



PARTICIPATORY MANAGEMENT IN SRI LANKA'S IRRIGATION SCHEMES

INTERNATIONAL IRRIGATION MANAGEMENT INSTITUTE

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Summary: Several forms of participatory management are either experimented with, in use. or have been in use in Sri Lanka by various agencies (Government Semi-government and voluntary). An overview of village irrigation systems in Sri Lanka. with reference to ongoing irrigation development efforts and particular irrigation management needs is presented. as well as priority research issues relevant to small-scale irrigation systems.

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INTRODUCTORY REMARKS

Workshop Coordinator
Senarath B. Bulankulame

Sri Lanka is one of the few countries that utilized irrigation for agriculture from ancient times dating back to 25 centuries. This lost hydraulic civilization was rediscovered early and most irrigation works restored and rebuilt by the middle of this century. By harnessing modern science and technology, entirely new and complex irrigation systems have been built, even diverting water from one river basin to another. In the management of these irrigation systems, the participation of the user-farmers has now become a central focus in government policy and field implementation.

The Need for the Workshop

This interest has resulted in several participatory approaches in the various types of irrigation works in Sri Lanka, the latter commonly distinguished as large, *medium*, and small systems. The roles that farmers and their organisations on the one hand, and officials on the other, have to play in irrigation management need further clarification. Strategies for assisting farmers to develop organisational capacity also need further refinement.

The current approaches show a great deal of diversity in their organisation strategies and management structures as well as differences in the relationship of these organisations to state agencies and to one another. Their scale, replicability, and sustainability are also divergent. Most projects have existed in isolation from one another resulting in little pooling of knowledge and experiences. These approaches are old enough to offer valuable lessons.

The effort to promote farmer participation is of interest to the International Irrigation Management Institute (IIMI) which is engaged in research to improve irrigation management. In seeking ways to collaborate with national agencies, IIMI sponsored a workshop in cooperation with the Irrigation Management Division of the Ministry of Lands and Land Development. It was held at the IIMI Headquarters in Digana from 15 to 17 May 1986.

Objectives of the Workshop

The 42 participants consisted of policy planners, implementors, managers and researchers from Sri Lanka, IIMI staff, and a few expatriate specialists. All these persons are involved in various aspects of participatory management of irrigation projects.

The objectives:

1. To review the more important and promising recent and current approaches in participatory irrigation management so that a larger body of concerned officials and students of the subject could benefit from an interchange of experiences and ideas.
2. To enable a systematic analysis and comparison of the diverse experiences in order to derive the most salient policy and strategy lessons.
3. To present recommendations of the Workshop to the Government and related agencies in order to assist them in the formulation of management policies.
4. To publish the Workshop papers so that a wider national and international audience could broaden their knowledge and compare the experiences in Sri Lanka.

This volume includes the edited version of the papers presented at the Workshop as well as an interpretative overview incorporating the themes and issues that emerged from the papers and the discussions that followed.

The Organisation of the Workshop

The Workshop spread over 2 1/2 days and comprised several sessions, divided into three areas, dealing specifically with case studies on the different types of irrigation systems, general topics such as policies, legislation, research and training, and one group session and a final plenary session meant to draw out conclusions and recommendations.

Due to limitations of time and logistical difficulties, only a few of the varied types of participatory approaches could be dealt with. The Mahaweli project was an obvious choice. So was the well-documented Gal Oya Water Management project. The Tank Committee exercise, now a part of history, was selected for

the many lessons it had to offer. The INMAS programme, the latest effort, has generated a great deal of hope as well as interest. Of the small-scale systems, the choice was restricted to three distinctly varied projects: the Wew Sabha, the Village Irrigation Rehabilitation Programme, and the Small Farmer Development Association. Although these do not cover the full spectrum of participatory approaches to irrigation management in Sri Lanka, we believe that they are representative of the more interesting exercises.

Acknowledgements

Grateful appreciation is rendered to Dr. Thomas Wickham, Director General of IIMI, for his ready appreciation of the objectives and support from the planning stages till the completion of the Workshop. The ready response of the authors and the cooperation of the participants were gratifying and we are indebted to them, Contributions of several senior colleagues at IIMI, notably that of Dr. Douglas Merrey, are greatly appreciated.

Miss Ameeta Perera was the most efficient Secretary of the Workshop. She needs special mention for the patience with which she suffered the difficult task of unravelling my most illegible handwriting as well as for undertaking single-handedly the large volume of paper work involved.

Mr. Norman Van Eyck (Graphic Artist) and Mr. Varuna Abeywardene did an efficient job in designing the folder and programme, publishing notices, and photocopying Workshop papers. Logistical arrangements were ably handled by Mr. M. Jones, Director of Administration, and Mr. K.C. Perera. Mr. Sepala Weerasooriya (Club Manager) and his staff provided excellent restaurant service.

Mr. Kapila P. Wimaladharmasiri's work in the substantial editing of the papers and of the discussions within a short period of four weeks is gratefully acknowledged; as is the technical edit by John Colmery of the Communication staff.

The recommendations that came from the workshop deliberations were sent out to the members of the Sri Lanka IIMI Consultative Committee for comments before publication. It was gratifying to note that several responded with valuable comments which were however not included here since they were not originated from this workshop's deliberations.

OVERVIEW

by
Kapila P. Wimaladharm

The purpose of this short chapter is to pull together the key arguments in the 13 Workshop papers and to notice the salient trends of the lengthy discussions that followed their presentations. An attempt is made to brief the reader with an interpretative summary of the Workshop proceedings drawing attention to the themes explored, the issues debated, and the conclusions arrived at.¹

In common with most developing nations in the region, heavy investments on irrigation loom large in Sri Lanka's plans for agricultural development. But the economic performance of the irrigation systems has been far below their potential. This is partly because of the tendency to neglect their continuous maintenance and, more importantly, because the water-users have remained peripheral to the management system. There is evidence now of a shift in emphasis from an earlier, heavily technically oriented concern with construction and control of the main system, to one where operation and maintenance of the downstream system and the organisation of water-user farmers for water management, are deemed equally important. This latter task is recognized as an inter-disciplinary one. However, there is a lack of systematic data on many aspects of irrigation systems management.

The problem of the dearth of information and research on the different types and styles of irrigation management, is a critical one faced by the policy-makers and implementing agencies. One might find this surprising, particularly because Sri Lanka boasts of a long tradition of irrigation, harkening back to ancient times. Different types of irrigation works ranging from minor scale (even as small as 5-10 acres) to giant schemes (e.g. Mahaweli) with a range of other intermediate types, variously termed medium and major, found within the geographical area called the dry zone, or more appropriately "tank country." In the hill country, anicut schemes dominate the irrigation scene. The management

¹Contributions made at the discussions are acknowledged by reference to the participant's name given in parentheses.

systems that have evolved over the years or have been imposed by technical design and by administrative fiat in recent times are as diverse as the types of systems. Though the use of the term "participatory management" is of recent origin, the ideas and activities that this phrase connotes are not unfamiliar to Sri Lankans. Obviously there are different nuances in approach and divergent strategies in the broad area of irrigation water management.

Different approaches bespeak of different irrigation management policies. The very fact that there are three separate Ministries and a host of implementing agencies under them and that each Ministry deals with a distinct type of irrigation system explains this diversity of approaches and the resulting absence of a common policy. Given this situation, Nanjā Aheywickrema questions the feasibility, and indeed the relevance of a common irrigation policy for Sri Lanka.

The whole question of the need for participatory management and the conditions impeding or favouring it should therefore form the core in an examination and review of the Sri Lankan experience in participatory irrigation management.

The workshop was structured in a manner that facilitated the treatment of the participatory management problem from the perspective of three distinct irrigation systems and their associated management patterns. There were workshop papers on the Mahaweli and Gal Oya, representing the large, multi-purpose project type; on the INMAS projects, which represent the intermediate category ranging from medium to major project; and on the village systems. The latter exhibit divergent characteristics within themselves, as can be seen from the observation that the village irrigation rehabilitation programme was significantly different from the *wew-sabha* projects. The tendency to treat the three systems in isolation of each other was reflected at the Workshop too. A paper exploring the cross-system relations was missing. Fortunately this lacunae was recognized and filled in at discussion sessions which surfaced similarities and differences between the different systems, particularly in relation to water-user involvement in management.

There was general agreement on what participatory management meant, and what its character was. There was general consensus that officials and farmers represented the two sides of the equation. However, there was a sharp difference of opinion on its boundaries and limits.

This disagreement in a way can be anticipated from the manner in which the participatory management equation was worked out. Its formulation at once raises the ideological and theoretical issues in which the conflicts of bureaucracy vs. peasantry, controllers vs. users, have become key debating points in the social sciences. The present workshop concern was fortunately more

mundane. It boiled down to the question of defining the relative roles of the officials and farmers, and that was decided largely on their relative capacities. However, a residue of a paternalistic attitude, inherited from a bygone era of colonial administration, was evident in the way some officials wished to define the limits of farmer-participation. They preferred to confine the farmers to the downstream and the officials to the main system, with a possible concession in regard to the systems in between consisting of distributory channels, in which a combination of official and farmer control could be allowed. On the other hand, some researchers suggested a larger concession with officials confined to the headworks and its regulation and limited to the maintenance and law-enforcement of the rest of the system. This arrangement was urged even in an experimental way (*Wimaladharmā*). The officials were unduly apprehensive about the farmers' capacity whilst the researchers were overly confident.

Hitherto, conceding a place for farmer participation was broached only in relation to the major schemes because it was believed that such participation already existed in village schemes. The established convention is that in a major scheme, the farmers are responsible only for the maintenance of the field channels and that everything else is the responsibility of the Irrigation Department officials. A shift in government policy, strengthened by the encouraging results from the experimentation in Minipe, Gal Oya etc., is largely responsible for this recent concession to farmer involvement.

When it came to the village systems, it was assumed, often wrongly, that they were fully farmer-managed systems, and that what was required for them was to systematize and strengthen farmer management whilst simultaneously refurbishing and improving the physical apparatus. The State stepped in to physically rehabilitate the village works and to arrange for their better management. What resulted from this well-intentioned state intervention was on one hand a throw-back to a paternalistic attitude in the officials and a concomitant dependency syndrome among the farmers, and on the other hand, an incorporation of the village unit into an island-wide and uniform organisational structure in which the officials played even a larger role. As reported by Shyamala Abeyratne, the Village Irrigation Rehabilitation Programme seems to have achieved this result, which was the opposite of what its planners intended.

State intervention is becoming inevitable under the various government programmes for rural development in which irrigation is a key component. The result is a pervasive tendency towards increasing farmers' dependency on the irrigation bureaucracy. This process of organisational uniformisation and bureaucratic domination is aided by the parallel and inexorable process of market, social, and political incorporation of hitherto somewhat independent rural units into the regional and even national networks.

Farmer participation in irrigation management in the major projects, including the Mahaweli Project, was admitted as a *goal* worth pursuing. On its form and content no hardline positions were taken. On the contrary there was flexibility, compromise, and a willingness to learn from one's own experiences and the experiments of others. Nanda Abeywickrema posed the challenge to the professionals and to the social scientists, and in doing so revealed the underlying objectives, when he concluded that, "Any government would be interested in participatory management if it could be demonstrated that such measures would help reduce government commitments for maintenance and rehabilitation, and more importantly, if it would reduce grievances within the farming community, leave alone the governments desire to see a prosperous community." Lands Ministry's own response is the programme for the Integrated Management of Settlements (INMAS).

Ananda Gunasekera describes the nature of the INMAS organisation, currently executed by the Irrigation Management Division (IMD) through the new cadre of the project managers, and the structure of the farmer organisation, its centre piece. The Field Channel Group of about 15 to 20 farmers and its representative are the basic building blocks of a 3-tiered organisation. Structurally it is similar to the Mahaweli farmer organisation of which the basic terminal unit is the Turn-Out group of about the same number of farmers. T.H. Karunatileke relates the vicissitudes that the Turn-Out Group underwent to reach its present state. The Mahaweli Turn-Out Group and the unified management system have influenced IMMAS's organisation principle, whilst Mahaweli has moved in the direction of farmer participatory management, which IMD has successfully demonstrated.

Significant lessons were drawn from two previous exercises—the Tank Improvement and Modernization Project (TIMP) and the Gal Oya Water Management Project. Terence Abeysekera draws attention to the heavy bias towards construction and engineering aspects and the poor design for farmer involvement in the TIMP which resulted in the bureaucratization and eventual failure of irrigation management. On the other hand, in Gal Oya, Jayantha Perera notes the conscious attempt to involve farmers early on in the decision making on designs and construction during physical rehabilitation and continuing during the operation and maintenance of the system. As a prelude, this step-by-step preparation of the farmers for participatory management, using a new but well-trained cadre of catalysts called Institutional Organizers, yielded good results. The Gal Oya lessons have now been incorporated in the INMAS Programme (K.D.P. Perera). However, the "learning process" and therefore the tentative nature of the results have to be borne in mind. The project progress monitoring has to be continued for sometime so that the simple but effective progress measurements developed there could be further tested and validated before they are replicated in other projects (C.M. Wijyaratne).

Once policy and strategy for participatory management was disposed of, there was a search for the conditions that promoted or impeded farmer participation. The difficulties arose from diverse sources - statutory, organisational, socio-political, and engineering designs.

J. Alwis traces the historical source of certain statutory and institutional barriers. He locates within them the conflict between the principles that govern an agricultural democracy with those that are required to govern an irrigation democracy. In short, it is the age-old problem of individual benefits from agricultural activity versus the public good resulting from the sharing of a common source of irrigation, water. The laws ensure individual rights whilst operations demand collective responsibility. The sphere of statutes too contained conflicts. For example, Irrigation Ordinance of the Lands Ministry clashed in certain operational aspects with the Agrarian Services Law of the Agriculture Ministry. The discussion session brought out many more instances of incongruencies which impede effective field management. Some of these were; inconsistency between the INMAS Project boundary and Agrarian Services Center's area of jurisdiction (Jaliya Medagama); the responsibility for *kanna* (cultivators) meeting charged to both the Government Agent and the Commissioner of Agrarian Services (Chris Panahokke); and varying procedures for conflict resolution and prosecution for offenses (R. Wijesinghe). Therefore the time has come to provide for jurisdictional clarity, statutory consistency, and legislative innovations in the matter of irrigation management. The problem needs to be approached **from** the integrated perspective of the farmers and of systems management rather than from the segmented ministerial point of view.

Socio-political factors impeding improved management were more intractable. Certain features have evolved over the years and arose again in our discussions: encroachments on reservations set apart for drainage, roads, and canals, with about 20% exceeding the irrigation specification area (N. Kumaraswamy); the varying sizes of present holdings which have resulted from surreptitious sub-divisions and from authorized fragmentation (J. Bandaragoda); the differential capacities of farmers in adopting improved technology (S. Weerasinghe). There has been a growth of middlemen entrepreneurs who have enlarged their holdings by renting-in or buying-out from the imprudent allottees (Jayantha Perera), who have established symbiotic relationships with the project officials and the political influentials (Douglas Merrey), and who usually disregard collective action demanded by participatory management.

There was a wide-ranging discussion on the question of what could be done about these features which appear to be built into the social system. The statutory stipulations to dislodge and punish the deviants in matters of water distribution, and administrative orders to disregard them in extension work, credit disbursement, crop insurance, *kanna* meetings etc., do not accord with current

socio-political reality. On the other hand, a good measure of collective action was obtained in Kimhulwana-Oya Project by co-opting the encroaches and leaseholders into the project organisation. The challenge before project management is therefore to discover ways in which it could deal with this vexed socio-political problem.

The major irrigation systems constructed before the 1970s were invariably designed for a *Maha* (wet) season cultivation only. Extracting a *Yala* (dry) season cultivation even from a fraction of the irrigable extent is therefore a difficult proposition which the best management system would find it hard to overcome. Further, the channels were earlier designed for continuous flow which posed no serious problem for a single *Maha* cultivation. It was only in the Mahaweli and in the projects that followed, that two season cultivation was consciously planned for and small turn-out areas and one-cusec canals designed specifically for rotational water distribution. Proper management thus became an important guide in irrigation systems design. Even then, management in the early days, e.g. at the time of TIMP, was conceived of in terms of an officer-dominant system, in which farmer involvement was expectedly minimal (K.A.T. Nikapitiya), if not altogether absent. Nevertheless, irrigation officers were obliged to seek the co-operation of the farmers, and as at Minipe, to experiment with organisational measures to secure and sustain that co-operation (Godfrey de Silva). It took a considerable time for the Irrigation Department to realize its importance and to adopt an explicit policy aimed at fostering farmer participation. Thus a virtue was made out of a compelling necessity.

Granted that farmer participation was a virtue as well as a necessity, the problem of preparing both farmers and officer, for participatory management remained an important issue. Training, which had hitherto been largely confined to technical aspects for the professionals and to extension matters for the farmers, was soon recognized as an effective instrument for this new found purpose. Ganewatte's review of past training programmes highlights their short comings for the attainment of the specific objective of farmer involvement in the management decision-making process. In the Mahaweli project, a continuous and comprehensive training programme covering not only the organisational aspects of water management, operation and maintenance but also agricultural extension and community development was vigorously pursued and, according to Jayantha Jayawardena, yielded satisfactory results. The specialized training programmes conducted by the Agrarian Research and Training Institute (ARTI) for the Gal Oya Institutional Organizers, and by UNDP-Sri Lanka Project for Achieving Settlement Expertise (PASE) for INMAS Project Managers have made positive contributions towards participatory management.

The three case studies of village irrigation projects in fact presented three different approaches to participatory management. In the Monaragala VIRP

project Shyamala Abeyratne observes little or no participation of the beneficiaries either in designing or constructing the rehabilitation programme; in fact what was left of farmer management soon evaporated once the state-sponsored rehabilitation work commenced. On the other hand, the Wew-sabha (tank council) set up by the Freedom From Hunger Campaign Board to restore small village tanks, sought to preserve and strengthen self management. D.R. Wijetunge reports on their successful implementation. T.B. Subasinghe describes a recent attempt to mobilize local man-power and other resources through the Small Farmer Development Association; though success stories have been reported it is admittedly too soon to pronounce a judgement.

Wimaladharma brings to light less-known examples of a high degree of farmer involvement in irrigation management, where non-governmental organisations have played the catalyzing role. Comparing several exercises in irrigation management he draws attention to the significance of three variables, viz. project scale, age of the settlement, and sponsoring agency. Where the projects were small and sponsored by an NGO, there was a greater degree of farmer participation and self-management. On the contrary the large scale and the infant stage of settlements in the Mahaweli and later projects, *ipso facto*, set limits to farmer involvement purely because a greater responsibility is cast on the officials. Though both groups "participate," the officers do so more than the farmers. There is the much publicized but exceptional case of Kibulwana Oya where a research study revealed that water was well distributed and the system was effectively managed without much participation from the farmers.

David Groenfeldt compares the experience of seven foreign projects with that of some well known projects in Sri Lanka. He notes the crucial role of the catalyst agent, variously called institutional organizer or community organizer, in procuring farmer participation, and the limited role assigned to Sri Lanka's farmer organisations, particularly in relation to management of finances and secondary system operation and maintenance when compared to the more successful projects in Philippines.

Two significant trends surfaced at the Workshop: one emphasizing cross-fertilization and the other signalling uniformization. The first trend results from a growing realization that some of the experiences in one type of irrigation system can enrich other types too. What threads the different types together is the long but living tradition of irrigation to which Sri Lankan farmers are accustomed. The core of that tradition is collective action based on the recognition of irrigation water as a common resource. This tradition survives in the village systems. The organizing principles behind that tradition are embedded in the smallness of the terminal group, homogeneity of interests, local leadership, and closer identification with the physical system, among others. The Workshop participants evinced a willingness to explore the possibility of incorporating the

valid principles of tradition into the complex management structures of the major systems. In the reverse direction, the village systems could benefit from key management aspects of the major systems such as a coordinated project management approach, the fielding of a catalyst (who could be a local person himself), and systematic training and extension.

Such cross-fertilization was furthered by the Workshop, because, it brought together policy-related and implementation officials from the three different types of irrigation systems and researchers, and it gave equal emphasis to each type.

The second trend noted was the somewhat uniformed shape the management structures seemed to be acquiring. The INMAS Project Committees, VIRP Tank Committees and to a lesser extent the Mahaweli Turn-Out & D Channel committees all seemed to be structurally similar and likely to be operationally rigid. Whilst admitting that standardization is required for good administration, it must also be recognized that local initiative project-specific solutions, and implementational flexibility need not be altogether sacrificed in the pursuit of uniformity. It would be a loss if the innovative and experimental spirit in which participatory management was approached in the past, is also abandoned.

