Weeragoda		
	No. of WUOs	%	No. of WUOs	%	No. of WUOs	%	%
Field-channel problems - were always communicated to higher level WUOs	01	03	22	58	09	30	32
- were often communicated to higher level WUOs	12	38	13	34	15	50	40
- were rarely communicated to higher level WUOs	17	53	01	03	04	13	22
- were not communicated to higher level WUOs	02	06	02	05	02	07	06
Total	32	100	38	100	30	100	100

Source : Self-Evaluation of Survey, 1987 (N=100).

initial stages and got involved directly with farmers through 'Design Meetings' and 'Walking the Channels' exercises. As a result, the field-level officials such as Technical Assistants and **Jalapalakas** were compelled to follow their superiors' strategy in dealing with farmers. However, unfortunately before the end of the Programme, many of those high-level agency officials had been transferred out of the Project area. Their successors had had no proper briefing and therefore knew little about the Programme. As a result, in the latter part of

the Programme the participatory approach to water management received low priority from high level officials. This allowed the field-level officials to give up the participatory approach to water management and thereby recede to their characteristic low performance level which was quite detrimental to WUOs leading to an important issue i.e. the level of assimilation of the participatory approach to water management by agency officials.

Table 5.11
Farmers' Assessment of their Field Channel Level-WUOs Performance in Getting Information From Higher-Level Water-user Organizations

Farmers' Assessment	Area						Total
	Uhana		Gonagolla		Weeragoda		
	No. of WUOs	%	No. of WUOs	%	No. WUOs	%	%
FC-WUOs always attempted to know the decisions of H-L-WUOs	00	00	24	61	03	10	27
FC-WUOs frequently attempted to know the decisions of H-L-WUOs	15	47	08	21	10	33	43
FC-WUOs occasionally attempted to know the decisions of H-L-WUOs	12	37	03	09	15	50	30
FC-WUOs never attempted to know the decisions of H-L-WUOs	05	16	03	09	02	07	10
Total	32	100	38	100	30	100	100

Source : Self-Evaluation Survey of WUOs, 1987 (N=100).

Table 5.12
Officers' Rating on WUOs' Performance in Irrigation Communication - Percentages Distribution

Performance	Rating: Extremely Well	Moderately Well	Poor	Cannot say	Total
Communicating information from ID to farmers	16	64	00	20	100
Communicating information other agencies to farmers	10	64	13	13	100

Source : Postal Questionnaire Survey (ARTI 1986) (n=30).

Table 5.13
Levels of Farmer-officer Relationships: Percentage Distribution

Level of relationship	**Pre-Project** (Before project started-1979)	**Project-Period** (1979 - 1985)	**Post-Project Period** (after 1985)
Farmers' contacts with agency officials were frequent	36%	51%	32%
Farmers' contacts with agency officials were occasional	17%	15%	57%
Farmers' contacts with agency officials were rare or non existent	47%	34%	11%
Total	100 (n=215)[1]	100 (n=168)[2]	100 (n=100)[3]

Source : 1 (ARTI, 1983). 2 (ARTI, 1986). 3 (ARTI, 1987).

As discussed earlier, WUOs performed particularly well in areas where physical rehabilitation works were in progress. In such areas, engineers and other officials could work amicably with farmers as they had both necessary machinery, financial strength and man power to attend to farmers' requests. But towards the end of Programme, lack of finance and higher patronage demoralized the officials. As a result, they tried to avoid close links with farmers as they could not meet their requests.

Cooperation Among Field Channel Level Water-User Organizations

The Water-User Organization Programme according to farmers of the WUOs, was less successful in developing a group consensus among inter field-channel WUOs.

Table 5.14
Relationships between Water-User Organizations and Agency Officials in Post-Project Era: Farmers' Perceptions

Quality of relationship	Area						Total
	Uhana		Gonagolla		Weeragoda		
	No. of WUOs	%	No. of WUOs	%	No. of WUOs	%	%
Very good	01	03	01	03	01	03	03
Good	13	41	11	28	05	17	29
Weak and occasional	13	41	25	66	19	63	57
No	05	15	01	03	05	17	11
Total	32	100	38	100	30	100	100
	(n = 100)						

Source : Survey of Self Evaluation of WUOs in the GOLB: ARTI 1987.

As table 5.15 shows that nearly two thirds of Water-User Organizations had poor horizontal relations with each other at the field-channel level. This was mainly due to the nature of the WUO structure which placed more emphasis on vertical federation of different levels of WUOs than on horizontal linkages at field level. Thus in practice, WUOs at the field-channel level WUOs had become small isolated units which were mainly leaning towards higher level WUO

organizations.Thus farmers gathered and discussed with their fellow farmers in the same field channel without knowing what the farmers of other field channels did.

5.5 Water-User Organizations as a Vehicle for Agricultural Extension

Although WUOs have played a satisfactory role in irrigation water management in the GOLB, their performance in the spheres of agricultural extension, marketing and input distribution was far from satisfactory.

Table 5.15
Communication Levels Among Field Channel Level Water-User Organizations

Level of Communication	Area						Total
	Uhana		Gonagolla		Weeragoda		
	No. of WUOs	%	No. of WUO s	%	No. of WUOs	%	%
Contacts with other FC-WUOs were very good	00	00	04	10	02	07	06
Contacts with other FC-WUOs were satisfactory	09	28	15	39	04	13	28
Contacts with other FC-WUOs were weak and occasional	15	47	18	48	04	13	37
No contact with other FC-WUOs at all	08	25	01	03	20	67	29
Total	32	100	38	100	30	100	100

Source : Self-Evaluation Survey of WUOs, 1987 (n=100).

