

IIMI'S EXPERIENCE IN BANGLADESH IN STRENGTHENING NATIONAL CAPACITY

INTRODUCTION

IIMI has had a program in Bangladesh since late 1988. While this program has included only one resident international staff member, there have been numerous inputs from other international staff representing a number of disciplines. IIMI has been able to work with several of the agencies and institutes which are, to some extent, involved with irrigation.

This paper describes the experience of IIMI--Bangladesh in regards to its objective of strengthening national capacity for irrigation management within the country. This objective has been oriented both toward irrigation management agencies and toward research organizations.

CONTEXT

General: Bangladesh is a densely populated nation located primarily on the combined delta of the Ganges, Brahmaputra and Meghna rivers. With its population growing at more than 2.4 percent per year the country has had difficulty in attaining its goal of self-sufficiency in food production. Programs to increase agricultural production, therefore, have a high priority in Bangladesh. Issues of equity and rural employment have also raised great concern as there are huge absolute numbers of rural poor --- primarily landless workers and farmers with very small holdings.

Irrigation: As virtually all cultivable land in Bangladesh is already in use, future increases in agricultural output must entail increasing yields per hectare, increasing cropping intensity or both. Each will require more and better-managed irrigation. Today, roughly a third of cultivated land is irrigated to some extent. Only about 7 percent of that irrigated land is served by major canal systems. An additional 13 percent utilizes manual and traditional techniques while the remaining 80 percent is served by motor-driven deep tubewells (DTWs), shallow tubewells (STWs) and low lift pumps (LLPs drawing from surface water sources). There is a great potential for further irrigation coverage, particularly through additional groundwater exploitation. The National Water Plan estimates that 75 percent of cultivable land could be irrigated.

Irrigation Agencies: Irrigation in Bangladesh differs from that in most other countries in that it depends so heavily on small-scale technologies such as STW, DTW, LLP and manual/traditional modes of water lifting. The management of these small-scale systems (of which there are hundreds of thousands) is, of necessity, non-centralized and each pump system is, formally or informally, autonomous. As a result, there is no centralized agency with both the mandate and the tools to manage the minor (non-canal) irrigation sector as we might find for canal systems in countries where irrigation is dominated by large surface schemes. Several agencies in Bangladesh each provide a variety of irrigation support services in the minor irrigation sector. Such support services have the potential (at present largely unfulfilled) for making a significant difference in the performance of the sector. The coordination and reform of these support activities, however, pose difficulties that are quite different from those encountered where large canals predominate and where there is, therefore, a centralized irrigation authority.

The various government agencies which deal, in part, with irrigation include:

The Bangladesh Water Development Board. BWDB is a descendent of WAPDA (the Water and Power Development Authority of Pakistan) and manages the large canal schemes. A large proportion of BWDB's activities, however, center on the construction of flood control and drainage infrastructure rather than on irrigation activities. Despite this focus and the fact that BWDB's surface irrigation schemes comprise only a very small fraction of total irrigation coverage in the country, this organization is closer to what is usually thought of (in other countries) as an irrigation agency than are any of the other government organizations involved with irrigation in Bangladesh.

The Bangladesh Agricultural Development Corporation. BADC has, in the recent past, had primary responsibility for the distribution and installation of deep tubewells (and, to a lesser extent, shallow tubewells and low-lift pumps) around the country. This irrigation hardware function is now in the process of being shifted to the private sector and BADC is attempting to find a suitable niche for itself in the provision of other irrigation support services. There is some question as to the future of this public corporation as its new activities must not only be approved by the Government but must also attract donor support (given the nature of development finance in Bangladesh).

The Bangladesh Rural Development Board. BRDB controls a form of rural cooperatives known as KSS. Many individual KSSs have taken out loans to purchase tubewells (primarily the larger deep tubewells) as part of their functions. As the KSSs tend to be village-based (rather than irrigation command area based) many farmers cultivating land within the tubewell command area are excluded from membership. For this and other reasons the KSSs have seldom become very effective irrigation management organizations.

