

IRRIGATION MANAGEMENT INSTITUTIONS IN SRI LANKA

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Institutional Landscape

With about 550,000 hectares of irrigated land, Sri Lanka is not one of the "Big Powers" of Asia in terms of irrigated area. But Sri Lanka has a surprisingly complex governmental institutional landscape. One is tempted to say it has more "irrigation institutions per hectare" than most countries. I refer here to agencies like the Irrigation Department, the family of agencies under the Mahaweli Authority of Sri Lanka (MASL), the Department of Agrarian Services, and the Irrigation Management Division. More recently, various provincial agencies have also been created making the landscape even more complex.

All of these agencies have overlapping and even at times competing responsibilities; and all have somewhat different strategies and approaches to irrigation management. These differences reflect the absence of an overall guiding policy of the Government, until recently. And in all cases the agencies are themselves evolving rapidly, in response to both policy shifts and the lack of success of previous management strategies.

Socio-Technical Nature of Irrigation

This article tries to outline some of these changes, and the likely implications for the future, i.e. by the year 2000. Irrigation management is best understood as a socio-technical process, i.e. a management process that combines

both technological and social processes (often referred to as "hardware" and "software"). Technologies are embedded in institutional framework through which they are manipulated to achieve objectives. Irrigation engineering is thus a necessary, but not sufficient component of irrigation management; management of irrigation systems is done by human beings and presumably for the benefit of human beings, but all these human beings have differing interests and perspectives. Thus, irrigation management is a sociological phenomenon as much as – or more than – it is a technical process.

Until recently many people held the view that irrigation is a purely technical field. This narrow perspective is a major cause of the inability, until recently to adapt to changing needs and demands in the management of irrigation schemes. The premise of this article would have seemed radical 10 years ago, but would now be accepted by most irrigation management professionals: in the socio-technical equation, the "socio" component is prior. By this is meant that if the institutions are ineffective, no amount of technological improvement is likely to improve performance significantly (though costs may be greatly increased). On the other hand, even if the technology is not the most advanced or perfect, if the institutions are effective, the maximum potential output from that technology can be achieved. Put more concretely, all the investments in modern irrigation technologies will achieve little if

the agencies responsible for their operation and maintenance are ineffective, inefficient, or simply not interested in O & M.

Changes Since 1980

Until about 1980, most engineers in the irrigation agencies of Sri Lanka were quite confident that they were fully in charge of their irrigation systems, that they knew all the answers, and that they were doing an excellent job. They spoke about management of systems right to the head of each field channel. Among engineers, the nearly universal analysis of problems faced in managing irrigation systems was that the farmers were at fault. Farmer "indiscipline" was usually seen as the major cause of all problems. The solution, *ipso facto*, was seen as enforcing laws to punish farmers for non-cooperation. All the talk of "farmers participation" was seen as impractical and unrealistic in the absence of firm discipline legally enforced, combined perhaps with "education" of farmers allegedly too ignorant to understand the need for discipline. Many engineers also claimed – correctly – that "political interference" and insufficient O & M funds further reduced their effectiveness.

Farmers, of course, had quite different views. They usually pointed out what they considered very unreliable and unpredictable water deliveries, very poor maintenance of systems, alleged malpractices by irrigation staff, and a tendency of respond to people with political connections at others' expense. Those farmers able to obtain politicians' assistance justified this by noting that they had no recourse in order to get water for their crops from agencies that did not "care" about them.

It is fair to say that all parties were at an impasse, unable to make progress to escape the cycle of mutual recriminations. There were no institutionalized mechanisms for farmers and system managers to come together and arrive at agreements. Many outside analysts were pessimistic about the possibilities of change; Dr Mick Moore published a number of articles critical of the Irrigation Department that were pessimistic about changes occurring in the near future.

But it is equally fair to say that there has been a revolution in thinking and attitudes of Sri Lankan irrigation professionals during the past decade. The government has adopted a "participatory management" policy in the irrigation sector. Even the most "hard boiled" of irrigation engineers has accepted the need to work with well-organized farmers, organizations in a system of "joint management" of irrigation systems. The tremendous change in attitudes and thinking is reflected in various proposals for reforming the agencies to make them more effective at O & M (IIMI - Sri Lanka Consultative Committee 1990). And if the above comments have suggested that irrigation engineers have been part of the problem, during the past decade they have played a key role in bringing about the changes now underway.