The majority of farmers of WUOs felt that their WUOs did not play an important role as a channel of obtaining inputs and extension facilities. They attributed this to several factors: (a) WUOs from their inception emphasised the

Table 5.16

WUOs' Contribution to Agricultural Extension: Farmers' Views

Views	Area						Total
	Uhana		Gonagolla		Weeragoda		
	No. of WUOs	%	No. of WUOs	%	No. of WUOs	%	
More than 75% of farmers met agricultural extensionists through WUOs	01	03	12	32	00	00	13
50% to 74% farmers met agricultural extensionists through WUOs	00	00	06	16	02	07	08
25% to 49% farmers met agricultural extensionists throughWUOs	25	78	17	45	24	80	66
Farmers did not meet agricultural extensionists through WUOs at all	06	19	03	07	04	13	13
Total	32	100	38	100	30	100	10

Source : Self-Evaluation Survey, 1987, (N=100).

importance of efficient water management and neglected extension services (b) The chief motivators of WUOs, i.e., IOs did not possess much knowledge in agricultural extension as they were trained mainly to deal with water management. Thus they had little interest in promoting WUOs as multi-functional farmer organizations (c) WUOs on many occasions failed to resolve water-related problems and as a result, farmers and Project personnel were reluctant to expand the scope of WUOs to include other services such as agricultural extension (d) The Department of Agriculture did not use WUOs to dispense their services and facilities to farmers at the grass-roots level. At best, they used WUOs occasionally for their training programmes only, for the reason that WUOs conveniently provided such programmes with 'groups of farmers'.

5.6 Summary

WUOs have played several vital roles in the GOLB: as a mechanism of getting farmers to cooperate in water saving, efficient water distribution and conflict resolution; by getting farmers to contribute towards O & M of field channels; and by providing a forum for interaction between farmers and agency officials.

WUOs have shown a cyclical progress during the Project life time. Initially the WUO Programme progressed rapidly culminating in 1983 and remained steady for another twelve months. After 1984, the Programme began to go down. The rapid initial progress of the WUOP was mainly due to IOs' innovative and enthusiastic support. Physical rehabilitation in some areas also encouraged farmers to group together and take part in construction works, as such activities ensured reliable water deliveries to their fields. Another factor was the agency support that was present from the beginning of the Programme until 1984. Such a patronage not only legitimized the Programme as a collaborative endeavour of farmers and bureaucracy but also encouraged field-level officials and Farmer Representatives to apply their energy and leadership capabilities to the benefit of the farming community.

The WUO Programme did improve irrigation water management in the GOLB. However, in different locations, different levels of efficiency for different reasons have been observed. Effective cooperation from farmers through their WUOs, efficiency of FRs, reliable water deliveries by ID and good location of field channels are some of them. The positive impact of WUOs on farmers' behaviour can be seen in the widespread improvement in water saving and rotation practices. At the same time, even if farmers did not accept or absorb everything they learned from WUO Programme. For example, channel cleaning is still done on **pangu** (share) basis than on collective **shramadana** basis, as they found that the former needs careful and costly preparation and the latter effectively obstructs 'free-riders' reaping benefits from others' efforts.

As a result, WUOs which had developed as mono-purpose institutions mainly to water management activities did not help farmers in the spheres of agricultural extension, credit and marketing issues as much as they were expected. This weakened their status as community organizations and reduced their chances of survival as sustainable farmer organizations.

CHAPTER SIX

Conclusions

During the last two decades researchers, trainers and extension workers have experimented with new strategies to engage rural people in development activities. One important area where such experiments have been carried out is irrigation water management. The Water-User Organization Programme in the Gal Oya Left Bank (GOLB) was the first experiment which emphasized beneficiaries' participation in irrigation water management in large-scale irrigation-cum-settlement schemes. An innovative aspect of this strategy was the emphasis it placed on the beneficiaries' evaluation of the programme benefits. For this purpose, a new research method called 'Self-Evaluation Model' was adopted at the end of the programme. This research report primarily explains farmer-beneficiaries' own evaluation of their WUOs. Several researchers spent three months in the Gal Oya Left Bank in studying 100 field channel WUOs and interviewing farmer-members of WUOs, farmer leaders and agency officials to understand how farmer-beneficiaries assess the benefits of the programme (see annex 1 for a discussion on Self-Evaluation Model: An Experiment in Participatory Evaluation Research).

This research study examined: (1) the possibility and desirability of bringing an external catalyst, called Institutional Organizers to evolve self-reliant farmer organizations in major irrigation-cum-settlement schemes; (2) the degree of acceptance among farmers of external interventions and how they adopt such interventions to suit their local socio-economic and physical environment; and (3) how such farmer organizations could interact with state agencies to maximize benefits for both parties. Also the study provides some guidelines for establishing effective farmer organizations in similar irrigation-cum-settlement schemes for better irrigation management.

Prior to the beginning of the rehabilitation project in the GOLB, the irrigation system was described as an engineers' nightmare and an anarchy syndrome. - The entire irrigation network was in decay and there was hardly any rapport between farmers and irrigation officers in managing the system. It was in this context, an outside intervention came in the form of physical rehabilitation of the irrigation system and the deployment of IOs to facilitate the formation of WUOs at the field-channel level.