WORKSHOP RECOMMENDATIONS

*Compiled by
Senarath B. Bulankulame*

Law and Policy

Participatory Management in Sri Lanka's irrigation schemes has been accepted as policy but law does not always correspond with it. The principal statutes dealing with irrigation were originally devised at a time when the concept of participatory management, as it is now understood, was little in evidence. It is natural that law usually lags behind programmes.

Therefore to bring the law in line with the present policy as well as to strengthen current implementation it is recommended that farmer organisations be given legal recognition to sustain them as a forum of discussion and decision making. Economic transactions (i.e. contracts for construction and rehabilitation work) can be undertaken only by a legally recognized organisation. Given a corporate personality, it will help guarantee the organisation's continuity and stability, as well as cordon it from unhealthy influences.

The law needs to spell out the joint responsibility of farmers and officers, in order to prevent the bureaucracy from hindering farmer participation.

The laws must reckon with groups and not with individuals. The innovations in irrigation design as well as the present management structure can be made effective only if the group of farmers at the turnout, D channel, and whole system levels are treated as corporate bodies, and irrigation water is treated as a common good.

The two principal statutes, the Irrigation Ordinance and Agrarian Services Act, are the exclusive responsibility of two separate Ministries, two distinct departments; they cover two distinct systems (major and minor), and have

originated at two different historical periods; as such there is bound to be certain mutually contradictory provisions. Such conflicts that affect the promotion and growth of farmer participatory management, need to be identified and corrected.

Law and policy should be made flexible so as to adapt to the differences between old and new schemes and large and smaller systems, and to recognize the variations within and between individual projects.

Strategies for Farmer Organisation

The major emphasis in this group of recommendations was the introduction of a catalyst to promote Farmer Organisations. The success of Gal Oya and similar experiments all point to the need for the proper preparation, motivation, and education of farmers to receive and to operate innovative management systems. This preliminary stage as well as the subsequent stage of institution building are best approached through the stationing of catalyst agents.

In medium and large scale systems it was felt that a start be made at the tertiary level in a more informal manner, and at the distributory level and above in a more formal manner. At each level there should be joint participation by officers and farmers in the appropriate management committees.

The Catalyst

It was recommended that the agency managing the schemes should employ its own catalysts, but if it cannot, an independent agency should take the responsibility, but only in the initial stages. Three types of catalysts were identified: 1) Catalyst proper; 2) Catalyst-cum-research worker; and 3) Catalyst-cum-officer.

However, the agency should not allow the catalyst to take leadership away from the farmers, but take care that he will only facilitate farmer Participation and growth of local leadership. The source of catalyst could be: 1) farmer leaders; 2) local level officials; and 3) newly recruited persons. The feasibility of utilizing these sources should be examined, and such persons should be trained in their catalyst role.

Optimum farmer participation is realized not only through the use of catalysts, but also through the establishment of management structures in which farmers at various levels can fruitfully participate.

The best prospects for increasing farmer participation in management lie in the small systems. However, state intervention through the recent programmes of rehabilitation and modernization, have had the adverse effect of eroding this age-old community participation base. Such intervention programmes should be judiciously designed to increase and not to retard community involvement in, and farmer management of, small-scale systems.

Research and Knowledge-Building

It was noted that studies focussing on participatory management are few in number, and even less so properly executed research. The need for systematic research and studies was highlighted.

The following areas were identified as needing policy-oriented as well as substantive research.

1. The overall policy environment relating to participatory management in irrigation schemes. This involves an examination of policies on pricing, rural renewal, settlements, irrigation development, local self-government, agriculture policies, agrarian structures and so on.
2. A comparative study of the different strategies and management systems that have evolved over the years, in relation to different irrigation systems, and in terms of performance in costs, impact, methodology, etc. The yardsticks used to evaluate project performance should be standardized.

A formal, institutional mechanism should be established to foster closer linkages between researchers, policy planners, trainers, and practitioners and to disseminate research findings. There is need for a clearing house for research work by institutions and individuals.

A well laid out research plan should be built into future action programmes designed for improving participatory management. In addition, budgetary and other provisions should be made to ensure the continuance of the research programmes for an adequate period after the project's completion.

Training and Extension

It was noted that some training programmes have been executed on an adhoc basis by different agencies. Existing training institutions such as the Agriculture and Irrigation Departments have focussed largely on the technical aspects, whilst those in the Agrarian Services and Mahaweli Authority and

Project for Advancing Settlement Expertise have dealt with certain management aspects. Participatory management is something new for most of these Departments and Agencies. Therefore, systematic training in participatory management as well as the larger process of irrigation management, need to be treated as an important aspect supportive of management systems.

The following *specific* recommendations are made:

1. Training should include not only farmer5 and project-level officials, but also district and headquarters staff too. The latter are important links because in their supervisory capacities the ■ can further the cause of irrigation management training, if fully oriented to it.
2. Attendance at training programmes, is often less than desirable, because officers are not motivated towards training. To overcome this deficiency, it is suggested that certain incentives be given to them. These incentives can take one or several of the following forms: (a) monetary inducements, (b) opportunity for foreign scholarships and study tours, (c) conducive service conditions, and (d) training recognized for career advancement.
3. Past training programmes have tended to be overly generalized. There is need to tailor training to specific project needs, such as identified officer and farmer needs, and targetted programme activities. In short the gap between training and doing should be closed.

Management agencies should develop their own training capacities for which purpose a training wing in each agency has to be established. Advanced training for training of trainers etc. could be obtained from a specialized agency (eg. ARTI, SLIDA, PASE, IMMI, or foreign institutes).

The need for an institutional device, such as an "Irrigation Extension Service," modelled on the Agriculture Department's T&V system, was highlighted. This "service" could best undertake the tasks of:

1. Bringing together researchers and practitioners at a professional level for actual exchange of research findings and field requirements and two way feed back.
2. Converting research recommendations into a package of practices, simplifying research data into field-officer and farmer-oriented information.
3. Training field staff, and assisting in the preparation of training materials and training manuals.
4. Steps should be taken to systematically collate information on programmes, costs, facilities, curricula, etc. in training and to monitor and assess their impact.

GOVERNMENT POLICY ON PARTICIPATORY IRRIGATION MANAGEMENT

by
Nanda Abeywickrema

Indigenous Irrigation Institutions

Perhaps the most enduring of institutions coming down from ancient Sri Lanka are those related to the use of irrigation water. Obviously, these have evolved on account of the heavy dependence on water for rice cultivation and the need to carefully manage a scarce resource on a communal basis. A range of disciplines and practices related to water utilization that developed over the years, have been established as customary laws (*sirith*). These relate to maintenance of irrigation works and the control and use of water to ensure an equitable sharing in times of water stress (*bethmaz*). These customs were observed generally by the beneficiaries while the council of village elders (*Gam Sabawa*) adjudicated over breaches. The British rulers revived and gave official recognition to these customs through Ordinance No. 9 of 1956 (Irrigation Ordinance).

The Irrigation Ordinance requires the proprietors at a meeting (referred to as a Cultivation Meeting or Kanna meeting) to determine the cultivation calendar and details of the seasonal operations at the beginning of each season. This institution has proved to be an effective method of enforcing the cultivation calendar and practices and of maintaining a dialogue between the bureaucracy and the farmers. It has worked well with village irrigation works and is still complied with today (Gunasekera 1981).

There were many features in the village irrigation schemes that nurtured and sustained the principle of participatory management at varying levels. Among them:

1. Heavy dependence of the community on the irrigation system for agriculture as well as domestic needs, inducing community participation in planning and restoration.
2. Relatively homogeneous nature of the village community
3. Ability to control and manage the system due to its small size and the farmers' intimate knowledge of the entire system.
4. The Kanna meeting, which provided for farmer participation in the planning of the cultivation season and the enforcement of these decisions.
5. Bethma, to assure equity in times of water stress.
6. The village social organisation and later the "Vel Vidane" system which ensured proper administration and equitable distribution of water.
7. Proper maintenance ensured by contribution of labour or payments in kind.

The problem then is to combine the traditional irrigation institutions with the modern technology of irrigation management.

Minor Versus Major Systems

Although the current distinction between minor and major works is on the basis of acreage benefitted, viz. 200 Acres, the earlier division was based more on management criteria.

All irrigation works were divided into major and minor works by Ordinance No. 32 of 1946. Minor works were those constructed by proprietors without government aid or with the aid of masonry works and sluices supplied free of charge by the government, which were maintained by the proprietors. The maintenance of all major irrigation works then became the total responsibility of the government (the Irrigation Department), and proprietors became liable to pay rates. While the cultivators in these major schemes still had to undertake a measure of maintenance work in regard to their own distributory and field channels, they were at the mercy of state officials for the proper maintenance not only of the headworks but also of structures (gates, sluices, etc.) and main

channels. In this regard they had little control or say. Indeed the proprietors were even unaware of maintenance programmes formulated by the Irrigation Department (ID). Seasonal paddy cultivation had to be done regardless if the maintenance work had been undertaken or had been carried out satisfactorily by the ID. This unsatisfactory position did not change with the definition of a major work by Ordinance No. 1 of 1951 as "an irrigation work constructed and maintained by or under the authority of the Director of Irrigation with monies provided by Parliament." Inadequacy of funds and their misuse resulted in poor maintenance. While such is the position regarding major works, the maintenance of all other schemes (minor works) remained the total responsibility of the proprietors themselves. The Agrarian Services Act defined an irrigation work commanding less than 200 acres as a minor scheme.

For purposes of management, there are many other criteria that could be applied to irrigation works which currently range from small village tanks to massive systems, operating in regional context. (See Table 1 for a possible classification of irrigation systems.)

Presently, major irrigation systems are governed by the Irrigation Ordinance. Their design and construction, operation and maintenance are undertaken by the ID, and the management of selected projects entrusted to the Irrigation Management Division. Both these organisations are within the Ministry of Lands and Land Development. Minor irrigation systems are administered under the Agrarian Services Act, through the Agrarian Services Department. A few abandoned minor tanks are renovated by and managed under the guidance of the Freedom From Hunger Campaign Board. These latter two organisations are under the Ministry of Agricultural Development and Research. The massive, multi-purpose Mahaweli Project is under the Mahaweli Authority, created by a separate statute, and that Authority functions under a separate Ministry of Mahaweli Development. This separation of responsibilities, has an important bearing on the policies for managing the various categories of irrigation systems.

Public investment in irrigation and its influence on government policy. By far the heaviest investment of public funds in Sri Lanka during the past 50 years has been in irrigation and land development. This trend is likely to continue for a few more decades with the Mahaweli Development Project and other irrigation projects outside Mahaweli. Investment in irrigation started with about Rs. 3 million annually in 1940 and increased to an average of Rs. 50 million by 1950. This trend continued with slight fluctuation until the latter part of 1960s when a major increase occurred with the commencement of the Mahaweli project. Table 2 shows the trends in investments in irrigation.

TABLE I: Classification of Irrigation Works

Type	Size	Features
<i>Minor</i>	Village irrigation works up to 200 Acres.	<ul style="list-style-type: none"> · irrigated by a single canal and · served from field with no FCC. · managed by DAS and maintained by farmers. · predominantly praveni or private land. · designed for I season--Maha--cultivation. · crop invariably rice-for subsistence.
<i>Medium</i>	200-500/1000	<ul style="list-style-type: none"> · has a distribution system with J.C.C. · managed and maintained by ID. · a mix of private and LDO Land. · designed for a Maha end part Yala cultivation crop, mainly rice.
<i>Major</i>	500/1000 Acres.to about 25.000 Acres	<ul style="list-style-type: none"> · a complete distribution system with Branch Distributory and Field Channels. · predominantly LDO plus a limited extent of pri-vate land. · fairly uniform holdings designed for a Maha and a substantial Yala. · Rice plus other non-farm activities important
<i>Major</i>	(River basin schemes)	<ul style="list-style-type: none"> · similar to above but most management decisions and allocations decided from a central point.

TABLE 2: Investment in Irrigation 1950 - 1982 (in million rupees)

Year	Village works	Major works	River Basin Development	Total
1950-1954	16.4	171.9	84.7	273.0
1955-1959	11.0	133.8	35.3	180.1
1960-1964	6.4	153.6	15.3	175.3
1965-1969	23.3	245.3	20.4	289.0
1970-1974	70.4	175.0	280.7	526.1
1975-1979	190.6	361.0	1654.2	2212.8
1980-1982	285.4	1200.3	7100.0	8585.7
Total	609.5	2441.9	9190.6	12242.0

Sources: Administration Reports of the Director of Irrigation and Progress Reports of the Ministry of Irrigation Power and Highways.

In the 1960s irrigation and land development received about 12% of the total capital investment and 36% of the budget allocated to the agriculture sector. This trend continued in the 1970s. In the latter part of the 1970s and early 1980s irrigation absorbed 24% of the resources allocated. During the period 1983-87 the share of irrigation in the total resources allocated to the agriculture sector is expected to rise to 66% (Public Investment 1983-87, Ministry of Finance and Planning, Sri Lanka).

Table 3 indicates the extent under irrigation during the last three decades. Although accurate information about the extent irrigated each year in the different sub-sectors is not readily available, there is a clear indication that the investment has been fairly well distributed between major and minor works and between new works and rehabilitation combining economic development objectives with social objectives (Abeywickrema 1983).

Some of the "Existing lands" provided with irrigation under the Mahaweli project were either rainfed or under minor schemes previously. These extents are now shown as "existing land" under major schemes. The total increase under major works is therefore more than the extent shown in column 2 above. There will be a proportionate reduction in the total acreage under minor schemes.

It is clear that the management system that evolved during the post-independence era has been influenced in large measure by these investment decisions and three important aspects of Government Policy:

1. The State is the owner of most of the land rendered irrigable and Government policy been tried to retain at least a remote control over the land via the Land Development Ordinance:

2. Most of this land has been distributed in fairly uniform holdings to small farmers, primarily for rice cultivation;
3. Heavy investment in initial development and subsequently in operation and maintenance has made it necessary for government to intervene regularly in irrigation and land policy.

TABLE 3: Extents Provided with Irrigation Facilities
(Includes lands irrigated under Gal Oya, Walawe and *Mahaweli*)

Year	Major & Medium works		Minor works		Total	
	New Extents	Existing Lands	New Extents	Existing Lands	New Extents	Existing Lands
1954-64	96,000		77,000		173,000	
1965-68	71,000	15,049	8,611	18,096	79,692	33,145
1970-74	62,763	15,356	12,571	48,095	75,334	63,451
1975-79	37,809	142,920'	31,690	174,603	69,499	317,523'
1980-82	32,684	12,988	26,902	57,394	59,586	70,382
Total Increase	300,337	186,313	163,774	298,188	457,111	484,501

Participatory Management

Over a period of five to six decades, one could observe that, while the best features of the customary law and rules relating to participation were retained in the planning, restoration, maintenance, and management of minor irrigation works, there were major departures in policy, consciously or otherwise, when it came to the planning and management of major irrigation works. Here it may be possible to classify some of the medium works; with the former, as they did retain the traditional character, depending on the extent to which the local community was associated with the system. There were many factors which led to this departure. First, the village systems were planned and developed for the local community, invariably in consultation with them at village level and at the level of the District Agricultural Committee (DAC); second, the larger systems, particularly those related to settlements, were planned from the centre for a set of people who due to logistical reasons could not participate in the planning or development. Therefore, participatory principles of management could not develop at the outset.

The structure of the system itself, viz. the size of the scheme, the procedure for the selection of beneficiary settlers and their background, the physical

planning and the settlement patterns, and the objectives of government, combined to make any kind of participatory management in the major projects extremely difficult.

While the farmers were not associated with the planning and were unacquainted with the operation of the system, their participation in maintenance and management was minimal. Many factors contributed to this situation.

Physical factors included: 1) the design of the system, allowing individual outlets on a massive and complex distribution system; 2) the large number of small farmers involved; and 3) the remoteness of the main system and the reservoir from the beneficiaries.

Institutional factors included: 1) social welfare policy of government which accepted responsibility for operation and maintenance; 2) the heterogeneous nature of the farmers, which made community participation extremely difficult; 3) the inadequacy of the *kanna* meeting mechanism to meet the needs of a large system; and 4) the insensitivity of the settlement-irrigation bureaucracy to the need for participatory management.

Many other factors led to this situation and eventually influenced government policy.

Although government invested large sums of money in major irrigation, land policy was directed towards the social welfare objective and the major schemes ended up with a large number of small, even subsistence level, farmers.

The economic return on this heavy investment was low. The quality of agriculture itself was not a great improvement on the traditional rice-based peasant farming. The economic objectives of reaching self-sufficiency in rice production through the irrigation schemes induced the government to follow policies that sustained the physical and social system without a major dislocation.

Since the economic return was low, the State was compelled to provide direct and indirect assistance, a major component of which was meeting the cost of operation and maintenance. This policy got so extended that when farmers failed to contribute their share in maintenance, the State stepped in to undertake a restoration or major rehabilitation of the system. The State also committed substantial amounts of money each year to maintain these systems, especially to the larger schemes which were becoming much more expensive than the village systems. This policy of State intervention in maintenance and rehabilitation continues today.

In the area of operation and maintenance and water management, there are three technical reasons which make participatory management in major

schemes difficult and different from the village systems; 1) the maintenance of the headworks can be handled only by trained professionals; 2) management of the main system, at least down to D-Channels and in many cases down to the field channels/turnout, requires the services of many paid officers; and 3) management below the field channel level by farmers is possible only if the main system functions at optimum level. For these and other reasons, it is safe to assume that there was **no** evidence of a conscious and positive effort to promote participatory management even in the area of operation and maintenance. The only visible effort is the institution of the kanna meeting at which the proprietors (tenants included later) were given an opportunity to participate in decision-making. It must be emphasized that even the kanna meeting did not go beyond the operations of a cultivation season especially in the major schemes.

The upshot of the above situation was that the State from time to time considered it necessary, for economic as well as political reasons, to intervene with an injection of capital for maintenance and rehabilitation, even in village works, where conditions were more conducive to participatory management.

Institutional Efforts At Participatory Management

Successive governments have from time to time, established institutions to promote the management of these systems, although not confined to irrigation management. The Cultivation Committees formed under the Paddy Lands Act of 1958, and the recognition of the tenant farmer in the irrigation system, was an attempt to induce the participation of the farmers in the management of the total agricultural system. Similarly, Multipurpose Co-operative Societies (MPCS) were expected to play a major role in assisting in the agricultural activities. Although well conceived, the cultivation committees eventually failed to satisfy the aspirations of either the planners or of the farmers due to excessive politicization and an inability to identify the leadership. The Agricultural Productivity Committees that succeeded the cultivation committees with a nominated membership were a total failure, in so far as participatory management was concerned.

These developments bring us to the logical question: what in fact, is the government's long term policy perspective on participatory management ?

It was pointed out earlier, that all the ingredients of participatory management are found in village systems. If so, was it part of conscious government policy ? Did this policy extend to the medium and major systems ? Is it possible to extend the same principles and policies ?

Aspects to be examined in this regard are:

1. Whether participatory management is ;it all feasihle (a) in medium scale works and (b) in major irrigation systems.
2. Whether such participation would extend to (a) planning and designing, (h) water management/operation and maintenance, and (c) rehabilitation,

The Kimhulvana experience clearly brings out that with a sustained effort and an enlightened leadership, it is feasible to develop a participatory management programme in a medium scale irrigation system. Replicability of this development will he demonstrated over time. With regard to major irrigation systems it has not yet been demonstrated beyond doubt that a participatory management programme encompassing the entire system is feasible.

Regarding areas and activities to which such participation could extend to, the following are fairly clear.

Planning and design. In the planning and designing of large irrigation schemes, particularly as they involve land settlement, participation of the farmers at the initial stage is extremely difficult. Given the composition of the farmers who would become beneficiaries under these schemes, it would be naive to expect such persons to have the perception and ability to comprehend the design and operational features of a large irrigation system. It 'is doubtful whether the operation of the system at the field level/turn out level is fully appreciated by the farmers individually at the outset of a major scheme. It is well known that all headworks, the main system as well as the downstream development of all major systems, were planted by trained professionals.

Unless there are major changes in Government policy on such areas as the size of irrigation scheme, size of holding, the selection criteria of settlers, and the responsibilities for their financing and management, it is unlikely in the foreseeable future that any active participation of farmers, in the planning and designing of major irrigation works, could be expected.