The Directorate of Agricultural Extension. DAE has country-wide general agricultural extension responsibilities. Irrigation has not been a particular focus or strength of DAE. This is partly due to the fact that the BWDB, in its canal schemes, has had a separate irrigation extension service. Talk of merging the BWDB extension service with DAE has not yet resulted in a unification. At present there seems to be interest in strengthening the ability of DAE to deal more effectively with irrigation issues, particularly in relation to diversified crops.

In addition to these government agencies there are also a number of non-governmental organizations (NGOs) which have been active in irrigation. These NGO's primarily work with small groups who operate tubewells or surface-water pumps.

Irrigation Management Research: The government agencies which deal with irrigation in Bangladesh have generally not had research wings. There are, however, several universities and agricultural institutes which have been involved in irrigation-oriented research. BAU (Bangladesh Agricultural University), BUET (Bangladesh University of Engineering and Technology), BARI

(Bangladesh Agricultural Research Institute), BRRI (Bangladesh Rice Research Institute), BIDS (Bangladesh Institute of Development Studies) and RDA-Bogra (Rural Development Academy at Bogra) are a few of the organizations involved. The Bangladesh Agricultural Research Council (BARC) is in a position to try to coordinate research efforts in many of these universities and institutes. A great deal of the research to date has been in relation either to on-farm irrigation issues or to the technology of water lifting and/or delivery. Water-user groups and water markets have received a smaller amount of attention --- and many policy issues and the management aspects of irrigation agencies have been mostly ignored. Given the nature of the pre-dominant, decentralized irrigation technology in Bangladesh and the current government moves to privatize irrigation, there is an obvious need for research focussing on how the performance of privatized irrigation can be improved.

IIMI-BANGLADESH PROGRAM

Intitutional Linkages

Memorandum of Understanding: IIMI's activities in Bangladesh take place under a memoranudum of understanding (MOU) with the Government through the Bangladesh Agricultural Research Council (BARC). This MOU enables IIMI to work directly with the several institutional actors in the irrigation sector.

Consultative Committee: IIMI's Consultative Committee is chaired by the Executive Vice Chairman of BARC and includes representatives from the Ministry of Agriculture, the Ministry of Irrigation, Flood Control and Drainage, BWDB, BADC, BRDB, DAE, BRRI, BAU, BUET, Rajshahi University and the Bangladesh Institute of Development Studies (BIDS) in addition to BARC. At Consultative Committee meetings past IIMI activities are reviewed and guidelines for IIMI's future program activities are discussed and approved.

Finances for Activities: The Ford Foundation has provided funds for program development and a portion of activity support for the first few years of the existence of IIMI-Bangladesh. Additional research funds have come from the Rockefeller Foundation. The Asian Development Bank will be financing a minor-irrigation privatization study in the near future. Support for Bangladeshi participation in IIMI-organized international workshops and networks has come from a variety of donors through IIMI headquarters.

Activities

Field Research

IIMI-Bangladesh's involvement in field research has taken various forms. From early 1989 until late 1991 the major field work took place as part of a joint IIMI/IRRI project in collaboration with BRRI and certain project offices of BWDB and BADC. For this work IIMI employed its own field research staff (10-12 persons) who worked with a team of BRRI researchers. Major responsibility for some study topics fell to IIMI while other topics were primarily dealt with by BRRI. Planning and research design for all topics, however, were done in

consultation between the two institute's teams and both research teams worked together to gather information at some of the research sites. Line agency staff from both BWDB and BADC were involved (to varying degrees) in planning and implementing certain aspects of the studies --- particularly for those topics which could be termed action research.

Another form of involvement in field research was demonstrated by IIMI-Bangladesh's work with BUET and BWDB on those organizations' pilot project to improve management of BWDB's projects. IIMI's major input to this research project was through a workshop in which initial data inputs were appraised and in which an action research phase of implementing possible management innovations was planned.

A planned study on privatization of the minor irrigation sector will utilize yet a third method of field research involvement. IIMI-Bangladesh will work in collaboration with the policy planning wing of the Ministry of Agriculture. The actual field work will be done by a contracted team of national researchers. IIMI will be heavily involved in the design and analysis phases of the work and will have responsibility for monitoring the field work. A related type of involvement is in the process of implementation for two smaller studies --- one examining the Grameen Bank's irrigation program and the other looking at issues relating to women and irrigation. For both these studies IIMI staff will be collaborating on research design with the national researcher who will be contracted to do the study.