The Project planners emphasised that there should be an intensive involvement of IOs in community activities at the initial stage of the programme, so that they could motivate farmers to take part in irrigation management at the field channel level. The IOs were expected to work closely with farmers during the organization phase and then to withdraw gradually during consolidation and maintenance phases. However, due to the unexpected exodus of IOs from the GOLB, this plan could not be implemented. As a result, the programme had to devote much of its time to recruit and train IOs and organize WUOs. Perhaps that was the only course of action that was available for newly recruited "replacement batches" of IOs. The shorter training programmes further aggravated their difficulties. Thus the new recruits lacked the necessary skills and knowledge to continue the processes of WUO consolidation and maintenance. The Process Documentation exercise should have helped them to do so, as it meant to record field level processes. But since that exercise was not properly done, new IOs could not learn much from these notes about field conditions. Thus many new IOs started their work from the beginning, sometimes confusing farmers who had already formed their WUOs. On the other hand, when WUOs did not evolve beyond their organization level, farmers continued to depend on IOs, without taking over IOs' activities gradually to themselves.

The commitment and interest of government officials such as the Government Agent in participatory development gave an impetus to the WUOP at its beginning. During its life time however, several senior government officials left the project on transfer. Their successors often did not show the same degree of enthusiasm and commitment to participatory management of irrigation water as they did. As a result, it became necessary to inform and convince new officials about the bottom-up approach to irrigation water management. This required time and resources which the Programme lacked towards the end of its life. At the same time, the senior researchers who led the

programme from its beginning also left the programme either to do their post-graduate studies abroad or for better jobs elsewhere, particularly when the programme required field supervision and coordination following the exodus of trained IOs. All these factors compelled IOs, most of whom were new recruits, to take the full responsibility of achieving the targets spelled out at the beginning of the Programme. In doing so they often attempted to achieve the target of organizing WUOs rather than consolidating them.

Despite these unanticipated difficulties, the programme progressed on the basic principles that were adopted at its beginning. In keeping with the bottom-up approach, IOs encouraged farmers to form into informal groups whenever possible on hydrological boundaries. IOs found new ways of forming and sustaining WUOs in difficult times. For example, in 1982, when drought affected the GOLB, IOs successfully formed WUOs at the field channel level by encouraging farmers to clean channels through **shramadana** (volunteer labour) and by rotating water among fields to save water for tail-end farmers. Again when physical rehabilitation works started, IOs keenly promoted farmer participation in rehabilitation design meetings and encouraged interaction between officers and farmers.

The Project beneficiaries' evaluation of WUOs' contribution to efficient irrigation management in the GOLB can be discussed under three major headings.

WUOs as Efficient Water Management and Problem Solving Mechanism

Water distribution became efficient and fairly equitable in all three areas - Uhana, Gonagolla and Weeragoda, where the WUO Progamme was in operation. Nearly 90% of WUOs studied indicated that over 50% farmer-members in each field level WUO received sufficient irrigation water for cultivation of paddy after the formation of their WUO. Farmers had shown a remarkable improvement in saving water and resolving water-related conflicts by themselves. However, in this regard, the contribution made by the physical rehabilitation works towards efficient water distribution cannot be ignored. The study revealed that farmers in some areas were very responsive and cooperative in adopting water rotation practices. As some farmers stated they showed interest in group work mainly to impress ID officials in order to obtain priority to their

field channels in rehabilitation works. Towards the latter part of the Programme, when the rehabilitation works were over, farmers did not cooperate with each other as they did earlier. Perhaps farmers would have felt that since the rehabilitation works were over, they could not obtain any more benefits from collective works such as providing labour for construction activities. On the other hand, the Irrigation Department also did not expect much cooperation from farmers in this regard, as rehabilitation works facilitated better water distribution which in turn, reduced water-related conflicts. For example, the introduction of the computerized water issue programme created among engineers a sense of complete control over the entire irrigation system.

WUOs as Institutions for Operation and Maintenance Works

Reports on farmers' damages to irrigation structures became less frequent after the establishment of WUOs. Both farmers' improved civic consciousness and assurance of water supply along field channels contributed to this. However, WUOs' role in O & M activities at the field-channel level was poor. At the beginning of the Programme, farmers as groups cleaned field channels in both cultivation seasons on **shramadana** basis satisfactorily. The IOs' role in this regard was vital. Later farmers showed little interest in cleaning field channels through **shramadanas** and preferred to clean their shares of channels individually as they did earlier on **panguwa** (share) basis. This can be attributed to two interrelated factors. First, when a field channel is too long, farmers found that they did not have sufficient local capacity to attend to O & M activities on the channel. Second, lack of guidance and leadership within WUOs also contributed to this situation. Although cooperativeness among farmers declined towards the end of the programme, farmers' individual contributions to field channel cleaning continued to be satisfactory.

WUOs as a Forum for Dialogue Between Farmers and Agencies

Field channel level WUOs were self-oriented and vertically linked with higher WUOs and agencies. Each WUO at the field channel level "gathered and discussed" their problems, but hardly had any discussions or actions with their fellow farmers in other field channels. IOs encouraged farmer leaders in field channel-level WUOs to develop close contacts with D-canal WUOs and Area Councils. Even where strong and motivated FRs were present, very few horizontal linkages were developed among field channel level WUOs. Whenever a FR was strong and enthusiastic he managed to obtain necessary information

and advice from higher WUOs and to inform about 'his' WUO's problems and requirements to higher level WUOs and government agencies.

The relationship between farmers and agency officials improved vastly as a result of WUOs. Confidence, mutual trust and communication between the two groups facilitated the participatory management of irrigation system. In bringing the two groups together, IOs played an important role. IOs were the intermediaries between the two groups, and officers were more at home with IOs than with farmers. On the other hand, many senior officials at the district level showed an unusual interest in the WUOs and recognized their value by integrating them with the Project level activities. All these encouraged both officers and farmers to interact favourably with each other.