With regard to medium scale works, some degree of participation at the planning and design stage can be promoted where the beneficiaries are drawn from the local community; at least in isolated instances this process dues take place. Government policy itself encourages this process through the system of selection of irrigation works for restoration and rehabilitation via the District Agricultural Committee. To what extent the local community actively participates in the planning is an open question. It is due more to the lack of established procedures and interest on the part of the professionals, rather than the lack of a government policy that this process of participation falls by the wayside.

Water management. In the area of water management, as stated earlier, the medium scale works lend fairly easily to participatory management. The kanna meeting institution itself is effective, even if moderately, in involving the farmers in the process of water management decisions. In the major irrigation systems, on the other hand, it is not easy to achieve the same degree of participation from a large number of farmers, spread over a very large system.

In the first place the technical problems of ensuring equity in water distribution will continue to dominate most of the major systems. The inability of a large group of small farmers to identify themselves with a large system over which the community has no control, is a major institutional problem. However, several attempts have been made to obtain the participation of farmers at least at the tertiary and secondary levels of the distribution systems. These are evident in the experiments carried out at Minipe, Galoya, and under the INMAS programme. While a fair measure of success has been achieved in the seasonal operations and the inter-seasonal maintenance, the sustainability of these experiments and the feasibility of extending them to cover the entire system has to be watched over a long time frame. While it is sufficiently clear that farmer participation in management at the field channel/turn out level is feasible and analogous to conditions operating in a village system, the feasibility of moving this responsibility up to the D-channel level is one which merits consideration and experimentation. With the available knowledge, it would appear that D-channel level would be a suitable scale for active farmer participation in irrigation management.

Rehabilitation. Since rehabilitation of a large number of irrigation systems restored during the past 50 years is a major Government programme at the present moment, the feasibility of promoting farmer participation in this activity would be an appropriate area for study. Recent experience shows that in some major systems farmers have not been associated at all in the rehabilitation process. (e.g. TIMP, MIRP), while in Gal Oyaa conscious effort was made to involve the farmers in the rehabilitation process. It would appear that in large settlement irrigation schemes, where farmers have been associated with irrigated agriculture for several decades, the rehabilitation stage would be an ideal opportunity to involve the farmers actively in the planning and redesigning of the systems and in all matters relating to irrigation management. The development of institutions to enable representative participation should be a high priority in this area.

Cost recovery and farmer participation. One other area closely related to government policy is the recovery of operation and maintenance costs from farmers. This is a highly sensitive area politically, and fraught with serious implementational problems.

The policy adopted by government to recover a minimum of 50% of the operation and maintenance costs and increase it progressively to cover full costs is a bold and progressive move. It is important at this stage to examine the best policy to promote active farmer participation in operation and maintenance on a continuing basis.

Experience at Gritale has clearly shown that farmers appreciate good operation and maintenance and are willing to participate both financially and manually. Apart from promoting farmer participation in operation and maintenance and in the decision-making process, this has the salutary effect of farmers gaining a deeper understanding of how their irrigation system operates. These steps, therefore help to prepare the farmers, especially the second generation, to accept greater responsibility for the management of the total system.

Government Policy in Participation and Management.

Having examined the feasibility of participatory management in the different systems and at different stages the question that has to be examined is whether there is a conscious policy on the part of Government towards participatory management. Since large irrigation schemes, linked to land settlement and based on heavy social welfare objectives, dominated the irrigation development scene for decades, and since this basic policy remains, it is doubtful whether the Government can have a rigid, long-ranging policy on promoting participatory management at the different stages.

Government's main interest is to construct irrigation schemes, to settle farmers, and to maintain them in such a way that the economic and equity considerations are met. Government policy also is still heavily weighted towards farmer dependence on Government to manage the systems. There are some reasons for this. First, for technical reasons, the safety of the entire system has to be a concern of the Government. Second, for reasons of equity, the distribution system has to be operated and maintained by an agency of government. The main interest of the Government in this operation will be to reduce or contain the cost of maintenance and to minimize grievances of the farmers.

Experience has shown that, in the context of a large number of small farmers, Government agencies have fared poorly in achieving either of the above objectives. Governments therefore realize that involving farmers in irrigation management would be the best available alternative. How this is to be achieved has not been made clear to policy makers.

In the absence of well developed institutions at the field level and failure of previous institutions sponsored by Government (Cultivation Committee, APCC etc.), the field has remained open and lacking in direction of an explicit policy.

Both planners and policy makers have shown concern about setting up stereotyped institutions, for fear of these institutions developing into centers of power and excessive politicization.

In a sense, this situation offers an opportunity to professionals, particularly to the social scientists, to experiment with different forms of participation in irrigation management and in rehabilitation. Any Government would be interested in participatory management if it could be demonstrated that such measures would help reduce government commitments for maintenance and rehabilitation, and more importantly if it would reduce grievances within the farming community, leave alone the government's desire to see a prosperous community.

IRRIGATION LEGISLATION AND PARTICIPATORY MANAGEMENT

by
J. Alwis¹

Historical Perspective

The *Colonial Era*. When the colonial government recognized its responsibility for irrigation development in the country, its approach evinced a sense of moderate cautiousness with a mix of paternalism, humanitarianism, and self-interest. Colonial authorities were already aware of the adverse impact created by the Colebrooke-Cameron reforms of 1832 by which the ancient institutions of compulsory labour (*rajakariya*) and hereditary tadmanship were abolished. Irrigation was one of the principal sectors affected by the reforms. The implementation of irrigation programmes therefore had to be undertaken with great care. The strategy was initially to resuscitate the ancient customs, traditions, and practices in the paddy sector. For this purpose the Paddy Lands Irrigation Ordinance No. 9 of 1856 was enacted for a limited period of 5 years. The justification for the proposed course of action is clearly stated in the preamble to the Ordinance as follows:

The non-observance of many ancient and highly beneficial customs connected with the irrigation and cultivation of paddy lands as well as the difficulties, delays, and expenses attending the settlement of differ-

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ences and disputes among the cultivators relating to water rights, in the ordinary course of law, are found to be productive of great injury to the general body of proprietors of such lands and it is expedient to provide a remedy for these evils.

Restricting the validity of the Ordinance to 5 years presupposed that the careful monitoring of the implementation process would necessitate revisions and modifications. This illustrates an early perception by the colonial authorities of what is today called "a learning process."

Ordinance of 1856 entrusted the Government's responsibility for irrigation development to the Government Agent (GA) who was the administrative head of the Province. The GA was expected to perform his functions with the advice of the proprietors of the irrigated lands. In that role, the GA was deemed to function as a benevolent judge, implementor, and facilitator,

The same ordinance provides for the revival of the Village Council for conflict resolution in the course of implementing the law. The GA was required to preside in both meetings, the proprietors' meeting to obtain advice, and the Village Council meeting to resolve conflicts.

The implementation of irrigation programmes was constrained by the lack of funds from the central government. Government had no desire to increase its financial burden by recruiting village level functionaries. Therefore it was clear that reciprocal contributions by the beneficiaries should be the guiding principle to mobilize local resources in support of the programme.

The 1856 Ordinance was revised by the Ordinance No. 21 of 1867. In addition to the Village Council it provided for the selection of one or more headman by the proprietors to ensure the maintenance of rights and the prevention of any act militating against ancient customs and causing damage. However, the headman selected by the proprietors was made accountable to the GA. The same Ordinance demonstrated a remarkable degree of flexibility and understanding by allowing the proprietors to decide whether the operation and enforcement of the provisions in the Ordinance should be carried out with the aid of the Headman, the Village Council, or both.

After the enactment of the first Ordinance in 1856 there were a score of amendments and revisions over the next 125 years. Since the Irrigation Ordinance was expected to spell out the basis of organisation for irrigated agriculture, it throws some light on policies and perceptions that existed during the respective periods.

During the first two quarters of implementing the Irrigation Ordinance, a desire to monitor the implementation of its legal provisions was quite evident.

Regional differences in irrigation practices were also recognized. The basic institutional framework enunciated that proprietors in an irrigation area should be allowed to decide for themselves the most desirable course of action, subject to certain limits of approval which do not seem to have impeded participation by farmers. An important feature in the monitoring process was that the colonial authorities relied on empirical evidence to support changes.

With the establishment of the Irrigation Department (ID) in 1900, some of the functions handled locally by the GA were transferred to the Director of Irrigation. Leonard Wolf, who held the post of AGA in Hambantota at the time, recorded his resentment in a diary (Wolf 1959). In his opinion framing cultivation rules was better done by the GA as an administrative function. However, after some time the status quo was restored.

Changes in policy perspective relating to irrigation development began to emerge in 1930s with an emphasis on the restoration of major irrigation works that lay abandoned in the dry zone parts of the country. With the eradication of malaria, prospects for the colonization of the dry zone and its irrigation development appeared to be brighter. By this time the ID had also collected adequate data on rainfall, streamflow observations, flood records, etc., and developed an expertise to handle major construction work. So the stage was set for a major transformation in irrigation development.

In the meantime local demand and pressure to improve existing irrigation works, largely village works, continued. Provincial administrators were confident about the programmes under implementation. In the ID however, officials were reluctant to assign technical officers to what they called the excessive involvement with village works. It was argued that from a food production standpoint the village works were worthless as compared to the major irrigation schemes.

With the emergence of major construction as the principal area of work by the ID, the role of the GA in provincial development grew even more important. The Government looked to the GA to coordinate and manage the resettlement of people selected under irrigation schemes opened up in the dry zone. The Land Development Ordinance under which land redistribution programme was set in motion, conferred a special place for the GA to implement the colonization programmes. This was in addition to the functional roles already assigned to the GA under the Irrigation Ordinance.

The setting up of the District Agricultural Committee in the mid-thirties facilitated the GA's work as the principal coordinator of the irrigation programme in the province. This Committee, consisting only of officials, was incorporated into the Irrigation Ordinance No. 52 of 1946 to provide a legal backing to the decisions of the Committee.

A significant outcome of this change in perspectives in irrigation development was the enhancement of the decision-making power of the bureaucracy by a gradual process of imposing limits on participation by the farmer community. It is not clear however whether the new direction was the result of problems arising out of new dimensions in organisational management applicable to major systems. The protected tenurial system prescribed in the Land Development Ordinance, under which the newly reclaimed lands in the colonization schemes were distributed, required continuous supervision by officials. This may have had an impact on the irrigation management aspects too.

In the 1930s the emphasis was on resettling as many settlers as possible to achieve targets set by the policy makers. System design, especially in the tertiary levels, and the institutional framework for farmer participation, both of which evolved in the village works, were superimposed on the major system. The cultivation meeting is one such element, found to be ineffective in major irrigation systems with large number of farmers. However Irrigation Ordinance No. 45 of 1917, section 18, provides for the proprietors to "appoint a committee of such members as they may determine to frame rules on their behalf, subject to confirmation at a subsequent meeting." The extent to which such a Committee was effective is not clear. It has been allowed to remain in the Irrigation Ordinance for about 50 years.

Post-Independence Era. In the period following the granting of Independence in 1948, four key issues, farmer participation, irrigation headman, conflict resolution, and maintenance, were dealt with by introducing amendments to the Irrigation Ordinance.

Unlike in the earlier era, a noticeable tendency emerged to introduce conceptual changes in conformity with the official perceptions. Such changes were drawn more from abstract notions of a centralized system of administration than from an empirical process of monitoring and evaluations. During more recent years, constitutional guarantees figure more prominently and seem to restrict the application of legal provisions embodied in the Irrigation Ordinance.

Farmer Participation in Irrigation Management

The Irrigation Ordinance No. 9 of 1856 envisaged farmer participation at a public meeting of proprietors summoned by the **GA**. This was the embryonic form of the present cultivation (*kanna*) meeting. As the area under irrigation facilities expanded and the **GA** was unable to hold as many meetings as required,

Irrigation Ordinance No. 16 of 1906 provided for the setting up of a District Committee of not more than 12 nor less than 3 persons to advise the GA on drawing up rules regarding cultivation practices.

In addition to the above District Advisory Committee, powers were given to the whole body of proprietors under Section I of the Irrigation Ordinance No. 45 of 1917. The body of proprietors was to *meet* under the chairmanship of the **GA** to make rules on matters pertaining to the management aspects specific to each scheme which included the enforcement of ancient customs, irrigation headman, mobilizing farmer *contribution*, and system maintenance.

Furthermore, proprietors were empowered to meet under the GA and decide on the variations to irrigation rates, and to validate any irregularity, correct any informality, decide on matters referred to the proprietors by the Governor, and decide on hethma cultivation. A more significant feature in these provisions was that the proprietors were allowed to "appoint a committee of such number as they may determine, to frame rules on their behalf, subject to confirmation at a subsequent meeting."

With the enactment of the Paddy Lands Act of 1958, amendments to the Irrigation Ordinance became necessary. In introducing the amendments in Parliament, the Minister noted:

Government Agents under the Irrigation Ordinance were more or less independent authorities... . We find that there should be more control of the functions of Government Agents and closer coordination among them on the paddy cultivation side... . On the cultivation side the Commissioner of Agrarian Services is proposed to be brought in, and under his general direction and control the GA will work (Hansard 1968).

In fact, central control over the management of irrigation systems was progressively increasing with the Government taking more and more interest in major irrigation systems. The 1968 amendment to the Irrigation Ordinance justified such increased control because the Government transformed major irrigation systems to food production centers. The exercise enjoyed only a short lived success. In a way, the new advances in agricultural technology also resulted in some alienation of farmers from the decision-making process due to the short-sighted policies adopted in implementing the food production programme (Silva 1985).

A significant change in the composition of the cultivation meeting was effected by the Paddy Lands Act of 1958 which sought to introduce far-reaching tenancy reforms in the paddy sector. Tenuial arrangements of most lands in the government-initiated major irrigation systems are governed by the Land Development Ordinance. Therefore they are subject to a strict tenancy reform. But an

amendment to the Irrigation Ordinance was introduced in 1968 to bring it in line with the Paddy Lands Act. The Irrigation Headman was removed and the Committee appointed by the proprietors was abrogated and both were replaced by the Cultivation Committee, which was the grass-root organisation envisaged by the Paddy Lands Act.

The tenancy reforms and the success in food production, the latter achieved through the lateral spread of Green Revolution technology, opened up new horizons for institutional development in the agricultural sector. For want of dynamism in the irrigation sector to diversify its attention from design and construction work, this opportunity was not seized upon. Reforms initiated by the agricultural sector were allowed to fill the gap, irrespective of their relevance and applicability to the irrigation sector.

The experience gained during the last 5 years has shown that institutional reforms and structural changes promoted by one sector without reference to the other sector sometimes result in a negative and adverse impact at the field level. The lack of integration between the agriculture and irrigation sectors in policy formulation has been a major contributory factor to this situation. With the creation of new specialized agencies such as the Agrarian Services Department in 1958 and many others thereafter, the diagnosis of field level problems affecting farmers was marred by individual professional biases and divided loyalties. Even more important is the fact that farmer organisations came to be treated as a terminal facility available to the bureaucracy with which to operate their programmes. This is one of the main reasons which constrained the continuance of these organisations at the field level.

The past experiences, have made us doubt the relevance of the cultivation meeting as a suitable forum for farmers. Under the INMAS programme, the three-tier organisation ranging vertically from bottom-level field channel organisation to the Distributory Channel Organisation (Sub-Committee level) to the Project Committee reinforces the decision-making process of farmers. In the absence of any other forum for all farmers to meet at least once during a season, it is desirable to retain the cultivation meeting as a mechanism through which recommendations made by farmer representatives and officials at the Project Committee level could be adopted for implementation in the entire project. Similarly, the cultivation meeting can provide an opportunity to farmers to articulate their views more openly and even represent minority viewpoints.

In this respect, it becomes necessary to redefine the status of the Agrarian Services Committee (ASC) provided for under the Agrarian Services Act in relation to the three-tier organisation emerging in major irrigation systems.

ASCs are the successors to the Agricultural Productivity Committees which were set up earlier above the Cultivation Committee with certain new

functions. In the recent experimental programmes in farmer organisation in Minipe and Gal Oya, water users were promoted to erect a new institutional structure which is based on water as the key input. In effect the three-tier structure is an outcome of that effort. As a result, the role of the ASC is now confined to that of coordinating the supply of input services and related matters. Accordingly, the Cultivation Committee, as the representative body of farmers incorporated in the Irrigation Ordinance, has to be replaced by the three-tier project organisational framework.

Irrigation Headman

Irrigation Ordinance of 1867, for the first time, provide the selection of one or more headman to carry out matters agreed upon by the proprietors. The headman was selected by the farmers but worked under the control and direction of the GA.

The Paddy Lands Act of 1958 removed the Irrigation Headman and replaced him with the Cultivation Committee. The Cultivation Committee was a creation of the tenancy reforms. The extent to which the removal of the Irrigation Headman is relevant to the Act's principal objectives can be explained only in the context of the overall socio-political environment within which the new Government of 1956 was brought into power. The removal of the Headman from the Irrigation Ordinance was completed by the 1968 amendment.

After a period of 20 years, the Irrigation Headman (*Vel Vidane*) was expected to reappear through the Agrarian Services Act in the form of a representative elected by the farmers in a tract. But the functions assigned to him under the Agrarian Services Act do not necessarily justify the attempt to make a Vel Vidane out of the tract representative.

Recent experiences in Gal Oya and elsewhere have shown that farmers themselves are not clear about the functions expected of the tract representative, especially in the major irrigation systems. The new group of farmer representatives thrown up by a process of facilitation in Gal Oya was found to be more acceptable to farmers. But it is not possible to remove the existing representative formally appointed under the Agrarian Services Act. It is now accepted that where such conflicts occur, the approach should be more conciliatory and endeavours should be made to evolve interlocking arrangements so that community disputes would settle the differences in favour of the most feasible organisational arrangement.

In the three-tier organisational framework envisaged for major projects, the need to demarcate the area of authority in terms of hydrological boundaries,

especially for the field channel organisation and the D-channel organisation (**DCO**), is now accepted. The DCO will remain the formal organisation which will federate representatives from field-channel organisations. It is therefore necessary to ensure that the Vel Vidane should come from this organisation as a representative of farmers to carry out matters concerned with water allocation, distribution, and maintenance so that he would be able to function in his original role more effectively. It is also necessary to ensure that the appointment, remuneration, and dismissal of the Vel Vidane should be left entirely in the hands of farmers in the DCO with no accountability to any position in the bureaucracy. The Irrigation Ordinance should therefore be suitably amended to bring back the Vel Vidane in the above manner. As far as matters dealing with input coordination are concerned, the DCO may be requested to appoint another person as its representative to deal with such matters, leaving the Vel Vidane to deal only with matters concerning water.

Conflict Resolution

The system of Village Councils (**VCs**) reintroduced through the first Irrigation Ordinance was directed towards compromise and not punitive action. This conciliatory approach ideally suited the purpose of conflict resolution in irrigation matters. Dispensation of justice in a VC, which was presided over by the **GA**, was facilitated by the creation of the Irrigation Headman. Farmers were given the option to decide whether they should enlist the services of the VC, the Headman or both. This feature is important because it recognizes the urgency and diversity of issues and circumstances under which rapid interventions had to be provided to sustain the integrity of the physical system and the efficiency of the institutional mechanism.

The character of the VC was changed by the enactment of the Village Communities Ordinance No. **26** of 1871 which dealt with matters of a broad nature more relevant to local administration. It was largely a creation of the officials with little unofficial support. The powers of the VC to deal with the violation of irrigation rules was handed over to the newly created Village Tribunals and later to the Rural Courts. Understandably, this was an attempt to introduce a British perception of the principles of justice to village affairs.

Today, all laws are subject to two important constitutional guarantees which ensure the rule of law and the fundamental rights of the individual. Judicial reforms have also resulted in impeding enforcement measures. At the same time it would be difficult at this juncture to bring back an arrangement by which representatives of farmers could be enabled to sit on judgement of matters which were originally included under the **VCs**. However the more feasible method appears to be to promote farmer organisations to bring social pressure

on errant farmers as an extension of an conciliatory approach. As a last resort, action could be taken to fall back on legal procedures.

It is desirable to formulate legal procedures with regard to the need for rapid interventions and summary justice by officers who tend to take a more practical view of the problems encountered in the management of irrigation systems. This would mean that a court specially designated as a Water Court be set up to hold its sessions in the locality of irrigation systems on a regular visiting system. Court proceedings could be conducted without lawyers with the provision of appeal to a higher court.