This revolution in thinking has identified four important gaps: the management gap, the human resource gap, the financial resource gap, and the policy gap. The management gap is the result of the irrigation institutions not having evolved quickly enough; the human resources gap is because even with a dramatic increase in training the opportunities for developing new professional skills are still inadequate; the resource gap is the result of declining real allocations for O & M combined in recent years with a squeeze on farmers' profits; and finally, while encourage experimentation and testing of new ideas, policy makers have not moved quickly enough to provide firm directions for the future.

Sources of Change

How has this "revolution" in thinking occurred? In the space of this short article, the whole fascinating story cannot be told. Overall, it is a unique case of the influence of a set of experiments, applied research, imaginative individual leadership, effective consultancies, and assistance from outside that supported indigenous efforts. A few key experiments can be highlighted here.

One very important strand of experiments is purely indigenous, with no outside assistance. Two important examples are the "Kimbulwana case" and

the "Minipe case." In Kimbulwana scheme, located in Kurunegala District, a dedicated technical assistant, Mr A. M. S. Gunadasa, decided that without farmer involvement, an IRDP-funded rehabilitation project was not likely to have a lasting impact. He therefore motivated the farmers to form committees and get involved in the improvements of the system, and its subsequent operation and maintenance. He was successful in assisting farmers to improve the equity, efficiency and reliability of water deliveries, and thus improve cropping intensity and yields. Perhaps more important, he assisted farmers to set up a management system in which farmers continue to take the primary responsibility for system operation, and are maintaining the entire system including the main system.

In Minipe another dedicated Irrigation Department employee, then Deputy Director of Irrigation for Kandy range, implemented a committee system for improving the maintenance and water management in Minipe scheme. This experiment, led by Mr N. G. R de Silva, has been a specific source of a number of the management principles now used in major schemes. But at the time, the Director of Irrigation did not fully support this effort. Mr de Silva, author of another paper in this issue of the *Economic Review*, later became Director and State Secretary for Irrigation himself, and has had a profound influence on the thinking about irrigation management in Sri Lanka.

Another strand of experiments exemplifies cooperation between local and international specialists, with assistance from an external donor (USAID). Begun officially in 1979, the Gal Oya Water Management Project has had a tremendous impact not only in Sri Lanka but beyond. The original concept of this project was focused on rehabilitating the Gal Oya left banks system, but the package included a large training component, technical assistance, research, and experiments with farmers' organizations. This author is one of many that gained a lot of experience through participation in this project, which evolved from a primarily construction-oriented effort, to one focused more seriously on

institution-building. Among other lessons from this project, came a tested methodology for assisting farmers to organize effectively using "institutional organizers" (IOs) as catalysts of the process; a methodology for implementing rehabilitation of the physical system in a cost-effective and participatory manner (called "pragmatic rehabilitation", and an organization design for joint management of irrigation schemes.

This organizational design, now generally accepted and being implemented in many major schemes under the INMAS programme, consists of an informal "primary group" at field channel level as the foundation. This group chooses a representative (not "leader") to represent their interests on a distributary canal organization. This is a formal farmer organization which invites officials to meetings as needed. Representatives from the distributary groups in turn are members of a project management committee. This is a joint committee of farmer representatives and officials, on which farmers are to be in the majority.

The INMAS programme, which is implemented by the Irrigation Management Division on 35 major schemes managed by the Irrigation Department, was the first officially approved programme to improve management of irrigation schemes with very low investments through the joint efforts of farmers and Government. It now provides a source of lessons and a model for future expansion of the joint management concept.

A more recent project funded by the same donor as the Gal Oya project has been building on the previous experience in the four major schemes in Polonnaruwa, and on the INMAS experience. The Irrigation Systems Management Project has the objective of establishing a sustainable management system on these schemes. Use of IOs to form farmers' organizations, and pragmatic rehabilitation, with much of the work carried out by distributary organizations under contracts are key components. This project has also introduced the concept of a project-level farmers' organization, parallel to the project management committee.