Lessons Learned

The Water-User Organization Programme in the GOLB was introduced as a 'learning process'. This meant learning while implementing leading to improved methods, and adhering to certain desired principles and techniques for improving water management in large-scale irrigation settlement projects.

The delivery of adequate and reliable amount of water to an outlet is a precondition of any community level action below the outlet. In other words, if the main irrigation system is not maintained and managed well, it is difficult to operate effective WUOs at the field level. When water is scarce, farmers in adjacent field channels have to cooperate with each other to share water available. This is another good reason to develop horizontal links among field channel level farmer organizations.

In traditional villages, there had been some well established community arrangements associated with water management such as **bethma** to ensure equitable distribution of water among land holdings in the village paddy tract. Such traditional values and norms are absent in state-sponsored large-scale irrigation systems as settler populations in such systems are characterized by their heterogeneity in culture, traditions, and belief systems. Thus it is difficult to get settler farmers to agree on organizational matters as they lack the indigenous sentiments that bound them together as in traditional village community. Ironically, it is the common interests that could be developed in irrigation matters that would bring them together in a settlement scheme.

Obtaining water from a common source which is controlled by external agencies is a strong factor that could bring together farmers coming from diverse socio-economic backgrounds. Such common interests are an overriding consideration over other social heterogeneous factors for eliciting cooperation among group members.

In such environments, it is necessary to introduce some form of farmer organizational set-up preferably with the commencement of the system. If there were WUOs in the GOLB from its inception, the irrigation system would never have reached the status of "irrigation anarchy" with inoperable channels and mutually alienated farmers and officers, as found at the beginning of the WUOP. Thus the intervention of well trained, motivated catalysts is desirable at the beginning of any large-scale irrigation-cum-settlement system to organize settlers into farmer organizations.

This is closely linked with attitudes and behaviour of agency officials. When senior officials think positively about the value of farmers' participation in irrigation water management and act accordingly, field officers as well as farmers also find it important enough to spend their time and energy in irrigation-related activities. This brings us to the need of orienting officials at the beginning of a WUO programme. This can be done by organizing awareness creating dialogues between officials and project implementors before starting a WUO Programme. Such officers should be consulted at the stage of plan preparation and be given a feeling that they too are partners in the whole exercise. At the same time, farmers' knowledge and skills too are to be tapped in designs and construction. As in GOLB, 'walking the channel' exercises and 'design meetings' are highly useful in obtaining farmers' support for subsequent management activities.

WUOs should be loosely structured multi-purpose organizations. They should preferably be established on hydrological lines, that is, the members must jointly share and control a single water source such as a field channel. Furthermore, such organizations should be small enough to be self-managing. In the GOLB, the ideal size appeared to be about 15 farmers cultivating an area of about 50 acres. Thus if a field channel serves more farmers than this number, they should be encouraged to form more than one WUO along the same field channel.

In this regard, the right kind of local leadership within a farmer group plays a vital role. The leader should be able to mobilize his fellow farmers to decide a common action programme an to get their commitment to carry it out successfully. The leader should be accountable to his fellow farmers. This can be achieved by selecting the leader by farmers' votes. The group members should review his performance periodically and he should be compensated for his services by farmers.

The evolution of WUOs at different levels, for example, from field channel to D-canal to Project level will allow farmers to articulate their problems and demands at higher level. This facilitates farmer-officer relationship and also promotes farmers' self perception as share-holders of the Programme. But this should not lead to neglect the horizontal linkages among field level WUOs, as cooperation and cohesiveness among farmers in adjacent areas is vital for efficient water management under a D-canal. In the GOLB, this was missing. Such horizontal linkages can easily be evolved by Farmer Leaders of WUOs.

The evolution of WUOs from the field channel level to the Project level does not need to be strictly sequential. Some times it is advisable to establish higher level organizations along with field level organizations so that the vertical linkages thus created among different levels could lend interlocking support and strength to the whole programme. In this way, it is possible to sustain farmers' enthusiasm and to resolve their problems through the intervention of high level WUOs, if the need arises.

The vital role played by the IOs is clear in the entire process. In the GOLB, the success and failure of the WUOP depended largely on IOs. Therefore, their recruitment, training, deployment and administration deserve serious attention of Project planners and implementing agencies. The appointment of IOs only for a short period to help farmers organize WUOs is correct. But it is difficult to accept that the tenure of an IO should also be temporary, because without a career prospect, no intelligent and innovative graduate would agree to remain on a contract basis as an IO, when permanent employment opportunities exist for them elsewhere. In the GOLB, this problem became serious with the government's decision to appoint young university graduates as school teachers in large batches. The possibility of continuous dropout of recruits is present in any programme, when they are

recruited on a contract basis. Although the appointment of IOs on a permanent basis is difficult, it is necessary to arrange some long-term prospects for well trained and experienced personnel.

With the imminent possibility of drop out of IOs, the planners should try to retain the knowledge and experiences gathered by them. One way is to get them to write their diaries including their observations and analysis of the field situations continuously. The "Process Documentation' exercise is one way of monitoring the progress of WUO and also of transferring knowledge from leaving 'catalysts' to new recruits.

It is necessary to arrest the encroachment of partisan politics into WUO operations. At the initial stages of the Programme, IOs managed to experiment with different strategies of farmer groups mainly because of the non-interference of party politics in such activities. However, the Farmers' Convention held in 1984 broke this fine tradition. The party political manoeuvres of some local politicians destroyed the image the WUOP had as a apolitical exercise and this demoralized many farmers. Since Sri Lanka is a highly politicized society, it is inevitable that party politics encroach into local organizations. But to delay such intervention at least, until the organizations are well established is a *sine qua non* for sustainable farmer organizations.