Persons who preside over Water Courts will have to be senior officials in the Districts or *someone* selected from *among* the senior citizens who displays a proven capability to deal with these conflicts in an objective manner. It should be possible for these officers to be trained and appointed by the Judicial Service Commission,

Experience in Kimbulwana Oya in Kurunegala District indicates that social pressure can be effectively mobilized in bringing about a compromise. It is therefore necessary to ensure that conflict resolution be made an important function assigned to farmer organisations so that official interventions to initiate legal enforcement would be treated as a deterrent and as a last resort action.

Maintenance Work

Proper maintenance of irrigation schemes by farmers was one of the principal considerations which motivated the colonial Government to revive ancient customs relating to paddy cultivation. But it always remained a vexed question. At the beginning, any improvement or repair to an irrigation system was subject to a recovery of the Government cost in 10 equal installments from beneficiaries and the imposition of an irrigation rate in perpetuity. The willingness of farmers to pay the irrigation rate was therefore made an important consideration in the administration procedure evolved for the purpose. The Irrigation Ordinance of 1935 relates the irrigation rate to both construction and maintenance. The method of recovery was administered initially by preparing a scheme for the operation and maintenance of the irrigation system. This scheme provided for the imposition of an irrigation rate, and for deciding on responsibilities between the Government and beneficiaries for maintenance, labour contribution, variation of rates, and conditions applicable to irrigation rates. It also provided for an exemption from rates in instances where beneficiaries agreed to undertake maintenance work on their own.

Subsequent amendments to the Irrigation Ordinance show that the choice of the farmers to contribute by irrigate rates has been restricted by imposing the will of the bureaucracy. Apparently this resulted from a low collection rate because farmers were unable to honour the collective agreement with the Government. In fact the Director of Irrigation in the Administration Report for 1927 expresses his disappointment and reservations regarding the collection of irrigation rates.

More recently, irrigation rates or water taxes have been a politically sensitive area of irrigation policy. A major revision of this policy was adopted in 1984 to enable the farmers to contribute towards the cost of operation and maintenance in the major irrigation schemes.

An important feature of this new policy is to ensure that contributions made by farmers will not be credited to a central fund nor allowed to finance any work outside the scheme. In effect, the new scheme attaches more importance to promote and mobilize farmer participation for maintenance than to the actual recovery of money in economic terms. In order to take this new scheme to its logical conclusion, farmer organisations are requested to identify maintenance items and to set priorities to prepare a maintenance programme for implementation in each year under the supervision of the ID. In the final analysis, the result would be to make the bureaucracy accountable to the farmer organisations and to the Project Committee for collection and disbursement of the O&M charges.

The subject of cost recovery cannot be easily cast in legal terms to suit implementation. As such, present experiences on the new policy will have to be monitored carefully to determine the best course of action. It is therefore necessary to set up broad guidelines in law for implementation with the maximum amount of flexibility for future adjustments.

Conclusion

In a social democracy, constitutional rights and guarantees are overwhelmingly important in safeguarding the rights of the individual. But these principles that help sustain an agricultural democracy do not necessarily apply with equal force to an irrigation democracy where a collective right to share a common resource is the primary concern. In conflicts associated with the equitable distribution of a common resource such as water, rapid interventions and decisions are of prime importance to safeguard the integrity of the system and the mechanisms which ensure equitable distribution.

To achieve these ends, it is necessary that irrigation legislation develop the maximum level of flexibility to accommodate such rapid interventions and

decisions. Flexibility should be the hall-mark of irrigation legislation. These features have been recognized in many of the past Irrigation Ordinances. When attention was focussed increasingly on major irrigation systems which have different dimensions and magnitude to their problems, poor understanding of the complexities of such issues compelled the authorities to take recourse to a path of least resistance by centralizing most activities in the hands of a bureaucracy and adopting highly uniform and rigid systems.

It is *also* true that no matter what policies and programmes are adopted, irrigation systems will have to keep moving, often due to the farmers who change and modify plans and schedules to suit their needs and perceptions. Even when wrong policies are adopted, the negative impact of such measures come to light long after the short-term gains have been achieved. Implementors of irrigation improvement plans get misled by these successes and repeat the same mistakes. Irrigation systems are often besieged by such short term policies. Even when such programmes are monitored closely, the 'true nature of their essential components has to be understood against a broad scenario of policies and programmes which link the past with the present.

Irrigation legislation by itself cannot bring about farmer participation. It can only spell out the broad framework for such participation and, to a limited degree, safeguard and facilitate the viability of the organisations in sustaining farmer participation.

Time has come to provide amendments to the current Irrigation Ordinance. Amendments Act No. 23 of 1973 was adopted to rectify certain legal impediments concerning repairs to damaged irrigation structures and jurisdiction of courts to try irrigation offenses. With the enactment of the Agricultural Productivity Law in 1973, the need to revise the Irrigation Ordinance to suit the new institutional order was highlighted over and over again but no action was taken. On looking back, this inaction cannot be regretted, although it may have happened for different reasons. It is contended that valuable information culled from field experiences can provide the basic framework and the perspectives for a revision of the Irrigation Ordinance in the near future.

FARMER TRAINING PROGRAMMES IN SRI LANKA

by
Piyasena Ganewatte'

Introduction

This paper will attempt to give an overview of training programmes for farmers and farmer leaders during the decade since 1976. More significant events and happenings in farmer organisation and training took place during the 10 years from 1976, than during the whole period since independence. This period could justly be called the Decade of the Farmer.

In 1976, the first year of the decade, the first settlers began trickling in to the Mahaweli System. The Accelerated Mahaweli programme was launched in 1978. The Training and Visit System was first introduced as a pilot project in the Anuradhapura District and later extended to the whole island in 1979. World wide attention was also focussed on participatory management of irrigation systems. The Farmer Organisations Programme in the Gal Oya was started in 1980, utilizing the services of a catalyst type change agent called an Institutional Organizer (IO). By 1985 the major part of the project was completed with farmer organisations at every field, distributory, main channel and project levels, organized and managed by responsible self-reliant farmer representatives (FRs). The success of the Gal Oya experiment influenced government thinking and government policy on farmer organisations for water management. The creation of the Irrigation Management Division in the ID was one of the most

¹Consultant, USAID Project, National Water Supply & Drainage Board

significant land marks in the history of participatory irrigation water management. The decade also saw the birth of several other experiments such as the Small Farmer Development Programme, the Village Irrigation Rehabilitation Project (VIRP) the Wew Sabha system of the Freedom From Hunger Campaign Board, the Change Agent Programme (of the Ministry of Plan Implementation), and the Farmer Organisation Programmes in several major irrigation systems, particularly in the Polonnaruwa District.

For the purpose of analysis the paper is divided into four major areas:

1. The predominantly paddy and subsidiary food crop cultivation areas in the dry and wet zones prior to the T & V.
2. The operation of the T & V system with particular reference to Kurunegala District.
3. The farmer training and extension activities in the Accelerated Mahaweli Project Areas.
4. The Gal Oya Water Management project area, where an innovative programme of farmer training was practiced from 1980 to 1985.

Each of the four major areas will be reviewed in some detail in the paper, and an attempt will be made to pick out the salient features in these areas.

Agricultural Extension and Farmer Training Prior to the T&V System

An Overview. Since independence and up to the introduction of T & V system there were many changes in the administrative structure and infrastructure of the Department of Agriculture. The links between the researcher, extension worker, and the farmer were further strengthened. The increased focus on extension and training of farmers was a natural development. The creation of several other departments, corporations, and statutory bodies dealing with some aspect or another of agricultural development, not only attempted to fill in gaps and inadequacies but also forced the Department of Agriculture to concentrate and focus on agricultural extension. The growth and strengthening of the Department of Agrarian services as the agency responsible for agricultural inputs and credit, took away much pressure and authority from the Department of Agriculture. The creation of other Government Corporations particularly the Paddy Marketing Board, the Agricultural Development Authority, the Fertilizer Corporation, and special government agencies for major and minor export crops

had a similar effect on the Department of Agriculture. One could even say that the adoption of the T & V system was inevitable. Extension and research therefore, became the major focus of the Agricultural Department's activities.

The Impact of Training and Extension.

A study conducted by the Agrarian Research and Training Institute (ARTI) in the early 1970s in five Districts gives an indication of the agricultural extension methods practiced in a rural district in Sri Lanka (ARTI 1974). It should be noted that the extensiveness of the area and the problems of mobility due to difficulties in transport affected the extension programmes. Moreover the extension effort concentrated primarily on paddy cultivation.

A review of farmer training and extension programmes of the early 1970s highlights many problems and constraints:

1. An Agricultural Instructor covered about 300 to 4000 hectares and a KVS about 1000 hectares. In the Dry zone the area is quite extensive and poor public transport created problems of mobility.
2. In spite of high acceptance of the new high yielding varieties, difficulties in obtaining inputs such as seed paddy, fertilizer, and agro-chemicals, and low acceptance of proven methods such as transplanting rows, seeding, etc., resulted in comparatively poor yields.
3. The optimum use of credit facilities was not made, with failure of loan repayment as a major impediment.
4. Farmers showed a great dependency on agricultural extension staff. There was little evidence of farmers actively participating in extension work.
5. Farmers should have been actively involved in efficient water management, particularly in operations and maintenance of irrigation systems. Poor water management often nullified benefits from improved varieties.
6. The didactic or one way method of training and extension needed to be replaced by more innovative and dynamic methods.
7. Better coordination between the different government agencies and the farmer was needed.

The Training and Visit (T&V) System of Extension and Farmer Training

The introduction of the Training and Visit (T&V) system was in a way a logical development of the existing agricultural extension and farmer training programmes. The T&V system attempted to fill in the gaps and reinforce the existing agricultural infrastructure. The discussion in this part will be based mainly on the T&V system which was in operation in the Kurunegala District in 1981.

The main features of the T&V system. Benor, Harrison, and Baxter (1984) have outlined the main features of the system as follows:

1. It is a systematic programme of training for the Village Extension Worker (VEW) (in Sri Lanka called the Krushikarna Viyapathi Sevaka-KVS), combined with frequent visits to farmers.
2. The staffing requirements usually are:
 - a) One agricultural Extension Officer, (equal to Agricultural Instructor- AI) who guides and trains, six to eight VEWs.
 - b) Six to eight Agricultural Extension Officers guided and supervised by a Sub-Divisional Extension Officer (equal to Agricultural Officer) (AO).
 - c) Sub-Divisional Extension Officer is supported by a team of Subject Matter Specialists.
 - d) Four to eight Sub-Divisional Extension Officers (AOs) are supervised by a District Extension Officer (equal to an Asst. Director of Agriculture in Sri Lanka) also supported by Subject Matter specialists.
 - e) The ratio of VEW to farmers is 1:800. When the population is dispersed the suggested ratio is 1:500.
3. The area of a VEW is divided into eight groups of about equal size
 - a) The VEW selects one farmer in each group to be the Contact Farmer, who should be the link between VEW and farmers.

- h) The VEW visits each group for a full day, once a fortnight, on a pre-arranged schedule.
 - c) One day of the fortnight is earmarked for the training of VEWs by the AO, and Subject Matter Specialists.
4. The VEW, the AI, and the AO should live within the area of their jurisdiction.
 5. The VEW, the AI, and the AO are guided and supported at the district and national level by the appropriate supervising officials supported by Subject Matter Specialists.

The Operation of the T&V System in Kurunegala District

The Kurunegala Integrated Rural Development Project (KIRDP) was in operation by 1979 and the T&V system was implemented systematically in the district as a part of the project. At the request of the Ministry of Plan Implementation, (the agency responsible for Integrated Rural Development Projects) the ARTI undertook an evaluation of KIRDP (Gunawardana and Chandrasiri 1981). Subsequently in September 1982, ARTI commissioned another study on "The field level implementation of rural development projects," under the KIRDP (Canewatte et al. 1982). This study too looked at the operation of the T&V system. The following analysis and review of the T&V system is based largely on these two studies.

KVS's visit to farmers. Each KVS catered to 720 farm families in the Dry Zone part and to 850 farm families in the Wet Zone part, with an average of about 800 farm families per KVS in the District. Each KVS had 36 Contact Farmers. Each contact farmer, on average, had about 22 follower farmers. The size of a KVS range varied from 3.2 square miles in the Wet Zone part to about 9.8 square miles in the Semi-Dry zone part.

KVS and the Contact Farmer. The KVS and Contact Farmers had close links. A majority of Contact Farmers reported that the KVS visited them regularly and that they established friendly relationships. Fifty-two percent of the Contact Farmers reported meeting with the KVS in the farmer's home and 24% identified the field as the meeting place. When meetings were held in the home, group demonstrations were arranged in the nearest field.

Participation of nondesignated farmers at Contact Farmer meetings. The participation of nondesignated farmers in Contact Farmer meetings and links between the Contact Farmer and the designated follower farmers appeared to be the

weakest link in the chain. It is interesting to note that participation of non-designated farmers at meetings was as high as 80% in the Dry zone part. This may be due to the fact that the farmers there were wholly dependent on paddy farming and placed greater reliance on extension activities. At present only the Contact Farmer is identified and the study pointed out the need for considering the whole village as forming a cluster of Contact Farmers and follower farmers. This seems a logical step to take as the pattern of most dry zone settlements is of the cluster type.

Fortnightly training of KVSs. The study indicated that the fortnightly training sessions organized by the AIs and the Subject Matter specialists were held regularly and were well attended. However, 82% of KVSs reported that the contents and methods of training could be improved. The subject areas of training and the extension messages to be carried out centered on a variety of topics, ranging from paddy cultivation, land preparation, water management, nursery management, cultivation of subsidiary crops, home gardens, and cheria crops, pest and disease control.

It appears that the training of KVSs had some impact in upgrading their knowledge and skills. A careful assessment of the curricula and schemes of training has not been undertaken systematically. The KVS tended to follow a didactic relationship with farmers. It was also observed that emphasis in the training was on paddy farming and not so much on subsidiary food crops, home gardens, and chena crops.

Non T&V activities of extension staff. One aspect that came out clearly in the study was the pressure on the KVSs' time. He/She had to spend a fair amount of time on activities not directly connected to the T&V system, such as attendance at meetings of voluntary organisations, conferences of other Government departments, etc.

Mobility of extension staff. A major grouse voiced by KVSs and AIs was the difficulties they face due to the extensive areas they had to cover and the poor transport and communication facilities available to them. They also reported that public transport facilities were better in the Wet Zone areas of the district. The study also revealed that about a sixth of the AIs owned motor bicycles and another one third had only push bicycles. Nearly 50% had to depend on public transport. In the case of KVSs about 80% had push bicycles. Those who did not have push bicycles were usually women KVSs who would not ride bicycles.

Dialogue between research and extension personnel. The study reported an improvement in the dialogue between field extension personnel and the research staff. The Regional Technical Working Group meetings and conferences provided opportunities for closer interaction. The improvement in the mobility of AOs and Subject Matter Specialists helped the dialogue.

FARMER TRAINING IN THE MAHAWELI PROJECT AREA

The discussion of farmer training in the Mahaweli Project area is based primarily on the writer's personal experience gained in the Mahaweli H system and on the discussions with senior officials of the Mahaweli Project.

During a short time span from 1976 on, there was much exploration and experimentation on farmer organisations, farmer training, and community development. The settlement pattern, organisation, and infrastructure provided a good base for training and community development activities.

The Settler/Farmer Training Programmes of the Mahaweli is much more broadbased than the T&V system. Jayawardene (1983) in his preface to the Training Manual for Project Officers and Farmer leaders states that:

When I talk of settler training, I am not speaking in terms of merely training the farmers to cultivate various crops successfully and profitably. I am speaking in terms of training the settlers in a multiplicity of disciplines that include agriculture, irrigation, marketing and credit, and equally important, community development.

The farmer training and farmer organisation in Mahaweli H system was first started by the Mahaweli Development Board during the 1979 Yala Season. Earlier, there was pandemonium when the water issues were made and, due to lack of organisation, the tail-enders were badly affected and much water was wasted; as a result the Mahaweli authorities looked for ways of developing an efficient irrigation water distribution system. The turnout with its 12 to 20 farmers operating about 30 to 50 acres proved to be the logical starting point for farmer organisations.

Agricultural Extension and Farmer Training

At the outset, when training needs were identified, there emerged the need for training of farmers, farmer leaders, and officials in three main areas:

1. *Water Management* - including equitable distribution, operation and maintenance, and problem solving at the Turnout level.
2. *Agricultural Extension* - educating farmers and farmer leaders in land preparation, sowing of crops, use of fertilizer and agro-chemicals, on-farm water management, etc.

3. *Community Development* .Fostering community participation, local leadership, input delivery systems and undertaking community development work.

The Turnout Farmer Organisation

The field workers in the three disciplines (Water Management, Agricultural Extension and Community Development) agreed that education pertaining to agricultural production should be coordinated by the Water Management Unit. For the first time in Sri Lanka, the authorities recognized the need for organising farmers around water and its distribution and in this sense, it was a forerunner to the farmer organisation programme of the Gal Oya Water Management Project. It is significant that activities relating not only to water management but also to agricultural extension and community development were organized at the Turnout level.

The first farmer leaders training programme commenced in August 1979. Farmers were asked to select two leaders per Turnout group, one as farm manager to deal with water management and community development matters and the other as the Contact Farmer. A joint team drawn from several disciplines decided on the strategy and methods of training. The selection of the two farmers at the turnout level was left to the farmers. The training programme was closely monitored. By 1981, after 3 years of the programme, 56% of the Turnout Leaders and 75% of the officers were attending the training classes (Khan 1982). The biggest achievement of the training programmes was bringing about coordination and understanding between farmers and officials. Agricultural extension is done fairly well but needs further reinforcement. Community development has a long way to go. Some water management problems continue to trouble the farmers.

The initial enthusiasm and optimism for Turnout group farmer organisation was apparently not evident in later years (Winaladharna 1980). It was generally believed that with the passage of time, farmer needs and aspirations undergo change. The initial problems were in respect of land and water for cultivation; later on, religious, social, and cultural aspects demanded the attention of the settler farmers. They needed a forum with a broader base than a Turnout organisation to look after their affairs. It was then that the authorities came up with the idea of Settler Development Associations.

Settler Development Associations

The Settler Development Associations of the Mahaweli were largely influenced by similar societies of the FELDA scheme in Malaysia. The essential features of the Settler Development Association are:

- 1 A formalized organisation with a constitution drawn up by the Mahaweli authorities.
- 2 The chairman was the unit manager, and the treasurer was another ex-officio appointee.
- 3 The SDA encompassed a hamlet with about 200 to 250 families and was thus based on residence rather than on field operations.
- 4 The functions of SDA involved the whole gamut of community activities, agricultural production and marketing, social and religious affairs.

After about 4 years, the SDAs were allowed to die down. From 1985, the Turnout Groups have been revived and federated into a Distributary Channel Organisation in the Kalawewa area. For training purposes, the Turnout Group remains the active forum.

The Gal Oya Farmer Organisation Programme

The Gal Oya Project undertaken in 1948, was the first large reservoir irrigation system of the country prior to the Mahaweli Project. After about 30 years of operation, decay and deterioration had set in and the system operated at low efficiency. The Government, with assistance from USAID, commenced rehabilitation of the project in 1980. An important activity of the project was initiating a farmer organisation programme for water management.

The strategy adopted was to carefully train field catalyst agents, IOs. Their main task is to promote farmer organisations for efficient water management and in the process develop a self-confident and self-reliant farmer community. The IO also facilitated the formation of farmer groups in small hydrologically defined areas, usually a field channel of 10 to 15 farmers operating in an area of about 30 to 50 acres. The farmer group selects by consensus a FR who functions as the link between farmers, different levels of farmer organisations, and officials. It has been decided that the FR will in the future be selected as the *yaya palaka* (tract supervisor) required to be appointed under the Agrarian Services Act.

THE TRAINING OF FARMERS AND FARMER REPRESENTATIVES

An important role of the IO was that of an educator and trainer. It was recognized that training of farmers and FRs is a continuous and on-going process. Training can be broadly categorized into five types.