These and other efforts have begun to have a major influence on government policy in the irrigation sector. It is fair to say that the presence of the International Irrigation Management Institute's international headquarters in Sri Lanka has helped catalyze this process. From 1988, the previous policy of supporting experimentation was modified to adopt an explicit "participatory management" policy. The major objective of this policy is to establish strong responsible farmers' organizations which would take increasing responsibility for management of systems, through "joint" management with the Irrigation Department on larger schemes, and full farmer-management of smaller schemes.

More recently, with USAID support, the government has been implementing an Irrigation Management Policy Support Activity (IMPISA). This is described elsewhere in this issue of the *Economic Review*. It is sufficient to say that by the end of 1991, it is intended that through this Activity, the Government will have a firm basis for effective implementation of its participatory management policy.

An important factor in this whole process is the question of resource mobilization, or to put it more baldly, who is going to pay for O & M? The Government has in principle accepted that farmers should pay for O & M but not capital costs for construction. In the mid-1980s there was an attempt to induce farmers to pay irrigation service fees, which collapsed by the late 1980s for various reasons. The present approach involves inducing farmers to take direct O & M responsibility for small systems, and distributaries on larger systems, with government continuing to pay for "main system" O & M as well as rehabilitation. While some other countries use farmers' organizations as a means to get farmers to pay fees (for example Philippines), Sri Lanka is using institutional reform as a substitute for inducing farmers to pay fees to the government.

Future Directions

This article has discussed recent changes and trends in the irrigated agricultural sector, with an emphasis on institutional reform. What are the likely

future directions? What will the institutional landscape look like in the year 2000? Here is the scenario that this author envisions as possible. If there is a strong commitment to continue building on and consolidating the lessons learned to date, and particularly if more emphasis is placed on effective implementation.

First, at the national level the institutional landscape will be simpler. There will be a single irrigation management support agency, that will evolve from the present Irrigation Department, and incorporate certain components of other agencies such as MASL. This agency will be responsible for overall management of the major river basin systems and inter-basin systems such as the Mahaweli, Gal Oya, etc. More important, it will be an interdisciplinary and highly skilled agency dedicated to providing technical and management support services to both the provincial irrigation agencies, and to farmers' organizations.

Second, at the level of irrigation systems, most small and medium-size irrigation systems will be entirely managed by legally recognized, strong, responsible, active farmers' organizations. The form these organizations will take remains to be seen, but they would be most effective if they are special corporations owned by the farmers cultivating on a particular scheme through a shareholding system. Not only would these organizations be fully responsible for system O & M and planning system improvements and modernization, but they may also choose to get into other supporting businesses such as input supplies and marketing of produce.

On larger schemes, the country will be moving toward a system of management through farmer corporations as well, with technical advice and assistance from the provincial or national irrigation management support agencies. By the year 2000, Sri Lanka will be experimenting with these kinds of arrangements. Such corporations are likely to employ the technical staff required, and also to play important roles in providing other agricultural support services.

Third, and supportive of these changes, the Government will have taken steps to encourage more crop diversification with an emphasis on high-value crops, as a supplement to growing rice, and improving access of farmers to reasonably priced credit. The private sector as well as farmer-corporations and cooperatives will need to play a big role in the future modernization of Sri Lankan agriculture. This will be possible, ultimately, only if the country succeeds in expanding and diversifying its industrial and service sectors.

Conclusion

Returning now to the "socio-technical" nature of irrigation management, this paper sees the development in the 1980s and 1990s as setting the institutional and policy stage for the future modernization of Sri Lankan irrigated agriculture. Up to the early 1980s investment was directed primarily at creating irrigation infrastructure in order to produce more rice. Since then, the emphasis has shifted to institutional and policy reform. If the country is to achieve its long term development objectives, the whole economy must grow and diversify, and absorb increasing amounts of labor in the industrial and service sectors. And the agricultural sector must also modernize and diversify, so that while a decreasing proportion of the population is engaged in agriculture directly, the profitability of agriculture for farmers increases. Technological innovations, in the form of more efficient and demand-driven water control technologies and new cropping packages, for example, will be necessary to achieve these objectives in the long term.

But in order to use these new technologies effectively, the institutions and policies must be in place. If by the year 2000 the country can implement these important institutional and policy reforms, Sri Lankan farmers will be well-placed to become prosperous contributors to the further development of the Sri Lankan economy.

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