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Annex I:

Self-Evaluation Method: An Experiment in Participatory Evaluation Methodology

Introduction

This section discusses how data were collected for this study through the Self-Evaluation Method. Since it is a new method in participatory research, it is necessary to discuss how it was adopted for the study.

The Water-User Organization Programme in the GOLB aimed at evolving a viable network of water-user organizations with the help of Institutional Organizers. Thus with the phasing out of IOs from the Water-User Organization Programme, the Programme envisaged that farmers, i.e., members of water-user organizations, would become self-reliant and continue with their own organizational activities without much external support. One important aspect of self-reliant farmer organizations is their ability to self monitor and evaluate their own performance. Such an exercise not only indicates to the members its organizational strength but also the weaknesses that need their special attention.

The ARTI introduced a follow-up programme in the GOLB in 1986 to enhance the WUOs' capabilities in self-evaluation. The main aspect of this follow up programme was the participatory evaluation research exercise in which both farmers and researchers were involved. It was envisaged that farmers would learn how to evaluate their Water-User Organizations by participating in this exercise.

The first step of this method was to identify the 'target group' and possible indicators (guidelines) for the self-evaluation. Field channel Level Water-User Organizations (FWUOs) were identified as the target group, on the following assumptions:

(a) FWUO is the core element of the Water-User Organization structure; therefore feedback from that level is essential to make them more efficient.

(b) Several group efforts such as **shramadana**, and water rotations are undertaken by farmers at this level; therefore, it provides an ideal arena to observe farmers' interactions.

(c) The style of operation of FWUO is essentially informal. This allows farmers to be critical of their own activities which constitute an essential part of the self-evaluation approach.

(d) The FWUO is a small group of farmers. The membership of a FWUO ranges from 4-26 (Process Documentation Reports, ARTI). Thus communication and understanding of group rules and procedures are easier than that of a higher level organizations.

After identifying FWUO as the target group, a set of indicators (guidelines) were developed to assess the nature of FWUOs and their strength and weaknesses. For this purpose, we have studied the objectives of formatting WUOs. There are four main objectives in establishing WUOs at the initial stage of the Projects.

(a) To get farmers' participation in efficient water management at the field channel level.

(b) To involve farmers in operation and maintenance activities of their field channel.

(c) To develop an effective communication network between farmers and agency officials and co-operation among farmers.

(d) To encourage farmers to resolve their water-related agricultural problems by themselves.

These objectives are not mutually exclusive, for example, efficient water management at the field-channel level cannot be achieved without maintaining the channel properly.

Following the above conceptual model, eighteen indicators were developed to assess the FWUOs[6].

(i) Water Management through FWUO

(1) adequacy of water distribution to all allotments along the Field Channel.
(2) degree of farmers' awareness on duration of water issues to the FC.
(3) degree of adoption of water saving measures by farmers.
(4) degree of co-operation among farmers in adopting water rotation.
(5) Capacity to resolve conflicts over water by FWUO.
(6) Capacity to follow appropriate water practices by farmers.

(ii) Operation and Maintenance of Field Channel (FC) by FWUO

(7) degree of FC cleaning by farmers in both seasons.
(8) level of farmers' participation in **shramadanas.**
(9) farmers' capacity to minimize the damages to structures.
(10) farmers' capacity to prevent potential damages to FC through WUOs.

(iii) Communication through WUO's

(11) extent of upward links from field level to higher level WUOs
(12) extent of downward links from higher level WUOs to field level.
(13) degree of relationship with agency officials.
(14) degree of relationship with other WUOs at field level.

(iv) Capacity to fulfil other agricultural needs through WUO

(15) capacity to obtain necessary agricultural extension services through WUOs.
(16) capacity to supply other agricultural inputs (fertilizer, insecticides etc.) through WUOs.
(17) capacity to get and repay the agricultural loans through WUOs.
(18) level of interest among farmers of WUOs to adopt other food crops.