1. Informal on-the-job training of farmers and FRs in developing skills in basic communication techniques, group discussions, planning and organising farmer meetings,
2. **Formal** in-service training of FRs in subject areas such as role and functions of the FR, irrigation and water management, programming the cultivation of paddy and subsidiary food crops, etc.
3. Agricultural extension activities carried out under the T&V System; particularly land preparation, nurseries, transplanting, high yielding varieties, use of insecticides and weedicides, application of fertilizer, etc.
4. The monthly meeting of the Distributory Channel and the Main Channel/Area Farmer organisation.
5. The Main Channel or Area Councils in collaboration with the officials of Irrigation, Agriculture, and Agrarian Services Departments organized study tours to other agricultural settlements and 'research stations to examine the latter's water management and farmer organisation programmes.

Field Channel Farmer Representative and the T&V System

The T&V system is operating effectively in the Gal Oya Project area, side by side with the Farmer Organisation Programme. The Assistant Director of Agriculture, Ampara district has agreed to recognize field channel FRs as Contact Farmers under the T&V system. This proposal is still under consideration. The federation of farmer organisations at the field distributory main channel and project levels could be utilized as an effective mechanism for farmer training and extension.

A salient feature of the Gal Oya Farmer Organisation programme was the initiative and leadership taken by the FRs in agricultural extension and farmer training, under the guidance and direction of field personnel of the Departments of Irrigation, Agriculture, and Agrarian Services. A major contribution of the Farmer Organisation Programme was the close and cordial links established between these three Government agencies and the farmers.

CONCLUSIONS

This paper discussed programmes in agricultural extension and farmer training during the period prior to and after the T&V System, in the Mahaweli Project Area, and under the Gal Oya Water Management Project. There are some similarities and major differences which can be observed:

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- In the T&V System, the lowest unit viz. the Contact Farmer Group, included about 60 to 100 farmers; the Turnout Group in the Mahaweli H System was about 12 to 20 farmers and in Gal Oya, the Field Channel Farmer Group consisted of about 10 to 15 farmers.
 - The second level of organisation in the T&V System is the area of the (KVS) with about 500 to 800 farmers. In the Mahaweli, it was the SDAs at the hamlet level with about 100 farmers. In the Gal Oya the equivalent level is the Distributory Channel Farmer Organisation with about 15 to 100 farmers.
 - In the T&V System, the field level worker is the KVS; in the Mahaweli, it is the Unit Manager; in Gal Oya it was the IO who was a catalyst type of change agent.
 - The T&V System, and SDAs of the Mahaweli H System, operated within administrative boundaries; whereas in Gal Oya the Farmer Organisation Programme operated under hydrological boundaries.
 - It is evident that in the T&V System and in the SDAs, it is the officials who take the initiative. In the Gal Oya Farmer Organisation Programme it is the FRs who take the leadership, facilitated by the IO.
 - The federation of Farmer Organisations at different levels in Gal Oya greatly facilitate problem solving. In the Mahaweli there is no such federation of farmers, although there is a hierarchy of officials at the Unit, Block, and Project levels. The federation of Mahaweli Turnout leaders into a D-Channel organisation has begun only from Maha 1985.
 - Making the field channel FRs the ex-officio Contact Farmer would greatly facilitate agricultural extension and training. The existence of a farmer organisation mechanism at the different levels, also facilitates the same tasks.
 - The dependency of the farmer on officials was noted in the T&V and Mahaweli areas. This should be gradually reduced. A concerted effort should be made to develop the self-confidence and self-reliance of the farmer.

The extension and farmer training programmes in Sri Lanka have undergone many changes during the *Decade of the Farmer* (1976-1985). The T&V system, in spite of many problems and short-comings has proved to be effective. The three-way dialogue between the researcher, extension worker, and the farmer should be further strengthened. A federation of farmer organisations

would be a suitable mechanism for strengthening these links. The full benefits of improved irrigation, in-put supplies, agricultural credit, marketing, etc., would be possible through well planned programmes of extension and farmer training. So far water management has not been given enough emphasis in agricultural extension and farmer training, though water is becoming an important scarce resource. Therefore we should include irrigation water management in the extension and farmer training programmes. It is good to remember that, "Professional extension, tuned to farmer needs and country capacities is a most powerful tool to attain an early impact on productivity and farmer incomes and thereby improve the quality of life of millions of people on the land" (Benor et al. **1984**).

PARTICIPATORY MANAGEMENT IN IRRIGATION PROJECTS: THE UN ISHE EXPERIMENT IN SRI LANKA

by

Kapila P. Wimaladharm

PART I

The concern with improving the management of irrigation systems is of recent origin. Still more recent is the realization that beneficiary involvement in irrigation management is something desirable. The change in attitude in an earlier era was largely influenced by an egalitarian and populist ideology which demanded that decision-making authority be transferred from the bureaucracy to the farming community (e.g. the Cultivation Committee under the Paddy Lands Act of 1958). In more recent times, the overriding consideration has been, on the one hand, the escalating costs of operation and maintenance of irrigation works, whilst on the other, the progressive scaling down of the budgetary allocations for such works.

The challenge had to be faced by effecting major organisational changes and policy shifts. These changes stipulate that the cost burden which had hitherto been borne by government alone, be shared with the beneficiaries, and therefore irrigation management, previously an exclusive concern of officials, be also shared with the farmers. Even voluntary agencies were brought into the arena. Thus beneficiary participation in irrigation management, which once was an end in itself, has now become the means.

Today, participation has become the concern of the many. It is best to remember that "...participation can refer to many different things, not all of which are relevant or desirable in any specific project context. Overly enthusiastic and uncritical advocates of participation have impeded its extension as much as have its adversaries. Social research has arrived at a stage at which it is possible to be more precise about participation" (Uphoff 1985). Therefore, it becomes necessary to distinguish between types and degrees of participation as well as between different forms of participatory management.

The intent of this paper is to draw attention to a few recent approaches to participatory irrigation management in Sri Lanka, and whilst doing so to present the results of social research and related writings bearing on the subject.

One could view beneficiary participation as the combined effect of several factors:

1. Macro-policies of which the key instruments such as price policy or marketing policy either favour participation or not;
2. Technology which favours or discourages employment creation, income distribution, and is made available to the few or the many, due to costs and complexity;
3. institutions which are by the very nature popular or bureaucratic, pro-rich or pro-poor, urban-biased or rural biased.

However, in this paper, I propose to deal largely with the institutional factor, for that remains to be fully explored, due to the variability in the socio-cultural settings across countries and within the same country. Even here I am tempted to select one administrative district in Sri Lanka, wherein a number of noteworthy approaches to participatory irrigation management have recently been experimented with.

"Axioms" of Participation

Participation by the local community is today taken as a defining feature of community development. However, confusion remains as to whether all community members or only select target groups need to participate.

The sponsoring agency could be either indigenous or exogenous. In Sri Lanka, most projects have been sponsored by an outside agency; even those initiated by local officers would more correctly be called exogenous efforts. In

evaluating these projects, it is best to postulate the principles of community participation against which the empirical experience will be matched. Emrich (1979) has suggested the following "axioms" of participation:

1. Participation must begin at the *very lowest*, and must offer opportunities for the *poor* to be involved in decision making;
2. Participation must take place at all stages of the development process, from pre-planning, plan design and implementation to monitoring and evaluation;
3. Participation must be by groups and not by individual members;
4. Participatory process must deal with the allocation and control of goods and services;
5. Participation will cause conflicts in some form, and suitable machinery to resolve them must be found.

In this model the focus is on the weakest sections and require their empowerment. Hence the approach is confrontational rather than consensual.

Recent Experiments

The management of irrigation schemes, meaning the season to season operation of the system for water distribution and its on-farm use as well as the periodic maintenance of the physical apparatus, is a crucial area of water user participation. In Sri Lanka, during the last decade and a half, several different experiments were launched in which the central focus was on the involvement of the water-users in irrigation management. Kurunegala district is one area that carries representative types of these various experiments, and further, where the activities in most experiments have been documented.

These several experiments in the Kurunegala district can be presented in the following typology, with examples of each type.

The distinction between a major and minor irrigation work reflects both a statutory prescription and an institutional arrangement. A minor scheme is one which commands a cultivated area of less than 200 acres. Socially too, this distinction is important. A minor scheme is always a village tank where the land-owners and cultivators under it are closely related as kinsmen, fellow-citizens, and residential neighbours, who have developed as a community over a long period. On the other hand, the major schemes, are those that were recently

TABLE 1: Irrigation Project Experiment in the Kurunegala District

Size	Sponsoring Agency	
	Government	N.G.O.
Village Tank	1. IRDP Tanks (DAS)	1. Kelgama (Marga Institute)
	2. Wew Sabhas (NFFHC)	2. Tank Restoration (National Heritage Movement)
Major Tanks	1. Kimbulvana Oya Project (Irrig. Dept.)	1. Kimbulvana Oya Project (IHAP Project)
	2. Hakwatuna oya INMAS project (IMD)	2. Small Farmer Development Association (FAO/ARTI)

renovated or constructed by government. Especially in the case of large schemes of over 2000 acres or so, where the majority of the cultivators are introduced to the area as new settlers, and where community formation and collective spirit in these new settlements or colonization schemes, are less evident due to dispersed residences, heterogeneity of social and geo-cultural origins, and an absence of long-standing historical traditions. These contrasting historical origins as well as the present circumstances therefore, are relevant factors which influence community participation by villagers and colonists.

The type of agency which initiated and conducted the management experiment is also an important factor bearing on the nature of participatory management. The broad distinction here is between government officials and non-government agencies. Government officials have got involved due to two reasons: one is where democratic idealism has motivated certain officials to begin innovative management systems, where such experimentation was tolerated by the establishment (e.g. at Kimbulvana by a Technical Officer and at Minipe by a Deputy Director, both of the Irrigation Department, and a little earlier by the Turnout Groups of the Mahaweli H area initiated by officers at headquarters and project level). The other reason is the project officials' compliance with a government policy requiring the involvement of farmers through some kind of grass-roots organisation. Most such projects are foreign funded and the donors have insisted on mechanisms for beneficiary participation in the decision-making process.

For most NGOs, popular participation was a compelling ideological commitment combined with a search for either indigenous technology or preservation of a heritage or the promotion of self-reliant rural community development. Improved irrigation management was only part of a comprehensive rural development strategy that the NGO's pursued.

The selected experiments in the Kurunegala district will be briefly examined in this short paper, in the hope that it will yield insights into various styles of irrigation management in Sri Lanka, which in turn should provide useful guidelines for policy orientation and for working out implementation strategies.

PART II

Village Tank Restoration under the Integrated Rural Development Programme (KIRDP)

Agriculture Department's researchers developed what was popularized as the Walagamhuhuwa concept, with two essential features: (a) changing the farmers' habit of beginning cultivation only after the tank is full with Maha rains (at Walgambahuwa, sowing was done early with the onset of rains, thus saving tank water); (b) Adopting a short-age (three to three and half months) variety as against the customary four-to-five-months variety of paddy.

As a result, farmers adopted improved rice technology, and were able to increase rice yields and expand the acreage cultivated because of saving on water (Sikurajapathy et al. 1980).

Even before the research at Walgambahuwa was finalized, its tentative results were adopted to frame the model for the rehabilitated minor tanks under the KIRDP. The results of its application in the first 10 village tanks are examined by Gunewardene (1981). The model required (a) the controlled issue of tank water, (b) dry sowing of the crop early in the season to capture the rains, (c) adoption of certain improved management practices which entailed purchased inputs such as weedicides and fertilizer for weed control.

For the purpose of water management, extension workers (KVS) of the Agriculture Department were newly appointed, one for each tank. The **KVS** took all the decisions regarding water management. "There was little participation of farmers in the water management activities. Participation was largely limited to the KVSs working with few farmers (usually good farmers from an extension point of view, often contact farmers were included). In certain instances even the kanna meetings were not involved. However, it was found that the KVSs to a large extent were able to achieve what they desired (as far as control of water is concerned) through these means The success of this approach is less likely when farmer numbers are greater and when conditions are more complex" (Cunawardene 1981). The few recorded instances of farmer participation at meetings of the management project, were occasions when they made useful suggestions as well as castigated the authorities for many defects in physical structures as well as for irregularities in water distribution.

Wew-Sabhas under the National Freedom from Hunger Campaign (NFFHC)

The NFFHC programme of small tank (*wew*) restoration seems to be the most successful attempt in procuring community participation. Indeed, community participation, community management and local self-reliance are the major planks of the NFFHC's philosophy and they guided project activities from beginning to end (Katnatunga 1982).

In the NFFHC programme, community participation is reportedly very high. (Richards 1983; Howes 1984) The initiative in the identification of an abandoned tank to be restored or an existing tank to be improved came from the interested village community. The NFFHC helped with guidance and technical investigation and information. Once a tank was included for restoration, the local community was required to form themselves into a *wew-sabha* (reservoir canal) and to elect a *wew-lekam* (Reservoir Secretary).

The *wew-sabha* was required to start its own maintenance fund with contributions from the membership, which amounted to a small sum equivalent to the value of a season's seed paddy. The monies were kept in a deposit account with the local bank. Matching contributions were made into the fund by the NFFHC. The operation and control of this fund was left in the hands of the *wew-sabha*.

Another strategy adopted to increase local self-reliance was to develop some simple technical and managerial skills within the community. The *wew-sabha* Secretary and others were exposed to seminars and training classes where they were able to discover and develop organisational capacities among themselves. The construction work required some technical knowledge. Were the *wew-sabhas* to expect them from the government officials, there would be considerable delay and over-dependence on the hureaucracy. To overcome the possibility of delay as well as to make such skills available within the community itself, the NFFHC selected educated unemployed youths and arranged for their technical training. Even certain survey instruments were modified and simplified so that they could be used by these village youths.

By insisting on and helping develop the community's own maintenance fund, its own *wew-sabha* organisation, and its own trained personnel, NFFHC has laid the groundwork for local self-reliance and project sustainability. The smallness in the size of tank and its community, as well as the smallness in the scale of operation were no doubt contributory factors.

The Kelegama Project of the MARGA Institute

MARGA Institute's interest in irrigation management is a by product of it's

wide-ranging research into forms and varieties of indigenous technology. The persistence of traditional agricultural methods and irrigation practices in the face of a demanding modern paddy cultivation clearly demonstrated the strength of tradition and the adaptiveness of indigenous technology. MARGA researchers focussed on these aspects and launched, what is called, an action-research programme. The Kelegama village in Kurunegala District was selected as the locale for the experimentation (Fernando and Gunasekera 1982).

The main features of the Kelegama project which are of immediate concern to irrigation management, follow:

1. MARGA placed one of its employees as a resident researcher who also functioned as a educator and catalyst. He was backed by other specialists from MAKGA headquarters, who visited the village from time to time.
2. MARGA researcher and specialists, assisted the village citizens to identify the agricultural problems and to design an action-plan to overcome them.
3. Local resources were taken to mean more than the cash/materials contributions and free labour, usually denoted by that term. Already existing, stable social networks and their leaderships, the folk knowledge and technical competence possessed by the village citizens were also treated as equally important local resources.
4. To implement the project, no new organisation was created, but existing networks and leadership were mobilized. In other words, water management was not treated as a separate and distinct activity, but as one of the many activities which make up the totality of community life.
5. External funding was kept to a minimum, and in fact was negligible. The total direct cash contribution from MARGA was a mere Rs. 68/- for a steel gate. The government contributions were nil. Most construction materials were purchased with funds raised by the community, and that too did not amount to much.

The project resulted in an equitable distribution of water, and the cultivation of certain fields, which hitherto had remained abandoned.

Village Tank Restoration by the National Heritage Movement (NHM)

The philosophy of the National Heritage is grounded on the desirability of resuscitating the traditional and organic links between village, temple, and tank. The tank restoration executed by the NHM represents its most cogent

demonstration of the "ideas-in-action" programme. A series of village tanks in Devamedhi Hatpattu of Kurunegala District was taken up for restoration or improvement in 1976. The NHM sent trained volunteers who, together with the Buddhist priest of the village as the leader, prepared the people for the programme. The priest took the position of an overall programme leader in organizing voluntary labour and the cultivation programme assisted by the village elders. Collective action in water management resulted in achieving higher paddy yields, almost double that of previous years, as well as expanded acreage.

Heavy emphasis was placed on the social and cultural aspects that existed as part of the strategy for economic advancement. For this purpose, old and forgotten rituals were revived. For example, at Madulla village, the priest revived the custom of commencing work at an "auspicious time" for which the help of astrology was enlisted. This made it necessary that all farmers should start cultivation work at the same time, and hence a certain discipline, which was not earlier evident, was brought about in the farmers, so that they kept to a given and agreed cultivation calendar. Similarly, resuscitating what is claimed to be an ancient ritual, the *alut-pen-vedima* (offering of the new water from the tank to the village temple), and the associated organisation of the people of the same village and those of the neighbouring village for the conduct of the ritual, generated an atmosphere of unity and fellow-feeling and inspired many collective activities.

Ratnapala (1976) has documented a successful attempt to revive socio-cultural traditions and to mobilize local religious leadership for irrigation development and its orderly management. Unfortunately, the study was completed a mere one year after the programme was launched, without follow-up, so that questions regarding the continuity and sustainability of the innovation are left unanswered.

The exercise in renovating village tanks is, however, a useful one, in its tenacious pursuit of idealism. "National Heritage believes it is possible to demonstrate that an existing heritage shared by a people can be used as a set of organizing principles around which they can come together and solve their problems with little expense other than to themselves. Such a demonstration, if accepted as valid, will obviate the need for much foreign assistance and will allow greater precision in the pinpointing of specific needs for information, goods, and services to make lives that they deem desirable" (Moles and Riker 1984).

Kimbulwana Oya Water Management Project of the Irrigation Department

Kimbulwana Oya scheme, commanding an irrigable extent of 1,650 acres is

a medium-sized scheme for which the Irrigation Department is responsible. Following a substantial rehabilitation funded by the World Bank-financed KIRDP, the Irrigation Department officials (Irrigation Engineer and Technical Assistant ((TA)) began the difficult task of bringing order into the chaos that prevailed in regard to water distribution. With the transfer out of the Irrigation Engineer, it fell to the lot of the TA to undertake the bulk of the work.

By this time, the Irrigation Department, hacked by its Water Management Division, has experience in a rotational distribution system, and in organizing farmers to help in operating that system, and in the initial experiments at Hakwatunaoya and Vannikulam, followed by Rajangana, in the mid-1970s (Shanmugarajah 1976). It is natural, therefore, that Kimbulwana Scheme too was modelled on these early experiments.

At the helm of affairs in Kimbulwaua, is the Technical Officer, who presides over a Water Management Committee which meets regularly once a week. The Committee consists of local officials and the *Vel Vidane*, the elected farmer representatives. The water management system imposed by the TA is understandably functioning efficiently. Its efficiency is demonstrated by three activities.

First, maximizing the use of available water, including rainfall. This is done by imposing water conservation measures such as making use of rainfall, and hence advancing cultivation schedules; issuing the minimum amount of water required for cultivation operations; avoiding water loss by proper maintenance of the entire hydraulic system; and by enforcing a strict rotational water issue schedule.

Second, reducing disputes within the farming community. This was done primarily by ensuring that water deliveries were made on due time and in sufficient quantity, by ensuring impartiality in applying sanctions against offenders, and by these means, building confidence in the officials.

Third, providing water for all categories of farmers including those who are deemed to be encroachers, and hence with no legal right to water (Weeramunda 1985).

In applying a generalized, stereo-typed model that developed in the Irrigation Department, there was evident a great deal of imagination, innovation, and adaptiveness in the way the TA set about his tasks. Though this experiment will hardly be treated as a participatory approach, it is a successful example of the imposition of good water management.

Kimbulwana Oya Project: the Irrigation Component of the IHAP Programme

The International Human Assistance Programme (IHAP) launched a community development project at Kimbulwana Oya settlement, with funding largely from USAID. One of its major components was the construction of new irrigation facilities to benefit 32 farmers and 40 acres.

The irrigation development under the IHAP was relatively small indeed. The designing was done by the Technical Assistant (TA) of the Irrigation Department, the construction financed by the IHAP and the labour contributed by beneficiaries. The management of the new facilities was thereafter transferred to the Kimbulwana Oya Water Management Project headed by the TA.

Whilst the government-sponsored water management exercise in the settlement was confined to the improvement and intensification of paddy cultivation, the IHAP project sought to promote crop diversification. The IHAP project included roads, community Centers, library nursery schools and children's feeding programme, skills training for non-farm employment, agricultural support activities such as supply of equipment, home-garden competition, extension service, and a credit programme for agriculture diversification. To orchestrate affairs, IHAP had a residential full-time project manager and a staff.