Dialogue and Consultation

An activity with BADC involving IIMI's training personnel has included a great deal of dialogue and consultation with the agency in regards to BADC's changing role in a more privatized environment. A series of workshops with twenty of the top managers of the organization have aimed at facilitating BADC's group thinking about future roles, transitional issues and strategic planning. In these exercises the IIMI team was not attempting to advise the agency on what it should do. Rather, IIMI's staff attempted to use structured group discussion techniques and the presentation (and practice) of planning methodologies to aid the agency officers in their own development of agency objectives and plans.

On a less formal basis there have been numerous opportunities for consultation between IIMI-Bangladesh staff and both research and line agency personnel. Such consultation has ranged from discussing research designs and/or results to talking about plans for implementing changes in agency projects.

Professional Development

IIMI-Bangladesh has provided guidance and feed-back to a few national researchers working on their Masters or Doctoral degrees. In a few cases where the students' topics fit well with IIMI's own research involvement some basic financial support has been possible.

Several of the persons who were involved in IIMI's field research have now gone on to work with various irrigation organizations which can utilize their developed skills. In one instance IIMI has been able to work with a researcher deputed to the IIMI office from one of the national institutes.

IIMI's training division has worked with BADC officers on training needs assessment exercises and the planning of human resource development for the agency. It was this training function which brought about IIMI's involvement with BADC's overall planning for change.

Researchers and irrigation agency officers have been sent by IIMI to various international workshops. BRRI and BAU researchers as well as officers of BWDB, BADC and RAKUB (Rajshahi agricultural bank) have been included in these activities. In addition, IIMI has organized various workshops within Bangladesh which have been well attended by both researchers and line agency officers alike. IIMI staff also regularly participate in workshops and training sessions put on by other organizations.

RESULTS OF STRENGTHENING NATIONAL CAPACITY

Strengthening National Capacity to Manage Irrigation Systems

Research

The IIMI/IRRI research project involved some level of involvement of BWDB and BADC agency staff. It is hard to judge what effect that involvement may have had on those officers' ability to manage their irrigation systems. At the institutional and project level there has been no evidence of these agencies adopting an internal research component to their management systems. As for the adoption of research findings, BWDB in its Ganges-Kobadak irrigation system did participate in a rotation experiment on one of the secondary canals during 1990 and on three more during 1991. This action research demonstrated how irrigated area could be increased through the application of some simple management techniques. The agency also made some progress in repeating the experiment without IIMI or BRRI assistance on a fourth secondary canal in 1991. Neither IIMI nor BRRI have been working in the G-K project in 1992. However, some aspects of the rotation scheme have been spread to other secondaries. Whether or not this has been due primarily to IIMI's work is difficult to tell in that an international consulting group has taken up work on irrigation management aspects of the G-K project during the past year. The IIMI work in the project has probably at least made the project staff a bit more appreciative of the potential effectiveness of some non-hardware management approaches.

IIMI's workshop with BUET and BWDB did succeed in greatly enhancing the interaction between BUET researchers and BWDB project staff through the use of small-group discussions about the opportunities and constraints facing each of the irrigation projects under study. IIMI's input was instrumental in leading the workshop participants to define the management objectives of the various projects and to enumerate the possible management innovations that might be implemented during a second phase of the joint research project. Unfortunately,

BUET and BWDB have delayed starting this second phase. As a result, none of the discussed management changes have been put into practice.

Dialogue and Consultation

IIMI's work with BADC on the changing role of the agency in a privatizing environment would appear to have had some effect on the way BADC is approaching its transition. For example, management is adopting many aspects of the strategic planning methodology IIMI's team introduced in a recent workshop. The full series of workshops held over the past one and a half years seems to have facilitated the process of senior managers thinking and working together in dealing with what BADC will do in the future. Whether or not these managers will succeed in devising a plan that will be acceptable to the Government and attractive to donors remains to be seen. That success will certainly partly depend on how well the agency managers are able to plan and put forward their case --- and their ability may well have been affected by IIMI's efforts. There are, however, major factors external to BADC which will also affect whether or not the Government and donors accept the agency's plan.