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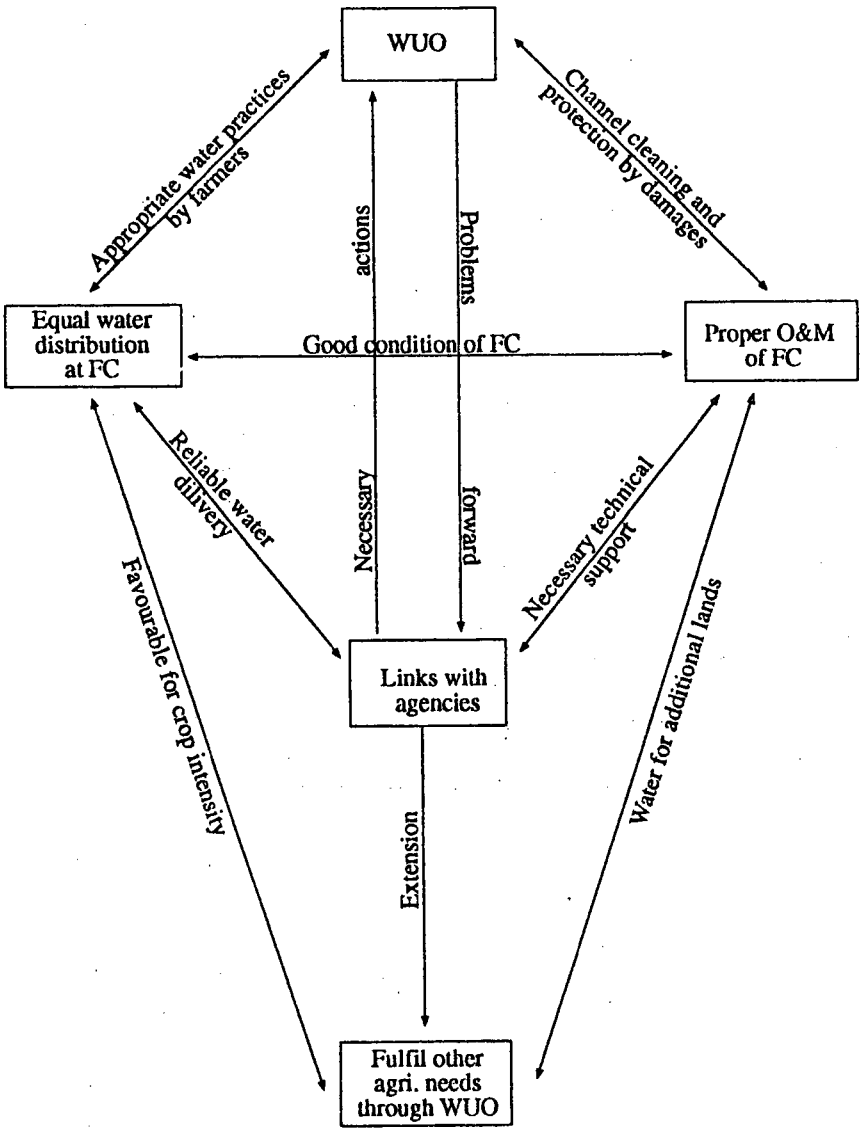
6 See Annex II for details.

Figure 5 : Schemetic Presentation of Objectives of WUO's in relation to Irrigation System Management



Scaling the Strength of WUO

To assess the strength (and weaknesses) of WUOs against each of the above indicators, we used an "ordered scale"*. The ordered scale consists of several statements for each indicator which allows to build up an idea about how a farmer of a WUO evaluates an aspect of his WUO. Statements about facts were not included as farmers might find it difficult to disagree with facts; thus only statements about opinions were included. Each statement extends from very favourable to very unfavourable with four points on a continuum.

Very favourable	Favourable	Unfavourable	Very unfavourable
(4)	(3)	(2)	(1)

* Feuerstein, Marie-Therese: (1986;99).

The following example shows how the "ordered score scale" was used in the study.

- number of farmers in the WUO = 12
- indicator

Table 1
Adequacy of Water Distribution to all Field Allotments Along the FC

Statement	Favourability	Score	No. of farmers agreed
All allotments of FC get adequate and fair share of water	Very favourable	4	8
Most allotments on FC get adequate and fair share of water	Favourable	3	2
Some allotments on FC get adequate and fair share of water	Unfavourable	2	1
Few (or) non on allotments get adequate and fair share of water	Very unfavourable	1	1

WUOs performance score	= 4 x 8	= 32
in distributing water to the	3 x 2	= 06
FC allotments	2 x 1	= 02
Total	1 x 1	= 01
		41
No. of farmers	= 41	= 12
	3.4	=

* Thus the level of water distribution to the field allotments of the FC is very favourable. In other words over 75% of farmers in the FC get adequate and fair share of water to their field allotments - 3.4 of 4 = 85%.

Pre-testing of Evaluation Indicators

Evaluation indicators were pre-tested:

(a) to find out whether the indicators and their ranked statements are well presented, clearly understood and easy to respond by farmers.

(b) what changes are to be made in wording, sequence of the indicators and what was to be removed and what was to be added.

(c) to identify the role of interviewer (investigator) in this kind of evaluation and to learn how to record their observations.

For the pre-test, fifteen field-channel WUOs were chosen in three major WUO operating areas in the GOLB - Uhana, Gonagolla and Weeragoda.

Selection of Sample WUOs

The survey was conducted in 100 selected WUOs in three WUO areas in the GOLB. Paragahakele was not included in the "sample frame" because the WUOs in this area were relatively new. In selecting the sample the "objective sampling" method was used. According to this method, first we numbered all the existing WUOs in the three major WUO areas in the GOLB at the end of 1985. From this "sample frame" a hundred WUO were chosen, by using a table of random numbers.This method is also known as "probability sampling" because

all existing WUOs started off with a probable or equal chance of being chosen for the sample.The following table shows the selected number of sample from each area.

Table 2

Area	Total No. of WUOs existed at the time of sampling	Sample	Sample as a % of total
Uhana	95	30	21
Gonagolla	135	38	28
Weeragoda	108	32	29
Total	338	100	30

Fielding Field Investigators:

At the planning stage, we expected to obtain the support of the remaining IOs to carry out the study. However, the heavy drop out of IOs necessitated the recruitment of field investigators. Thus eight field investigators were selected in November 1986 and they received a three week training on the following aspects of the study.

- Objectives of the WUO Programme
- Roles and functions of IOs in promoting WUOs in the GOLB
- Objectives of the self-evaluation methodology
- Necessary skills to conduct group self-evaluation with WUOs

Pre-arrangements for the Self-evaluation Methodology

The first task of a field investigator in the field was to collect basic information on selected sample WUOs. The following data were gathered through this exercise.