Though there were short-comings in the delivery of these community services and in the mobilization of popular participation, the IHAP approach was eclectic, both in terms of the variety of activities undertaken as well as the range of beneficiary groups convened. Especially noteworthy was the rural credit scheme, founded by IHAP initially, but operated quite successfully by the settlers own Co-operative Credit and Thrift Society (Wimaladharmasiri and Bryan 1985). The IHAP project thus had the potential to complement and support the government sponsored water management project. But the two were at cross-purposes, one promoting crop diversification and the other continuing paddy cultivation. The links that should have been forged between the NGO project and government project were almost non-existent, and the policies that guided them were in conflict with each other. Both failed to promote local participation (largely due to the dominance and officious personalities of the Project Manager and TA) and also failed to recognize the potential of a fairly well established local institution, such as the Co-operative Credit and Thrift Society, to develop into a powerful instrument for socio-economic growth in the settlement.

Hakvatuna Oya Water Management Project

Three successive exercises in improving water management were carried

out in Hakwatuna Oya Scheme, which is a major irrigation system. The first, in mid-1970s, was launched by the Irrigation Department's Water Management Division. After certain studies into water availability, systems improvement, conveyance efficiencies, etc., a rotational issue system was tried out by the officials. The involvement of the water-users in the experiment was taken for granted. Therefore, no attempt was made to experiment with a suitable institutional device. The second, in late 1979-80, was initiated by the Lands Ministry's Water Management Division. This organized the farmers into Water Committees with a part-time Project Manager at the apex. The third followed the current management system which is part of a national system instituted by the Irrigation Management Division (IMD) of the Lands Ministry. It seeks to consolidate the experience of the immediately preceding experiment and to institutionalize the Water Management Committee.

Hakwatuna Oya is one of 50 major schemes included in the Integrated Management of Settlement (INMAS), which is a comprehensive programme for agriculture and socio-economic development of the settlement-cum-irrigation projects. However, the initial phase of INMAS, concentrates only on the water management and agricultural production aspects. The main features of this phase of INMAS are:

1. The adoption of a project approach to management of the settlements' irrigation distribution, maintenance of the physical system and agricultural production. The several field officers of the line departments are brought together into a Management Committee, headed by a full-time resident Project manager appointed by the IMD.
2. The organising of water-user farmers at the Field Channel, D Channel, and Project levels in a serried hierarchy of committees comprising elected farmer representatives and field officers. These groups will be involved in decision-making at the respective level in water distribution, canal maintenance, and production programming.
3. The provision that farmers pay for maintenance works into a separate fund, thus, giving a voice to the Farmer Committee in the decisions regarding the utilization of funds.

The experience in the two earlier experiments have not been systematically evaluated, nor have the details of the activities been properly documented. The ill-effects of disturbing the existing and time-tested adjustment by the farmers themselves by the introduction of stereotype management innovations to satisfy administrative fiats, have been pointed out in a short study of the second experiment (Wimaladharmas 1984).

Small Farmer Development Association (SFDA) of the DAS/ARTI

FAO launched a programme to improve the lot of the small farmers, tenants, and agricultural labourers in eight Asian countries including Sri Lanka. The ARTI and Department of Agrarian Services (DAS) collaborated in the programme. A number of SFDA's were set up first in the Galgamuwa area and later expanded to cover areas in Kurunegala District and elsewhere. FAO provided technical assistance; ARTI conducted training classes and did implementation monitoring and DAS furnished the administrative back-stopping.

The small farmers, tenants, and labourers were organized into groups on a tract/hamlet basis with an elected group leader: and the leaders formed a management council. The emphasis was on group endeavour in planning production activities, obtaining credit and other inputs, marketing, etc. The group leader had a pivotal role in collecting and analysing data on each small farm family, identifying new income generating activities, organizing group meetings and group production, liaising with local leaders and officials, obtaining institutional services, etc. An implementation review confirms that the SFDA's have been able to perform well on the production front (I'ahirana 1986). In these rural areas, it has essentially meant the organisation of the majority of water-users under either a small tank or major scheme, though the efforts of SFDA, covered other aspects than water management.

From a participatory management angle, the SFDA illustrates two key points: (a) giving a voice to poor families when organized as groups and hence assuring genuine participation in activities based on felt-needs, and (b) through trained leaders, building up skills and knowledge within the locality.

The SFDA's are cast in a manner that necessarily brings them in a confrontational course with the well-to-do and powerful farmers, with greater confrontation in major schemes compared to purana *villages*. There is therefore the further possibility of conflict in interest between SFDA and other agricultural and water management institutions in the area. These aspects have as yet to be studied and documented.

PART III

A Comparative Overview of the Different Experiments

Below is a brief analytical overview of the above experiments, placing them largely within the framework of the "axioms" of participation.

Nature. A general comment that can be made embracing all these exercises

is that they were not meant to be scientific experiments. Some were more orderly whilst most were adhoc attempts to come to grips with an immediate problem. None were haphazard affairs, but, on the contrary undertaken in all seriousness, with even a missionary zeal evident in a few instances.

Scope. For most of the government sponsored projects, water management was the major, if not the sole, specific goal, whereas, the NGOs saw it only as part of a comprehensive community development. The former were heavily influenced by the early attempts of the Irrigation Department to introduce technological change; the institutional build-up adopted later was more as a back-stop to technology (Shanmugarajah 1976). The extreme case is Kimbulwana Oya project, which is so strictly confined to water management, it makes no attempt to link up with the IHAP Community Development Project operating within the same geographical area. On the other extreme is the INMAS programme of the Irrigation Management Division, which is comprehensive in its long-range goals, but in its initial phase restricted to water management and related agricultural production, leaving the balance aspects of socio-economic development to other agencies. There is virtue in this approach only if the broader perspectives are kept in sight.

An overly compartmentalized view prevailing within the technically oriented departments, is only natural because each department is founded around one specialized discipline of another. Hence the Irrigation Department would pursue rotational water issue schedules, the Agriculture Department, its Walagambahuwa concept, and the IMD, its project management technology, as exclusive and undiluted management objectives.

On the other hand, the NGOs meet with no such inhibitions, and hence tend to cast their nets wider, even to the extent, as in the case of Kimbulwana IHAP Project, of letting irrigation management become a less important component.

These two extreme positions in regard to irrigation management have important implications for the question of beneficiary participation. Is a functionally-specialized and interest group-specific organisation better able to procure fulsome participation than a multi-purpose organisation comprising a diffuse membership? There is little or no research on this issue. A skeptic might add that for the Sri Lankans the form of the organisation is of little concern: the rural community will either create its own informal organisation, discover an existing one, or even commandeer a formal institution, through which it will attempt to achieve the commonly felt community needs.

Coverage. Whether the whole community or only a segment of it should be covered by an organisation is a question which has ramifications for the issue of

participatory management. Once again, the NGOs prefer to mobilize the whole community, irrespective of economic class or social status through the instrument of traditional leadership, religious institutions, and social networks, as was successfully achieved by the NH Movement and Marga Projects.

Of the government initiated projects, the SFDA, by definition, excludes the large-landowners and large-scale farmers, from its membership. However, the dynamics of this situation, the conflicts in interest between the large farmer and the small farmer, and the mobilization of state support on behalf of small farmer have yet to be studied. On the whole the other types of government sponsored organisations have sought to include all water-users within their membership. The very fact of giving a voice to the hitherto neglected poorly endowed farmers (and even encroachers as at Kimbulvana) is a progressive step. In the IMD projects this is successfully achieved through the device of establishing field channel level groups both as the basic unit which sends up elected representatives to the higher management committees as well as the primary unit for the organisation of all field activities.

Some see an inherent contradiction in situation where a commonly owned resource (irrigation water) has to be shared by individual users for private gains (Weeramunda 1985). Faith in the efficacy of traditional technology (eg. Marga and NFFHC) or in the wisdom of preserving a shared heritage (eg. NH Movement), are positive ways of seeking a resolution of this conflict,

Stages. That participation must take place at all stages of the development process is a condition that is satisfactorily met with in the small-tank villages. The smallness of numbers (eg. 15 to 20 members of the wew-sabha), the smallness of the investment, the simple technical tasks involved, and the traditional freedom from bureaucratic control hitherto allowed to farmers under small tanks, ensured that from pre-planning to progress monitoring of the project, the local community was directly involved in all the stages. Even then, where the government took the leading role in executing rehabilitation works and water management, full participation of the farmers, especially in decision-making, was the least evident (eg. the KIRDP village tank project). Participation, therefore, was evidently in direct proportion to the sponsoring agency's willingness to promote self-reliance in the beneficiaries. The NFFHC went so far as to train the wew-sabha members in the various aspects of participatory management as well as to develop the needed technical skills within the locality.

Organizing Farmers: The Unfinished Experiment

The observation is often made that there is a multitude of farmer organisations in Sri Lanka. Some complain that institutions have not been allowed to continue and grow for 5 to 6 years, and that instead, we have had a series of

experiments. We are the great experimenters: experimenting at village level with different farmer institutions, at the district level with DDC, and even at national level, for example, with the new constitutions. This reminds one of the fact that change is a crucial feature in a developing country. There is intrinsically nothing wrong in changing things and institutions. But the problem is that what is good for one is not good for another and what was good at one time is not good later. But before we condemn one experiment, it must be appraised. What is required is, to examine the results and the processes in a dispassionately non-partisan manner and then to draw conclusions. In chalking out a future path one needs to apply the lessons drawn from the earlier experiments.

In Sri Lanka, one often has to wait for a new government to come to office, to evaluate an experiment that the previous government had launched. Therefore, these evaluations become *ex-post facto* evaluations or more properly post-mortems. Many so-called evaluations of social experiments, which are sometimes undertaken whilst the experiment is on-going, are often little more than “appreciations” in which only the good things are pointed while excluding the bad. It seems to me, that the persons who are ready to critique an experiment during its lifetime, are foreigners, who have a freedom which many Sri Lankan social scientists do not enjoy.

FARMER PARTICIPATION IN WATER MANAGEMENT IN THE MAHAWELI PROJECTS

by
T.H. Karunatileke¹

The Mahaweli Programme

The original FAO Master Plan for the Mahaweli Ganga Development programme anticipated the development of 900,000 acres of land with the provision of irrigation facilities. This comprised 650,000 acres of new land and 250,000 acres of lands, already irrigated but needing supplementary irrigation. Over 200,000 farmer families were to be settled in these newly developed areas. The many dams to be constructed under this programme would generate about 500 Megawatts of power for industrial development and rural electrification.

System H is one of the settlement areas where approximately 24,000 families have been settled. Each settler family has been given 2.4 acres of irrigable land and a little more than half an acre of highland at their homestead. The social infrastructure, hamlet centers, village centers, townships which include schools, hospitals, banks, police stations, co-operatives, and commercial areas have been planned and constructed to cater to the needs of these new settlement communities.

¹Managing Director, Mahaweli Authority of Sri Lanka.

A Unit Manager is in-charge of a Unit comprising a group of 250 farmers. He is assisted by a Field Assistant who is engaged in agricultural extension work. A Block Manager is in charge of a Block, which on an average covers 10 Units. The Block Manager is assisted in his work at block level by an Agricultural Officer, Irrigation Engineer, Land Officer, Community Development, and Marketing Officer. Three to five blocks make up a project area. There are three such project areas in System H each under a Resident Project Manager. The Resident Project Manager has higher level officers of each of the disciplines represented at the block level, to assist him in the management of the project.

Settlement Features

Some of the features of the Mahaweli settlements are outlined below:

1. By Sri Lankan standards, each project covers extensive yet contiguous areas for irrigated agriculture (approx. 50,000 to 100,000 acres).
2. Water storage and regulation of the Mahaweli river have given rise to an unprecedented centralized system of water issues to the many irrigation projects covering a large part of the dry zone.
3. Small farm model (2.4 acres irrigated farm land and .6 acres homestead).
4. Cluster hamlets each consisting of about 125 homesteads in System H and about **250** homesteads in other projects per hamlet, with farmlands within convenient walking distance.
5. Farm layout and water delivery system based on the concept of turnouts, i.e. off-takes from the distributory channels irrigating an average of 18 to 20 **farm** units under a field channel.
6. An unitary approach to management of the Mahaweli settlement projects. At the operational level, the Unit Manager is responsible for a specific area of about 600 acres of farm land/farmers. At a higher level he is assisted by senior specialist functionaries.

Objectives of Farmer Participation

There are three objectives of procuring farmer participation:

1. To obtain collective commitment and assistance of farmers in the operation and maintenance of the irrigation system.

2. To guide farmers in the efficient use of irrigation water.
3. To involve farmers in the eventual self-management of the secondary and tertiary irrigation systems.

Experience in'theMahaweli Projects

The organisation of farmer participation necessitated the determination of: 1) physical and social basis for grouping of farmers; 2) the nature and size of the grouping and the leadership desired; 3) how and to what extent to effectively engage them in water management; 4) and the type of training required.

System H (Kalawewa) was the first new irrigation-cum-settlement project taken up under the Mahaweli programme. It consists of about 24,000-2.4 acre farms. Tertiary irrigation system is based on a series of turnouts. Unlike the Mahaweli areas (System B and C) which were subsequently taken up for development where population is sparse, there were many scattered villages in and around System H. The villagers were traditional social groups. In resettling them in System H, much effort was made to provide their homesteads and farmlands in a manner causing least dislocation to their social ties.

Systematic establishment of farmer groups for irrigated agriculture commenced in the year 1979. In this exercise the following guidelines were adopted:

- The physical basis for the groupings to be the turnout for convenient and effective water issue and regulation.
- The social basis to be the farmers community which received land within a turnout. As in the hamlets, farm lots within a turnout were generally given to farmers with close social links. This proved to be a positive factor in activating the water-user groups.
- The subject of water management was considered in a broad perspective. It was more than the mere issue of water to the fields and maintenance of the channel. It also covered those aspects of land preparation, soil management, cropping, and institutional growth pertaining to water management.
- A forum to be established for regular participation of officers and farmer representatives.
- Understandably in a new project, the initiative has to come more from the officers in organizing farmer participation. Intensity of officer involvement was to be gradually lowered with the growth of farmer groups for self-management.

Organisation for Farmer Participation

In 1979, when this programme commenced in parts of System H (H1, H2, H7, and H9 which presently falls within the Galnewa Project Manager's Division) the unit management method did not exist. Up to its introduction in 1981, the field level operations were assisted by KVSs (*Krushikarma Vyaptha Sevaka* - agricultural extension workers) and JPs (*Jalpalaka* - water management overseers). They were supervised by the Agricultural Instructor and the Irrigation Technical officer who functioned at Block level. However, the same arrangement was continued after the introduction of the Unit Management System. The main difference was the assignment of responsibility for field level operations to the Unit Manager. The Unit Manager was expected to function in an integrated manner.

At first, adequately instructed by the senior project management, the field officers organized general meetings of farmers. The importance of working in groups and under farmer leadership was explained. Farmers were sensitized to the need to have their own groups.

Accordingly, two farmer leaders were elected for each turnout by the farmers, one person mainly to associate with water management and the other with agricultural extension. They represented the turnout irrigation community at the fortnightly meetings convened by the officers at the community Centre. Those regular meetings were to serve several purposes: 1) to allow the officers and farmer representatives to exchange ideas, discuss, and solve problems with mutual understanding and assistance; 2) to plan the operation and maintenance of the irrigation system and agricultural programme in the respective areas with farmer participation; 3) to train farmers representatives and disseminate knowledge and instructions through them to the farmers; 4) to prepare work programmes for implementation by the officers with the assistance of farmers; and 5) to monitor progress.

The field level officers, i.e., JPs and KVSs, were to be assisted by the farmer representatives in their respective fields. Reciprocally, officers were to assist the representatives in their role, in a manner enhancing their position as leaders. This structure was complemented by the monthly training sessions which were conducted for the Block level officers, who in turn regularly trained/instructed the farmer representatives.

It is seen that the ultimate objective was to involve the farmers in water management and agriculture through a scheme of training and participation.

A general evaluation of their performance up to the year 1982 showed limited but certain positive results. Farmers realized the importance of their

groups to operate and maintain the field channels properly and for their common benefit. They became conscious of the necessity for collective effort to maintain the irrigation system and to cultivate land according to an agreed calendar. Preparation and implementation of programmes for rotational water issue and channel maintenance were rendered easy as they were done with farmer consultation and commitment.

The farmer organisation provided the medium for two-way flow of information and formed a close link between officer and farmers. To the settlers who came from distant places of origin, a common-purpose grouping was welcome. Absence of such an arrangement would have placed them in a state of confusion and deprived them of easy access to institutional services. To the old villagers who were resettled, the turnout principle was a continuation of their traditional village institution. The old village society had its features of leadership, self-help, and collective responsibility generally determined by the irrigation system. Those concepts were easily adaptable in the layout of the new irrigation system based on turnouts. In fact, a growth of leadership and community responsibility in the new settlement was first observed in the turnout areas (i.e. 303-Torana-gama) in which the resettlers were the largest majority of the population.

The organisation of water management and agriculture on the basis of turnouts has yielded several gains. Within a few years, it was possible to reduce the excessive use of irrigation water to a desirable water duty. The yield per acre of paddy cultivation recorded a steep upward trend. The groups were instrumental in bringing about a considerable transformation in agricultural practices. Crop diversification was successfully effected in System H. The interest that was shown by the participants was indicated by their eagerness to involve themselves in other community affairs as well. They wished to see that the turn-out groups attended to such matters as health, education, and cultural development. However, with a view to keep to the main objectives, a deliberate attempt was made to confine them only to water management and agriculture.

Some Issues

The observations outlined above do not in any way indicate that there was a growth of rural institutions or leadership to the extent desired. The period of time available was short, about four years. Obviously a longer period is required for their growth. My personal assessment is that the turn-out groups were proving them to be lively cells with a promise for faster growth.

This exercise also has problems and issues which need examination. The turn-out groupings were established for a well defined but limited purpose, i.e., for participatory water management and agricultural extension. Their operation

was confined to the area below the distributory channel. Building them in a pyramidal structure into higher organisations was not intended. Views have been expressed that the small turnout groups should be federated at higher points on the irrigation network. This is a debatable issue. According to my experience it is advisable, at least in the initial stages of a new settlement project, to confine their area of work and scope to the fundamental tasks of water use and agricultural extension only. Their size should be viable enough to achieve simple yet basic objectives. Larger organisations with other objectives could result in a failure to meet fundamental objectives.

A tendency noted was that the field officer began to be over-dependent on the farmer representatives in the performance of their own duties. For example, the Irrigation Technical Officer expected the farmer representative to come to him with the irrigation problems. Some irrigation officers tended to be satisfied by merely expecting the farmer representative to carry out given instructions. They began to move away from the field. Farmer representatives began to feel that their voluntary role was being used as a cover to get work done which should legitimately have been done by the officers. Before such a misconception got entrenched the trend was arrested. In organizing participation and in relating it to the official structure, the possibility for this tendency should be noted.

A similar trend was observed in relation to agricultural extension as well. Extension workers tended to become over-dependent on the farmer representative. As a result, it became questionable whether the extension information really went down to the farmers. The farmer representative necessarily had to be involved in the exercise of organizing other farmers and in the dissemination of extension knowledge. But, understandably, many of the farmer representatives had certain limitations in regard to their absorptive capacity and the time that was available to spend with other farmers. Therefore, a scheme was devised to use the best of two means to approach farmers. That was to approach them through the farmer representatives as well as to reach them directly in the field.

Another issue is, to what extent the turnout farmer groupings should be built upwards to form larger organisational units. The question is whether it is really necessary to build upwards. Is it not more practical to confine its work to the area below the distributory channel and to keep its objectives limited and well defined? It is granted that some form of organisation to cover the many other development needs in a new settlement is necessary. It may be desirable to have a different organisation for such matters as social and cultural development and to exclude from them the objectives of turn-out groupings, water use and agricultural extension. Of course, although not distinctly seen in the management structure, farmer participation is built into the project's irrigation and agricultural programming even at a higher level. e.g. individual farmers can participate in a forum where vital decisions are taken on the preparation of the

seasonal irrigation and agricultural calendar. Such important decisions as the dates and periods of water issues, the type of crops, the schedule of water issues are decided before the commencement of the cultivation season by the joint participation of officers and farmers.