Professional Development

It is as yet too early to assess the effect of IIMI's training work with BADC on professional development within that agency. At present, the IIMI/BADC training cycle has only been partly completed.

The participation of irrigation management agency personnel in IIMI workshops (both in Bangladesh and abroad) has often resulted in a quite lively dialogue. Whether this participation has so far resulted in actual management changes is doubtful. Many of the agencies and NGOs have, however, become increasingly open to IIMI over the past four years and this openness is likely to lead to improved collaboration in the future. Workshop participation, by involving more management officers than have IIMI/agency dialogue and research, has probably had a positive effect upon this growing openness.

Strengthening National Capacity of Research Institutions

Research

The joint research between IIMI and BRRI on the IIMI/IRRI project did bring researchers from BRRI's Irrigation and Water Management (IWM) division into close contact with IIMI's research team. BRRI's IWM staff was dominated by engineers while the IIMI team had more of a focus on socio-economic aspects of management. It is possible (though hard to judge) that the experience of the collaborative research had the effect of expanding the perspective of some of the BRRI researchers. As for the general research capacity of the IWM division, the picture is clouded by the fact that the dominant researcher and leader in that department has since left BRRI.

Dialogue, Consultation and Professional Development

Of IIMI's field research officers during the IIMI/IRRI project, three have since gone on to work on MSc degrees. One of those three has completed his degree (with IIMI thesis support) and has recently taken an irrigation-oriented job with a non-governmental organization. Another is presently working on his thesis in the Ganges Kobadak system (again with IIMI support) and the third is doing his coursework. Two other former field research officers have gone directly to work with NGOs. The research leader for the IIMI part of the IIMI/IRRI project is still on deputation to IIMI from RDA-Bogra and is working on new issues. He has completed his PhD dissertation in economics with Rajshahi University during his time with IIMI.

During the IIMI/IRRI project there were attempts to attract MSc students from BAU to do their thesis research within the project. This did not work out given some of the University's timing constraints for preparing theses. Those constraints did not happen to fit the relevant irrigation season in the field. However, a few graduate students have sought IIMI staff members' reactions to their research methodologies and analyses.

Through informal exchanges as well as workshop interactions there has been a fair amount of dialogue between university/institute research staff and IIMI in regards to research papers or projects those staff members have been working on. The effect of this kind of dialogue and consultation would be difficult to assess.

ANALYSIS AND CONCLUSIONS

Strengthening National Capacity for Irrigation Management

As with many other countries in which IIMI works there are a number of constraints to strengthening irrigation management capacity within the government agencies. Managerial changes in entrenched bureaucracies are hard to implement. Irrigation management itself is not a high priority given many agencies' perception of their own role and objectives. Also, there is sometimes a narrow and rigid view (within the agencies) of the nation's irrigation system and its problems --- a view dominated by technical and hardware issues. In Bangladesh there is an additional constraint given the diffuse and somewhat incomplete nature of government activities in support of the predominating minor irrigation sector. This lack of focus within the sector controlling 80 percent of all irrigation in the country makes it difficult to launch a concerted effort to improve irrigation management. Accountability for results is missing to an even greater degree than might be found in countries with more centralized irrigation organizations.

Within particular agencies and projects IIMI's work would seem to have had some positive, if very modest, effect. As in other countries, it does take time to build up credibility and acceptance. Continued involvement with the various agencies should increase IIMI's ability to affect national capacity for irrigation management.

Strengthening National Capacity of Research Institutions

Bangladesh does have a few very capable researchers who work in the area of irrigation. These researchers are scattered between a number of institutes and universities so most are somewhat isolated and do not belong to a strong research team. Research leadership is a problem in many of the institutions. Within this context the effect of IIMI's work can hardly be assessed. Some individual researchers have benefited from contact with IIMI --- but to significantly affect the national capacity of research institutions there may have to be a concerted program to try to increase the number of well trained researchers.