- Location of field channels in the "D" channel (such as head, middle, tail etc.).
- Number of farmers at the FC and total membership of WUO
- Date of the establishment of WUO
- Nature of land ownership (cultivation) of farmer members

After collecting basic information, the field investigator met all farmers in each of the sample WUOs individually and explained the purpose of the self-evaluation and benefits that they could gain by participating in this exercise. Secondly, he discussed with the Farmer Representatives of the WUO how to self-evaluate their performance. The field investigators carefully prepared schedules of group self-evaluation meetings. This was very important because the success of the self-evaluation method depended on the degree of participation of farmers in the evaluation process. Thus the scheduled group self-evaluations of WUOs were postponed several times by field investigators for lack of participation of farmers.

Mechanism used for Self-evaluation by WUOs

"Group discussions" were the mechanism of self-evaluating WUOs. The member-farmers of each WUO gathered for group discussions according to the time schedule they agreed upon earlier. This allowed farmer-members to express their views concerning how the WUO had affected them individually and collectively. Two investigators participated in each group discussion; one was the facilitator of self evaluation and the other was the observer who recorded farmers' responses as well as observed the group's interactions during the discussion.

At the beginning of every self-evaluation discussion a set of indicators (evaluation guideline) were given to farmer-members. The discussions started with the facilitator explaining the objectives and procedure of self-evaluation. The Farmer Representative (FR) played the main role in these discussions as the group leader. He initiated discussions by directing his group to identify priority areas which they would like to evaluate.

Once farmer-members choose priority areas for discussion, the FR continued the discussion according to the evaluation guideline that was already distributed. The facilitator intervened in the discussion minimally and only when necessary. To illustrate the process of a self-evaluation discussion, an example is given below. This discussion took place at the UB 2.7 WUO (Uhana).

- No. of farmers who participated in the group discussion = 8
- Indicator Discussed-level of FC cleaning by farmers in both seasons.

Table 3
Farmers' Priority Areas for Discussion at Group Discussion Sessions

Priority Area	Uhana No. of WUOs	Gonagolla No. of WUOs	Weeragoda No. of WUOs	Total No. of WUOs
Water management through WUOs	8	12	13	33
O & M of FCs through FOs	11	09	08	28
Communication through WUOs	06	08	04	18
Strength of WUOs	05	06	03	14
Obtaining agricultural requirements through WUOs	02	03	02	07
Total	32	38	30	100

Source : Study on Self-Evaluation of WUOs in the GOLB.

Farmer Representative (FR)

What is our general pattern of FC cleaning in both seasons (forward question for farmers)

Farmers (participants) did not respond to the FR at this moment and some dialogue among them.

Facilitator

We want to know how many of us clean FC in both seasons (Made more clarifications about FRs statement).

Member A

According to this guideline, we have to say that most of us have cleaned the FC in both seasons (respond positively).

Member B

No, I can't agree with him. I think only two or three of us cleaned the FC in both seasons, but the majority of us was not concerned with FC cleaning because they got water in both seasons without cleaning the FC. (contradiction of "A". This opened the discussion and made other members to respond).

FR

I think at the initial stages of our programme we organized some **shramadana** to clean the channel, but now it is not practised because no one is there to guide us in such work.
(FR is attempting to give more facts for members' disagreement).

Member C

But we have cleaned the FC in the **Yala** season regularly, but not in the **Maha.**

Members D and E

Yes, we feel the majority of us have cleaned the FC in the **Yala** season. (agreement with C)

Members F and G

Neither responded nor agreed with anyone of the group.

(At this stage, it was difficult to assess the extent of FC cleaning by members; therefore facilitator had to intervene).

Facilitator

I think we can discuss the reasons at the end of the discussion. Could you please tell me with what statement of the guideline you would agree. (and he read each of the four statements in guideline to farmers).

During the discussion an observer recorded farmers' responses.

Likewise, farmers were asked by the facilitator to respond to all indicators in the schedule of indicators. At the end of the discussion, farmers were asked to indicate their opinion on the benefits of self-evaluation discussions.

How did you feel about this self-evaluation discussion?

0	25	50	75	100
!	!	!	!	!
Not good	fairly good	good	excellent	

Since this was a novel experience to most of the FRs as well as farmers, they needed guidance especially to understand clearly the evaluation guidelines. Inexperience in participating in meetings, low self-esteem and backwardness among farmers in many instances provided FRs with an opportunity to dominate group discussions. To avoid this, each member was requested to express his opinion. For example, when the FR said they met regularly to discuss the problems of field channels, other farmers often did not contradict his statement as they felt that by doing so they might strain their relationship with the FR. The facilitator was expected to minimise any friction that might arise as a result of free discussions among farmers.

The Role of Facilitator

The task of the facilitator was to assist the farmers to evaluate their own organizational activities. But it was a difficult task as farmers felt that they were being evaluated by an outsider. This feeling among farmers would negate the value of the self-evaluation method. Therefore, the main tasks of the facilitator was to motivate farmers to self-evaluate their performance as members

of an organization. To do this, the facilitator needed some skills and insights to bring new perspectives. But at the same time, he was expected not to use group discussions as a forum to generalize his observations or findings from previous similar exercises. (i) The nature of facilitation varied according to the personality of FRs, literacy level of WUO members and co-operation among group members. Where the FR was well trained and experienced in organizational activities, the facilitator's role was easier as the FR could direct discussions according to the evaluation objectives.

The Role of the Observer/Record Keeper

The Observer kept records without taking part in group discussions. He watched farmers' behaviour and reactions to indicators. At the end of the discussion, the Observer presented his observations to the group. WUOs which had secured low scores for an indicator was asked to discuss the reasons for their low performance.