This is a requirement under the Irrigation Ordinance. Once decided, the seasonal programme is implemented and the progress monitored through the turn-out groups. This is an area where refinements and improvements could be effected to achieve better results in water use and cultivation. The collective plans of the different turnout groups could be made to serve as the basis for the preparation of seasonal cultivation and operation and management plans. In effect, this is an acceptance of the principle of planning at a grass-roots level. Such a joint exercise could result in a free flow of information between the farmers and the decision makers and in planning, implementing, and monitoring programmes based on mutual commitment and consent.

Modifications

A subsequent modification made to the scheme was to allow a single elected farmer to represent a turn-out in place of two representatives as earlier. He was expected to cover both water management and agricultural extension. It had a few advantages. Farmers had only a single person to go to. Officers found it easier to work with a single person. Organisation of meetings and training became easier as the number involved was almost half. However, it had a number of disadvantages. With two representatives, there was broader specialization in the areas of activity. Farmers could go to the representative according to the nature of the problem. In a sense, training would have been more effective with farmers who sought specialization. Through such specialist representatives, irrigation management and agricultural extension would have been more effective. Two representatives from a turnout gave the assurance that a void resulting from inaction or disinterest by one could be covered up by the other. The trial carried out with a single farmer representative was found to be deficient in many respects when compared with the performance by two representatives per turn-out.

Recent Experiences in other Mahaweli Projects

The concept of farmers participation through turnout groupings was introduced in February 1986 to the Mahaweli projects in System B (Maduruoya), System C (Ulhitiya-Ratkinda) and System G (Elahara). The System H model was replicated, subject to two modifications: 1) the election of two representatives

per turnout was reintroduced, and 2) the farmers were to be approached through their representatives as well as through the officers. This was a formal and informal means of working with and for the farmers.

There are five main features of this modified scheme:

1. **A** monthly meeting of Block and Unit level managers where they receive instructions from the senior staff.
2. Monthly meetings of farmer representatives and officers instead of the fortnightly meetings.
3. The Unit Managers with Block irrigation and agricultural extension staff serving as trainers of farmer representatives.
4. **A** joint meeting of farmers and officers within the turnout at least once a month. This is more or less a field-day type of training. Training, irrigation maintenance work, agricultural demonstrations, and organisation of voluntary labour (Shramadana) are to be done at these meetings.
5. These are to be supplemented by other field level agricultural and operation and maintenance programmes.

As the programme was introduced recently, it is too early to make any comments on its performance. However, it must be noted that the new programme benefitted from the experience and knowledge of problems encountered in system H.

No attempt was made in this paper to compare the Mahaweli experience with that of projects outside its areas. There is a major reason for this. The layout of the Mahaweli irrigation system is on the basis of turnouts and is different to other older irrigation projects which do not have such finely worked out small turnouts. This fact makes it easier to organize Mahaweli farmers towards participatory management.

THE TRAINING OF MAHAWELI TURNOUT GROUP LEADERS

by
*Jayantha Jayawardene*¹

Introduction

System H of the Mahaweli Project is essentially an irrigated agricultural project. Its main objective is the maximum utilization of the 2.4 acres of irrigable land that has been given to the settlers. It was hoped to achieve this by producing high yielding and high value crops. Maximum possible use was to be made of the irrigation water that was available for cultivation. In the project activities of System H, community development was to be given an equal emphasis with agriculture and water management. This was in order to achieve a social cohesiveness amongst the farmers so that through their active participation in agriculture and water management, the best use could be made by them of the various Mahaweli inputs and programmes.

In order to achieve these objectives, it was necessary to organize farmer groups and to train them in the various aspects of agriculture and water management. It was also necessary to upgrade their managerial and organisational skills, so that the farmer participation in group activities would make their organisation strong and less dependent on the Mahaweli Authority and the Government. The general belief that the Government and its functionaries have to do everything for the settler had to be corrected.

Initially, it was necessary to establish an effective dialogue between the farmers and the officers. Once this dialogue was established it was, hoped to make the farmers aware of their obligations. These included:

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- To assist in organizing the farmers in a turnout to work as a group in water management and agriculture.
- Clean, maintain, and repair their field channels and drainage channels for their mutual benefit and that of the management.
- Distribute equitably amongst themselves the irrigation water that is given to them without wastage.
- Keep to the cultivation calendars that they have helped to formulate, so that maximum use is made of the water available and to ensure better yields.
- To make maximum use of the agricultural extension and input services that are made available to them by the management.
- To enforce sanctions on those who do not keep to the cultivation calendar and those who damage irrigation structures, and to resolve disputes amongst themselves.

The need for a strong and effective farmer organisation was obvious if these objectives were to be achieved.

The Irrigation System

In designing the irrigation system for the Mahaweli areas, management considerations too were an important factor. There was an emphasis on rotational water issues as opposed to the conventional practice of continuous flow. In the older irrigation projects, long distributory channels were a common feature and from these channels individual pipe cutlets were given to each field. This allowed little room for the collective organisation of farmers for water distribution.

The irrigation design for System H provides for water to be ultimately released to a turnout group of 15-20 farmers, who then have to manage and use this water by sharing it equally among themselves. The Mahaweli Authority is responsible for the delivery of this water from the reservoir via Main, Branch, Distributory, and Sub-Distributory canals to the point where the water was turned out to the Field Canal, The Field Canal has a capacity of 1 cusec. The 1 cusec canal necessarily requires irrigation at night as well, and this naturally poses problems to the farmers as well as to the officials.

The Turn-Out Groups

It was assumed by the planners that the farmers in each turnout would, on their own, organize themselves for the equitable distribution of the water allocated to them. They **also** assumed that the farmers would maintain their field channels and irrigation structures on their own. It was found early that, in addition to the problems of land preparation, the farmers were not in a position to distribute and share this water equitably among themselves because they did not have any basic organisation within their turnout area. They were not maintaining the field canals nor the irrigation structures. It was evident that there was an urgent need for a farmer organisation at the field channel level.

It was felt that the basic farmer organisation that was necessary, had to be at the turnout level where such an organisation would be most effective. It was easy to organize the farmers within a turnout as they had common objectives and common problems. It was necessary therefore, to get the farmers in each turnout area together, so that they could be organized for group action and trained in water management where initially the farmers had the biggest problems. These problems were more acute with the farmers who were cultivating the tail-ends of the turnout areas, who did **not** get sufficient water for cultivation. In some instances, this was due to over use and wastage by the head-end farmers and in some instances, due to faulty construction within the irrigation system.

There was no formal or informal relationship among the farmers in a turnout area which would have enabled them to work together and to discuss and solve their problems. With the organisation of the farmers at the turnout level, we hoped to develop social cohesiveness among them around water management and agriculture. We also hoped to build a strong relationship between farmers, farmer leaders, and the officers which would form the base on which problems could be surfaced and identified and solutions found suitable to all farmers in the group.

The co-ordination that was necessary between agriculture, water management and community development was to be emphasized when organizing the farmer group. Community Development activities that hitherto had been given little emphasis in the pre-Mahaweli settlement projects, played an important role not only in assisting the farmers to organize themselves but also by acting **as a** catalyst for all the other project activities. It was through the active participation of all the farmers in a turnout area that maximum use could be made of the land and water given to them, This was especially so with regard to the equitable distribution of the limited irrigation water that was available.

Training Strategy

It is difficult to organize and train 24,000 farmers, each of whom has an individual land holding. Therefore in August 1979, the strategy that the Mahaweli Development Board decided to adopt in the organisation and training of farmers, was to take representatives of a turnout group for initial training. These farmer representatives (FRs) would receive training in agriculture and water management and would also be given any special messages that the Mahaweli had for its farmers. They would in turn disseminate this training and information to the other farmers in their group.

In System H there are over 1,730 turnout areas. The Unit Manager together with the Engineering Assistant convened meetings of the farmers in each of the turnout groups and asked them to elect two farmers to represent them as the Turnout-group Leader and the Contact Farmer.

A joint team of all the field staff attached to the Range met all the farmers in that Range and explained the need and purpose of a farmer organisation. This team consisted of the Agricultural Instructor, (AI) Assistant Community Development Officer, (AO) Development Assistant, (DA) and the JPS and KVS.

It must be noted here that all FRs were elected by the farmers and not selected by the management. The Turnout Leader was for water management and the Contact Farmer was for agricultural extension activities.

These farmer leaders were brought, once a fortnight, to the Community Development Training Centers which were located in various parts of System H. Their training was organized by the Unit Manager. The Block Staff were engaged in the main aspects of training these farmers in water management, agriculture, marketing, credit, etc., and also in community development. The Project level staff were also involved in this training, in that some members of the project staff visited each of these training sessions and spoke to the farmer leaders. The farmer leaders could also use these sessions as a forum where they could surface the various problems of their group and find suitable solutions for them.

After each training session, the Turnout Group Leaders were supposed to organize meetings in their turnout areas and to disseminate the training and information that they received at these sessions to the other farmers and also inform them of the solutions to their problems.

Training Administration

The farmer leader training programme was well organized and was held on a regular basis at a prearranged time and date so that the participants were well

aware of the dates of their training programme. The farmers were given folders, pen, and paper so that they could keep a record of all their training activities together with the literature that was distributed. During these training sessions, the farmers were given instruction sheets on the different subjects in which they were trained.

These instruction sheets, which were prepared by the project staff related to the particular aspects of training that was given to the farmers. Instruction sheets were issued not only on subjects relating to agriculture, irrigation, and community development, but on other relevant topics as well. All these instruction sheets have now been put together in the form of a handbook which is being used for future training, not only in System H, but in other Mahaweli systems as well (Jayawardene 1983). The lectures at these training sessions were given mainly by the staff working in the project areas, but in some instances, specialists from outside were invited to deliver special lectures on important topics.

The farmer leaders were paid Rs. 10/- for attending each training session as partial compensation for the wages that they would lose in coming continuously to these training sessions. Their continued attendance was important as the farmer leaders were one of the major links between the Mahaweli staff and the other farmers. This payment meant that they did not have to make too great a sacrifice on behalf of the community. Lunch was provided on the days that the sessions were held. It was argued by some, however that the continued enthusiastic attendance of the farmer leaders at these sessions was due to this payment. This theory was disproved later on when the payment of Rs. 10/- was withdrawn without an effect on the attendance. It was evident that the farmer leaders attended these sessions because they saw its beneficial aspects.

Evaluation

An evaluation of these training programmes shows that turnout group training has had a positive effect on the farmers in enabling them to organize themselves to make maximum use of the land, water, and other resources available to them. The increase in productivity has meant higher income which in turn has helped them to improve their quality of life.

These training sessions have also helped the farmer cultivate other more profitable crops like chillies, which they were not used to cultivating.

Through these training sessions and turnout organisations we tried to wean the farmers away from paddy cultivation during the Yala season to adopt the cultivation of other field crops.

These changes have now proved to be beneficial in that large areas are cultivated during the Yala season with other field crops, especially in the red-dish brown earths which constitute 60% of the soils in System H. In 1979, 414 acres were cultivated in other field crops, increasing to 22,500 acres in 1985. The positive effects of our farmer training programme can be seen broadly in the following observations:

1. A rapid reduction of the irrigation problems that beset most of the farmers in the initial stages of the project, especially in the receipt and equitable distribution of water. This is revealed by the reduction in the number of problems listed by the respective Unit Managers before the commencement of each season.
2. The adoption of new agricultural methods and techniques. This is borne out by the fact that System H has been able to reach yields higher than the yields in any other district in the country (Table 1 below).
3. System H produces over one third of this country's chillie requirements. This is reflected by the increased acreage under chillie each year shown in Table 2 below.
4. The progressive reduction in water use as shown in Table 3 for the cultivation of both paddy and other field crops, can be positively related to the training of farmers in water management.
5. Many turnout group organisations now take on small maintenance contracts within their turnout areas or on the distributory channel close by. This gives those farmers in the group an added income and ensures the proper and satisfactory maintenance of their irrigation system.

TABLE 1: Paddy Cultivation in Maha Season

Maha Season	Kalawewa Average Yield (Bu/Acre)	National Average Yield (Bu/Acre)
1978/79	92.3	
1979/80	87.68	
1980/81	95.68	
1981/82	71.74*	
1982/83	104.23}	
1983/84	81.27	
1984/85	92.33	
1985/86	87.57	

(*Excessive rain was recorded during this season)

Source: (1) Records of Resident Project Manager, Kalawewa (b) Agric. Economic Division, Dept. of Agriculture.

TABLE 2: Chilli Cultivation: Extent and Production in Kalawewa Area

Cultivation Year	Extent (h/a)	As % of National Extent	Production (Metric tons)	As % of National Production
1978/79	91	0.45	45	0.29
1979/80	1719	6.79	1403	5.58
1980/81	608	2.52	617	2.89
1981/82				
1982/83	3021	9.4	2077	10.3
1983/84	6194	20.19	6812	25.28
1985/86	7910	18.79	11540	29.5

Source: K.P.Wimaladharm: The Incongruence Between Agricultural Research Policy and Development Planning : the case of chillies in the Kalawewa Settlements under the Mahaweli Development Project. PGIA, Peradeniya University: 1985.

TABLE 3: Water Duty in System H - Kalawewa

Maha Season	Water Duty in AC. FT.	Yala Season	Water Duty in AC. FT.
1979/80	5.93	1979	7.7
1980/81	6.64	1980	6.0
1981/82	4.90	1981	5.30
1982/83	4.93	1982	5.67
1983/84	1.68	1983	5.70
1984/85	4.35	1984	5.14
1985/86	4.05	1985/86	5.57

Source: Resident Project Manager, Kalawewa, MEA Office.

It was interesting to note that in most instances a farmer at the tail end of the turnout was elected the leader. This probably was due to the fact that he had problems in receiving water to his field which necessitated his active participation in the group's activities. In a number of other instances, it was noted that the more affluent and influential farmer became the leader. It was observed latterly that the Farmer Leaders who were elected, represented the interest of the fellow turnout farmers as well. Each year when the farmers have an opportunity of electing new leaders, only 5% of the leaders are replaced.

We have found, in certain instances however, that the Farmer Leaders were not disseminating the information that they were given at the training sessions to the others in their groups. This was in the region of 10% to 15% of the Farmer Leaders. We also found that in certain instances, the Farmer Leader was now considered an extension of the bureaucracy and therefore, other farmers in the group did not readily accept whatever training or information this Farmer Leader tried to impart to them. These leaders did, however, make use of this training themselves. In these instances the effect of agricultural extension was limited to the demonstration effect of the farming activity of the turnout leader.

Where there was no group activity or organisation, it was difficult for the farmers to manage their water and to solve the problems that arose with regard to its equitable distribution. This was also evident in turnouts where farm allotments had been leased out. The lessee was not at all interested in group activities. As a result the other farmers of that turnout too did not show much interest in the activities of the group. These instances of leasing were sometimes difficult to detect. Though there is no clear or authentic data, it is estimated that approximately 15% to 20% of the lands are leased out. In such situations we have tried to change the attitudes of the turnout group by paying special attention to the whole group at the field itself.

All in all, it has been found that the turnout leader training programme has had beneficial effects in helping farmers to organize themselves as a group for profitable cultivation activity. There is now a strong relationship between the officers and the farmers in a turnout group where the Farmer Leader was the initial link. This has contributed to the quick and effective solution of farmers' problems which was one of the main objectives in organizing the farmers at the turnout level.

Group activity and the early solution to problems have also enabled the farmers to settle down quickly and to stand on their own feet. It has also helped to achieve high agricultural production, thereby justifying the large investment that has been made in developing these lands and settling the people. The higher incomes that they earned have led to an improvement in the quality of the lives they now lead.

It must be recorded that these training programmes would not have been successful, if not for the positive role played by the field staff as organizers and trainers. The strong relationship that was built up between the farmers and the officials was important. No effective farmer participation is possible in irrigation management, especially in schemes like System H, without the initiative shown by officials. The field staff engaged in farmer training activities, had to be initially trained as trainers to effectively organize and train the farmer leaders. A special programme was drawn up for the training of the Mahaweli officers as trainers and this programme continues even now.

Future Programmes

Since the turnout leader training programme has been successful and its objectives met to a great extent, we decided to try the training of the whole turnout group in certain selected areas. Here all farmers in a turnout were brought together. The Mahaweli staff could then by way of lectures, discussions, etc., give all of them the special messages and training that was necessary for the group.

These sessions were informal and were conducted in a location within or close to the turnout area itself. This was a departure from the class room type of training that was conducted for the turnout leaders hitherto. The farmers in the turnout were now engaged in a more field-oriented training. The response to this type of training was encouraging and of benefit to all the farmers in the turnouts that were chosen for this experimental training programme. However, due to logistical reasons -- there are over 1,700 turnouts in System H -- it was not possible to extend this type of training to everyone of the turnout group areas. Therefore, in System H, we now have turnout training in certain chosen locations in each RPM's area. We also continued the farmer leader training programme as done earlier, so that we continue to keep in touch with all the farmers either directly or through their turnout group leaders.

Organising the turnout groups and training the farmers with the same objectives, has been started in the new Mahaweli project areas, System Band C as well. The experience that we have gained in System H is proving useful to our future work.

In the Tambuttegama RPM's area of System H, D-channel organisations were formed at the beginning of the Maha 1985-86 season. All the Farmer Leaders of the turnout along each D-channel constituted the membership of these new organisations. The main objectives of the new D-channel organisations were:

1. To establish a continuous dialogue between the farmer and the officers in respect of the operation and maintenance of that D-channel.
2. To assist in the organisation of the land preparation and other agricultural activities so that the water distribution programme could be carried out smoothly.
3. To arrange for a water distribution system among the turnouts that would ensure a uniform flow in the D-channels during the periods of water issue for each cultivation season.
4. To ensure that there is no wastage of water at the D-channel level and that there is no willful damage to structures and the D-channel.
5. To get the D-channel farmer organisation to effect necessary repairs to the D-channel and structures, to give the farmers the opportunity to earn an income and to ensure that the work would be done satisfactorily.

The obligations of the Farmer Leader who are the members of the D-channel organisations were: (a) they must attend all meetings of the D-channel organisation; their active participation at these meetings was necessary and they are encouraged to keep notes of important decisions taken at these meetings; (b) they should keep all the other farmers in their turnout fully informed of what happens at these D-channel organisation meetings and the decisions taken; (c) Farmer Leaders should maintain a good relationship with the officials of the Mahaweli and strive to assist them actively in their work so that they can eventually take over some of their functions.

The observations made during the last Maha season on the functioning of these D-channel organisations showed that they had started off well (Scudder and Wimaladharmasiri 1985). It has been decided to continue these programmes in the coming Yala season as well. At the end of the Yala season an evaluation will be made of the performance of these organisations with a view to deciding future programmes.

THE GAL OYA FARMER ORGANISATION PROGRAMME: A LEARNING PROCESS ?

by
Jayantha Perera¹

Introduction

The post 1970 era has witnessed three main types of irrigation development activities in Sri Lanka. They are the construction of major irrigation systems such as the Mahaweli Development Project; the rehabilitation of major irrigation systems; and the rehabilitation of village-level minor irrigation schemes. Water management is recognized as an important aspect of irrigation development and since the 1970s, the State as well as donor agencies have become aware of the fact that the irrigation systems, whether large or small, need the involvement of both officers and farmers to operate and maintain them efficiently.

The Gal Oya Left Bank Rehabilitation Project, started in 1979, falls into the second type of irrigation activity--a large-scale rehabilitation programme with heavy investments. As a part of this exercise, a farmer organisation programme was introduced as an experiment to obtain farmers' participation in water management. This paper is a case study of this experiment, which has been in **progress** for the last 5 years.

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The Gal Oya Irrigation System, located in the south-eastern part of Sri Lanka² was the largest irrigation-based settlement project in the island prior to the Mahaweli Development Project. The construction of the irrigation system began in 1948 and was completed in the early 1950s. The reservoir, Samudraya, can store 770,000 acre feet of water and has a command area of 120,000 acres. The Gal Oya Irrigation System has three main divisions: the Left Bank, the Right Bank, and the River Division. The Left Bank (LB) command area is the largest of the three divisions with about 65,000 acres of irrigated land.³ The LB system is comprised of nearly 32 miles of main channels, 50 miles of major distributaries, and about 600 miles of field channels.

The physical system of the Gal Oya Left Bank (GOLB) in the late 1970s was aptly described as a "hydrological nightmare" (Uphoff 1986); channels were silted, structures were broken, and the channel capacity had been greatly reduced by erosion.

In 1978, the Government of Sri Lanka and the United States Agency for International Development (USAID) selected the Left Bank of the Gal Oya Irrigation Scheme for rehabilitation as the first step of a comprehensive plan of improving water management in major irrigation schemes. The rehabilitation project in the GOLB focussed on both physical rehabilitation and water management.⁴

The Irrigation Department (ID) was appointed as the project implementing agency with the technical assistance of PRC Engineering Consultants, Inc., an US engineering firm. Through a Letter of Understanding, the ID was further assisted by the Agrarian Research and Training Institute (ARTI) which worked on the farmer organisation and socio-economic components of the project. The ARTI was assisted by the Rural Development Committee of Cornell University, USA. The project initially spanned over 44 months (August 1979 to March

²The scheme is located in the Dry Zone, where the average annual rainfall is about 327 mm. The reservoir's catchment area receives its main rainfall (about 70%) from the north-west monsoons, which blow during the month of November, December and January. In the Dry Zone, cultivation of a second crop, mainly paddy, entirely depends on irrigation water.

³Officially the LB system irrigated about 42 acres.

⁴Specifically, the project was to (i) rehabilitate the GOLB physical system; (ii) conduct on-farm water management research at Gal Oya and Uda Walawe; (iii) improve the central support provided by the Irrigation Department; and (iv) assist in the establishment of farmer organisations in the construction, operation and maintenance of systems. The Project was to develop procedures and techniques which can be replicated throughout Sri Lanka (USAID 1983:3).

1984). But as a result of a "shortfall of funds and an inadequate time period to achieve the project purposes," the project life was further extended by 21 months, i.e., until 31 December 1985. USAID provided financial support in two ways: a grant of US\$ 5.1 million and a loan of US\$ 10.8 million. The Sri Lanka Government's contribution was US\$ 24,478 (USAID, 1983: AND ANNEX D).

Pre-Rehabilitation Status of the GOLB

By 1978 the Irrigation system of the GOLB was in a very deteriorated condition. Main system management was haphazard and in 1982 water was regularly controlled and measured at only seven points, for the entire Left Bank system. Because of water shortages, at least one-third of the LB command area seldom or never got water in the yala (dry) season (Murray Rust et al. 1982).

A survey carried out by the ARTI in GOLB revealed that the average size of the lowland per settler was only 2 acres with a range of 0.5 acre to 5.0 acres, which indicated a skewed distribution of land ownership. This was a result of several interrelated factors: mortgaging, share-cropping, and extensive encroachments, especially in the upper reaches of the COLB. In some places, as much as 40% of settlers were non-owner operators (Ranasinghe-Perera 1984).

Cooperation among farmers was minimal. Social relations among settlers, who came from different areas of the country, were often strained. Settlers generally had a low self-image. Relations between farmers and ID officials were marked by mistrust and recriminations. Farmers had no confidence in the competence or the trustworthiness of the ID's staff. For example, a farmer asked the ARTI research team in early 1980, whether it was possible to get an agency other than the ID to implement the rehabilitation project (Uphoff 1981). Many field-level officials such as Maintenance Overseers, Jalapalaka (JP) and Yaya-palaka (YP) were notorious for their corruption and thuggery.⁵ The main obstacle to efficient water management, from the farmers' view point, was the local-level officials, who had political and bureaucratic power behind them.⁶

⁵One JP used to promise that he **would** provide enough **water** for any cultivator if the latter gave him Rs. 50/- and a bottle of arrack (Uphoff, 1981).

⁶One JP who was selected by the farmers as their field channel Farmer Representative attempted to use his **new** power to his advantage. He had his land allotment at the bottom **of** the field channel **and** had used his influence to raise the field inlets of all allotments which were located **above** his, so that water could come **along** the field channel first **to his** allotment. Because he **was an** influential person in the area, the others could not correct this injustice.

On the other hand, the ID officials, especially irrigation engineers, believed that farmers could not use water responsibly and carefully. Therefore, they argued that it was necessary to organize, educate, and discipline the farmers to do what the ID asked them to do. Thus farmers were considered a part of the problem while the latter constituted the solution.

The ARTI found that the farmers' lack of confidence in Government officials was the main obstacle to farmers' participation in operation and maintenance activities in the GOLB. Unreliability of water supply and lack of initiative among ID officials created this general ill-feeling among the farmers (Wijayaratna 1985). Farmers' participation in water management had been further discouraged by the heterogeneity of the population and the rural leadership that prevailed in the area; it was often politically oriented or interested in personal gains (Ranasinghe-Perera 1984). Under these circumstances, organizing farmers in the Gal Oya left Rank appeared to be a challenging task. The ARTI/Cornell research group (hereafter referred to as the ARTI team) soon realised that until and unless the technical staff of the ID changed their attitudes on water management and farmers, it would be difficult to change farmers' attitudes towards water management. Furthermore, the ARTI team found 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 didn't help themselves, nobody else would" (Uphoff 1986).

Although no concrete evidence was available then to support the above, this belief formed the philosophy behind the Farmer Organisation Programme as introduced by the ARTI team in the Gal Oya Left Bank. The ARTI team henceforth called it a "methodology" that would "stimulate the evolution of organisations by farmers themselves" (Wijayaratna 1985).

Objectives of the Programme

Both the Government 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. To achieve this, it was imperative that the beneficiaries of the irrigation system, i.e., farmers, be drawn into look after, and manage at least those sections of the irrigation facilities that directly serve them. Otherwise it would not only be difficult to ensure the efficient use of the available water but also to prevent the gradual decay and ruin of the facilities themselves as happened during the pre-1979 era. Farmers' involvement in such

activities was to be come through farmer organisations. The main objective of the Farmer Organisation Programme (FOP), was to promote farmers' participation in water management and system maintenance at all stages from decision making on, including the identification of needs to implementation, to including the enjoyment of benefits.⁷

The establishment of farmer organisations and the promotion of farmers' participation in these organisations were assigned to the ARTI. However, these issues had been left rather undefined in the Project Proposal except for the question of "freelabour." From the ID's point of view, it was the farmers' duty to contribute their labour for rehabilitation **work**. The farmer organisations were to have **an** uniform legal framework imposed by the ID. Thus the farmer organisations were to be formulated in such a way that engineers could supervise their activities. However, even if the ID official had the opportunity to develop an amicable relationship with the farmers, the ID did not have enough staff to promote a farmer organisation programme throughout the GOLB. Upon the ARTI request, the Government withheld the introduction of such farmer organisations at the GOLB and allowed the ARTI to evolve a type of farmer organisation which could accommodate both farmers' demands and interests, and officials' work and time targets. In this regard, the ARTI had not possessed its own "blueprint" organisation for the GOLB farmers.⁸

The basic hypotheses that guided the FOP can be summarized as follows:

1. No single model would be appropriate for the whole of GOLB given its ethnic, hydrological, and other variations.

⁷More specifically the FOP was expected to develop an institutional mechanism to fulfill the following functions which were considered to be essential for effective management of any irrigation-based settlement project in the Dry Zone of Sri Lanka.

(a) take on the responsibility of looking after the equitable distribution of water;

(b) perform the task of aborting or resolving conflicts which would otherwise be disruptive to the system;

(c) promote among farmers the knowledge and attitude necessary for the conservation of water and the maintenance of the system;

(d) ensure that the work of cleaning and maintaining the channels and structures within the field channel area are done regularly and in time; and

(e) arrange to communicate the needs of the farmers to concerned agencies outside as well as to communicate to the farmers all relevant information from outsiders, e.g., the data of water issue to the field channels in the GOLB area (Kasynathan 1986).

⁸Physical rehabilitation began in 1979 and the ARTI wanted to promote farmers' involvement in this activity with a view to encouraging them to see the system as 'theirs'. This need left little time for experimenting with different farmer organization models in the field. Thus the institutional organizers as catalysts for farmer organization development were recruited, trained and deployed in the GOLB by 1981.

2. Given the negative attitudes of farmers towards the ID, its water management/system would not only require reorientation but also some structural changes.
3. An informal farmer organisation with the tasks that farmers could agree upon has more chances of viability than a formal organisation introduced from outside. Of course, when farmers gather experience and recognise the importance of their group activity they, could then evolve their informal organisations into formal ones.
4. Water management is central to farmer organisations but it is not their exclusive concern. Farmers' involvement in efficient water management requires strong linkages with various agricultural service agencies as Department of Agriculture and Department of Agrarian Services.
5. The FOP is a bottom-up approach which will evolve through practice a methodology which shows how to utilize both local and external resources effectively. In this regard, the programme depended on two assumptions: (a) carefully selected and trained young people can work effectively with farmers showing them the value of group activity and organisation; and (b) farmers will respond positively to their sincere and informed efforts (Uphoff 1981).

The FOP that is based on the above assumptions could be considered as an institutional mechanism that would work with appropriate modifications along its way (Uphoff 1986). A good example for this is the very first modification introduced with a view to linking physical rehabilitation with farmer organisations. The original project design was to operate farmer organisations separately and independently from physical rehabilitation work. These organisations were to take over field channel-level water management activities. This was a neat and simple idea that any administrator or a policy maker would have accepted. But the ARTI team was expected to link farmer organisations with physical rehabilitation to assist the ID's activities, taking input of farmer suggestions to redesign and carry out field channel rehabilitation. This attempt posed difficulties for the farmer organisations as rehabilitation activities had a chequered progress. However, this linkage later became an important aspect of the FOP as it facilitated discussions between engineers and farmers about designs and construction activities at the field channel level.

Strategy for Promoting Farmer Organisations

The original Project Paper set a target on Organizing 19,000 farmers on

57,000 acres by the end of 1984. It envisaged 'farmers' organisations at the field-channel level to desilt and rehabilitate field channels. Farmers were expected to donate their labour and thus no funds were provided in the Project Budget for this purpose. Farmers' participation in this manner was taken for granted and the ARTI was expected to bring about such participation as part of the effort to implement the Project.

However, the ARTI early reconnaissance studies had clearly shown that the lack of mutual respect and cooperation between farmers and engineers was the fundamental problem impeding better water management in the GOLB. In this regard, the ARTI strongly emphasised the need for a "catalyst" to bring together the water bureaucracy and farmers. "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)" (Wijayaratne 1985). The IOs were expected to work with farmers and to instill the value of group activities in achieving their demands and in helping each other to develop an efficient water management system.

Recruitment of Institutional Organizers

Several key criteria were emphasized in selecting IOs. The ARTI advertised calling applications from graduates (both male and female) who possessed at least two of the following qualifications: (1) knowledge of irrigated agriculture; (2) willingness to live in remote villages for extended periods of time; and (3) leadership skills and organisational experience'.

More than 70% of the successful candidates were children of small farmers and this background helped them to win the confidence of farmers, to understand their problems quickly, and to live and work under hard living conditions, both physical and mental (Wijayaratne 1985)

IO Training

The IOs were trained for 4-7 weeks before they were fielded in the GOLR. Their training consisted of lectures and discussions on the broad areas of agriculture, irrigation, local institutions, and communication. The nature and extent of the training varied from batch to batch. Some batches received more formal training and less field training, while others were exposed to more field training. The field training of the later batches was facilitated by the presence of experienced IOs in the field. More emphasis was placed, during the field training

period, on a practical on-the-job training in the methodology of promoting people's participation by working in partnership with farmers. IOs learned how to enter into the rural community and establish rapport with the farmers. Further, they learned how to identify farmers' needs and problems and how to resolve their problems. The most important component of this training was to learn how to work with farmers and officers and how to promote healthy relationships between the two groups.⁹

Deployment and Supervision of Institutional Organizers

A team approach was the basic strategy of deployment of IOs. Four to five IOs were assigned to an area, within which individual assignments were made, but not exclusively. The group would meet weekly to discuss their work and problems, seek solutions by consensus, and become acquainted with the area.

The IOs in the field were supervised by Research and Training Officers of the ARTI. A Government Officer (District Land Officer) from the Ministry of Lands and Land Development was appointed on a part-time basis as the resident IO supervisor in the GOLB. He was in charge of administrative and logistics problems of the IOs.¹⁰

Process Documentation

The learning component of the FOP was initially done through a "process monitoring programme," using participant observation as its main tool. Process Documentators (PD) who were selected from the IOs, observed and reported the social dynamics generated as a result of the intervention of IOs in the community. Process documentation attempted a continuous assessment of the progress of farmer organisations, their defects, strengths, problems, and potential solutions. At the beginning, each PD discussed his report with the whole team during its weekly meetings. They identified problems, and collectively devised strategies to cope with them.¹¹ Quite often problems were discussed and solutions were found in the field itself.

⁹The ARTI conducted in-service training sessions and seminars occasionally to update their knowledge and skills and to share their field experience.

¹⁰During the first two years of the Project, IO supervision was carried out systematically. After that, due to the rapid turnover of the Research and Training Officers attached to the Programme, the supervision of IOs became erratic and discontinuous.

¹¹The processes documentation reports were sent to the IO supervisors and to the ARTI team for feedback. These reports helped the ARTI team in their research and in the preparation of training for IO training activities.

Establishment of Farmer Groups and Organisations

The most significant feature of the IO training was that each of them was expected to enter the community with a trained but an open mind; he did not take with him a model organisation. He did not have a ready-made organisational structure, complete with constitution, by-laws, qualifications for membership, objectives, functions, sanctions for transgressions, etc. His objective was to initiate a process, encompassing a range of options applicable to different locations and situations (Wijayaratne 1985).

The first step towards organizing farmers was the IOs' private meetings with farmers. This was done in farmers' paddy fields or at their homes. Through these informal meetings, the IO and farmers developed a sense of friendship and in this way the IO managed to explain the participatory and egalitarian objective of the farmer organisations to the latter.¹²

After initial familiarization with the area and farmers, the IO met with groups of farmers, who cultivated land using water from the same field channel, to discuss their problems and needs. The focus of such meetings was to formulate strategies for solving problems, first through their own group initiative, and thereafter seeking outside assistance.

The next step was to organize an *ad hoc* committee or to choose a spokesman to represent the group and to direct group activities such as desilting a field channel, repairing a broken channel gate, or planning a rotation of water so that the tail-enders would also receive their fair share of water. When farmers got used to working together and realized that such group activity was beneficial to them, the IOs encouraged farmers to form a more visible farmer organisation at the field channel level. These are not formal or legalistic organisations but informal groups (*kandayam*) and they functioned mostly through the offices of a representatives chosen by consensus. Thus one can see an evolution of community activity starting from a collective action towards a farmer organisation.

With the commencement of physical rehabilitation, these organisations facilitated the IO's work in several ways. They provided the forum for the engineers to discuss location-specific problems with farmers. Such meetings improved farmer-engineer relations and promoted farmers' support for rehabilitation work.

¹² Each IO was expected to know his area of operation well. In fact IOs were told at the end of their training to prepare two types of profiles - *area profiles* and *household profiles*. Data on geography, socio-cultural activities, economic factors and political factors in community organization were to be collected for the area profile; household income, land ownership, social status etc., for the latter.

Structure of Farmer Organisations

By the end of 1985, the FOP had a four-tier structure, each tier corresponding to a hydrological unit of the GOLB irrigation systems: Field Channel Organisation (FCO) at the FC level, D-Channel Organisation (DCO) at the Distributary Channel Level, Area Council (AC) roughly at the Branch Channel Level, and Project Committee (PC) at the apex covering the entire GOLB.

Field Channel Organisations

The primary level of irrigation activities from the farmers view point is their field channel. Therefore, in the GOLB, farmers were encouraged to manage the irrigation system through small groups of farmers, whose fields were served by a common field channel. Sometimes farmers simply selected a representative for each channel, where there were more than 25 farmers to a channel, they selected two representatives and where there were 40-45 farmers, three representatives. Thus the average size of a FCO was 12-15 farmers. The primary objective of a FCO was to promote cooperation for water management as well as to develop attitudes conducive to participation in system management among farmers. These groups were informal and had no regular meetings or records of discussions. However, the extensive process documentation carried out by the IOs provided information on subjects discussed in these meetings.

With the establishment of DCOs and ACs, the concern of the FCOs has largely become confined to the internal problems such as channel cleaning and water distribution. As a consequence, there seems to be less need now for FCO meetings. Farmer Representatives (FRs) now take farmer problems to more effective forums such as DCOs and ACs. According to a recent study, 56% of the farmers said that their FCO meets once every season to discuss their problems (Kasyanathan 1986). After working closely with 10-15 farmers over several years an FR rarely encounters new problems at the field channel level. On the other hand, important topics are now discussed at larger organisations, such as DCOs and ACs, as decisions can easily be taken at these levels. Farmer problems therefore are communicated to FRs and they are fulfilling their duties by representing matters at more effective forums. Thus 93% of the farmers judged that FRs are "acceptable to all or most" (Kasyanathan 1986).

D-Channel Organisations

An important activity of the IOs was to encourage FRs of field channels along a distributary channel to meet informally and work out schedules for water delivery. Once these activities are consolidated, farmers were expected to

form DCOs. Demarcation of a DCO area was done entirely by farmers within the help of IOs. Where D-channels were short or where several D-channels were located so that the fields fed by them constituted one hydrological unit, they were brought together under a single D-channel organisation. As a result, the extent covered by each DCO varies from 200 acres to 1500 acres. Each DCO has all members of the FCOs under it as members of its general body. FRs represent their FCOs in the DCOs Committee meetings, They select by consensus the President, Secretary, Treasurer, and other office-bearers of the DCO.

Since DCOs have been devised by the farmers themselves and were not determined by any master plan, they vary from each other in their stated objectives as well as in other features. For example, while some DCOs stipulate that a FCO should be represented at the DCO meetings by its FR, other DCOs permit any farmer to be sent up as a representative of a FCO. A DCO may allow all water-users including drainage farmers to become members of its general body, while another may restrict membership in its general body only to the legal water-users (Kasyanathan 1986).

One of the main subjects discussed in all DCO meetings has been that of rehabilitation and the deficiencies observed by the users of the system. They often complained that the ID had not incorporated their suggestions in design plans even after such suggestions were accepted by the officials. Water rotation and uncooperative behaviour of some farmers were the other topics that were discussed at DCOs. The question of "reservation-farming" is another matter often brought up at DCO meetings.

A DCO serves as a forum where the farmers could organize themselves to present a common plan and to speak with one voice as at the *Kanna* (seasonal) meetings, Seventy-two percent of the farmers feel that DCOs strengthen the capacity of FCOs. Many farmers (64%) reported that they receive adequate briefings about the decisions of the DCOs from their FRs (Kasyanathan 1986).

Area Councils

ACs were envisaged to evolve from DCOs. When links between FCOs and the DCO were well developed, farmers take their unresolved problems at the DCO level to branch canal level assemblies. At present, each of the four areas of the GOIB, namely Uhana, Weeragoda, Gonagolla, and Paragahakelle is served by an AC. All the FRs attend the AC general meetings to discuss important issues such as severe droughts or flood damage.

Project Committee

The Government Agent's invitation in early 1982 for FRs to sit on the District Agricultural Committee created a fourth level of farmer organisation far in advance of the ARTI's expectations. However the formal GOLB Project Committee was formed only in June 1985. Ten FRs were chosen from all four ACs for the Committee; they were chosen from the Uhana (3), Gonagolla (3), Weeragoda (2), and Paragahakelle (2) areas. The Government Agent (GA) and the Deputy Director of Irrigation of Amparai had been invited to be the Chairman and Secretary of the Committee respectively. The district level heads of all the relevant departments are ex-officio members of the Project Committee. Thus the Committee has a total membership of about 15 Government officials and 10 FRs.

The main objective of the Project Committee is to involve farmers in policy discussions and to solve the problems which cannot be resolved by farmers and officials at lower levels. The Committee is expected to meet quarterly.

Scale of Farmer Organisations

The FOP in the GOLB had several phases of expansion. The first phase covered the pilot area of operation - 5,500 acres around Uhana (at the head of the system, which was to be rehabilitated first) and 1,700 acres around Gonagolla. In March and October 1983, two more areas totalling over 17,000 acres were brought into the FOP. In early 1984, the ARTI attempted to extend the FOP to the tail-end area of the GOLB. For this purpose, a total area of 19,400 acres from Mandur, Vellavelly, and Silakkody were selected. Twenty-six IOs, who could speak Tamil, were selected as nearly all the farmers in these areas were either Tamils or Muslims. However, 24 out of 26 IOs soon left the programme to become teachers and the FCOs were not established in these areas. Unsettled security conditions eventually led to the abandonment of the FCO activities in these areas. In 1985, Paragahakelle area was chosen for FCO activities.¹³

¹³Number of Field Channel Organisations in the GOLB at the end

Year	No of FCOs
1982	110
1983	132
1984	230
1985	380

Source: Kasyanathan (1986).