Through these feedback dialogues group members were given an opportunity to make suggestions on how to improve their WUOs' performance. On the other hand, WUOs which had a good performance rating against each indicator showed how they overcame their initial difficulties and more importantly, how these successful experiences can be adopted by weaker WUOs to strengthen themselves. Furthermore, feedback dialogues were useful in assessing WUOs' strength. For example, a WUO which secured a high score for efficient distribution of irrigation water attributed the success not to their WUO's strength but largely to the fact that their WUO was located close to a distributary canal. This advantageous location of their field channel allowed its farmers to get good water deliveries to their fields. Another WUO attributed its low score for efficient distribution of water to inadequate water availability in their field channel and argued that it was the responsibility of the irrigation agency to supply adequate irrigation water to each field channel, so that WUOs could redistribute it equally and efficiently among group members.

Annex II :

Identified Guidelines for the Self-Evaluation of WUOs

Water Management

A. Water Distribution

1 = few allotments on field channel get adequate and fair share of water
2 = some allotments on field channel get adequate and fair share of water
3 = most allotments on field channel get adequate and fair share of water
4 = all allotments on field channel get adequate and fair share of water

(If low score is due to inadequate supply of water to field channel outlet, this should be reported to the ID).

B. Communication

1 = few farmers on field channel know when their water is coming
2 = some farmers on field channel know when their water is coming
3 = most farmers on field channel know when their water is coming
4 = all farmers on field channel know when their water is coming

C. Water Saving

1 = farmers never close poles when their fields have enough water and field channel supply was never stopped

2 = some farmers close poles when their fields have enough water and field channel supply was occasionally stopped
3 = most farmers close poles when their fields have enough water and field channel supply was sometimes stopped

4 = farmers always close poles when their fields have enough water and field channel supply is stopped

D. Rotation

1 = no farmer is willing to cooperate in rotation
2 = some farmers are willing to cooperate in rotation
3 = most farmers are willing to cooperate in rotation
4 = all farmers are willing to cooperate in rotation within field channel whenever water supply is short, or to save water

E. Conflict Management

1 = frequent conflicts
2 = some conflicts
3 = conflicts over water rate, and settled fairly, quickly and in a friendly manner
4 = no conflicts over water, or any disputes settled quickly and in a friendly manner

F. Water Practices

1 = many farmers keep water at unnecessary level, e.g. try to control weeds with water instead of labour or spraying
2 = some farmers keep water at unnecessary level
3 = only few farmers keep water at unnecessary level,
4 = farmers keep water levels in their fields at the minimum necessary level

Maintenance

A. Field Channel Maintenance

1 = channel is not cleaned before Maha and Yala seasons
2 = channel is somewhat cleaned before Maha and Yala seasons
3 = channel is well cleaned at least before Yala season and some cleaning before Maha
4 = channel is well cleaned before both seasons

B. **Shramadana** (if applicable)

1 = many do not participate in shramadana and work not satisfactory
2 = most participate and do all right work
3 = almost everyone participates and does good work
4 = everyone participates and does good work

C. Structures

1 = structures not protected, considerable breakage
2 = structures somewhat protected, some breakage
3 = structures protected
4 = structures protected, no breakage at all

D. Preventive Maintenance

1 = no vigilance, potential breaches and other damage ignored
2 = some vigilance, potential breaches or other damage sometimes detected and reported
3 = vigilance, potential breaches or other damage detected and reported to ID
4 = great vigilance, potential breaches or other damage detected early and prevented by repairs by organization

Linkages

A. Upward Linkage

1 = field channel problems are not communicated upwards
2 = field channel problems are sometimes communicated upward, sometimes with good results
3 = field channel problems are often communicated upward, often with good results
4 = field channel problems are always communicated to D-channel organization or higher levels if necessary, with good results

B. Downward Linkage

1 = decisions from higher levels (Area Councils, DAC, Project Committee) are not communicated to farmers
2 = some decisions are communicated to some farmers
3 = most decisions in D-channel organization and higher levels are communicated to most farmers
4 = decisions from D-channel organization and higher levels are always communicated to all farmers

C. Relations with Officials

1 = contact with relevant officials is rare or non-existent
2 = contact with relevant officials is occasional and their response is sometimes good, sometimes poor
3 = contact with relevant officials is common and their response is usually good
4 = contact with relevant officials is frequent and their responses are very good

D. Relations with Other Field Channel Organizations

1 = contacts and cooperation with other field channel organizations are rare or not good
2 = contacts and cooperation with other field channel organizations are occasional
3 = contacts and cooperation with other field channel organizations are frequent and satisfactory
4 = contacts and cooperation with other field channel organizations are frequent and very good

Agricultural Development

A. Agricultural Extension

1 = farmers have no discussions
2 = farmers have occasional discussions
3 = farmers have some good discussions

4 = farmers through organization have frequent and good discussions with KVS and AI about improving their agricultural practices

B. Agricultural Inputs

1 = no farmer is getting or using inputs (fertilizer, insecticides, etc.)
2 = some farmers are getting and using inputs
3 = many farmers are getting and using inputs
4 = farmers are getting and using a full set of agricultural inputs to raise production

C. Agricultural Credit

1 = no farmer gets credit
2 = some farmers get credit
3 = many farmers get credit
4 = all farmers to get credit and repay them

D. Agricultural Diversification

1 = lack of appropriate water management, extension and inputs make non-paddy crops impossible
2 = there is little interest and possibility for non-paddy crops
3 = there is some interest and possibility for non-paddy crops
4 = adequate water, agricultural extension and inputs are available and favourable for non-paddy crops