

IIMI-INDIA PROGRAM

EXPERIENCE IN STRENGTHENING NATIONAL CAPACITY

1. INTRODUCTION

IIMI-India program is a non-resident program, the first of its kind to be tried by IIMI as a model for field operation. IIMI and WAPCOS, a Government of India undertaking signed a Memorandum of Agreement (MOA) on 5 January, 1989 for co-operation between IIMI and India in research and training in irrigation management. The co-operation relates to exchange of visits by scientists, technologists, engineers, administrators and experts; collaboration in research and training activities; and exchange of scientific literature and information.

The principal objective of IIMI's current collaborative program is to strengthen the capacity of selected Indian institutions to carry out interdisciplinary management research and contribute to improved irrigation performance; IIMI's mission in India can be interpreted as a sustained, international and collaborative effort to bring the benefits of the current worldwide 'managerial revolution' to irrigated agriculture.

2. CONTEXT

2.1 Irrigation in India

India is one of the most important countries in the world in terms of irrigated cropped area, with 71 million hectares (ha) (potential created 79 million ha) and a predicted expansion of 1.5 to 2.0 million ha/year. The expansion and improvement of irrigation facilities set in motion since India's independence in 1947 still continues to be the key ingredient of agricultural and rural development programs. While much has been achieved by way of construction, there has been a serious gap between the expected increase in agricultural production from these developments and the actual realization. To close this

gap, efforts have been made in the past, through technological innovations to achieve the overall goal of improving and sustaining irrigation performance. However, there has been less attention given to managerial innovations, mainly main system management and conjunctive use management of surface- and ground-water. Institutional, organizational, financial and policy issues relevant to effective management, participatory- and joint-management, and monitoring and performance evaluation of irrigation systems have not yet been fully addressed.

Irrigation management, both in the technical aspects of improved water-use efficiency through better planning and improving operational procedures, as well as in the areas of change in management organizations, decision-making processes and promotion of water users' association will, have an important place in the strategy for improving performance.

It is in these areas that IIMI intends to play a useful catalytic role in inducing procedural and policy changes in collaboration with national policy makers and irrigation management agencies.

2.2. Irrigation Institutions

Water Resources Management in India has been traditionally a State subject, meaning that it falls within the jurisdiction of each of the 22 individual Indian states. By the constitutional arrangement, however, the central government is responsible for nationwide water resources management and development.

The irrigation institutions vary from state to state; however, it can be said that there are four major organizations which are directly involved in irrigation management: the state irrigation department for surface water; the groundwater organization and private tubewell owners for groundwater; the command area development authority and/or the Department of Agriculture for input supply and extension; and the farmers/farmer organizations. One of the major problems experienced in effectively managing an irrigation system is the unco-ordinated on-going activities of these four major actors.

Irrigation management remains exclusively handled by a government structure that has changed little over many decades and institutional capabilities have declined as a result of limited adaptation and increasing encroachment of political and rent-seeking pressures on sector managers.

Irrigation sector relies much less on farmer and local community initiatives, autonomous bodies for scheme management and involvement of private entrepreneurs, consultants and other non-governmental organizations than many other countries, while they have proven to be a source of vitality and support. The two largest opportunities for private investment in India are in groundwater development and development of micro-networks for surface irrigation.

2.3. Irrigation Research

India has extensive research activities in water resources development, a large number of high calibre scientists, and a well institutionalized research organizations. Water resources development and research activities in India are carried out by:

- i. three national institutes;
- ii. sixteen state research institutes; and
- iii. about 50 universities and educational institutes.

Irrigation and drainage are two of the more important activities in water resources development in India. The on-going research activities on irrigation and drainage carried out in India are primarily co-ordinated and disseminated by the Central Board of Irrigation and Power (CBIP) and the Indian National Committee for Irrigation and Drainage (INCID).

The research in these areas deals primarily with structural aspects of storage on diversion dams and other large structures on the one hand and with irrigation agronomy on the other; but little research has been done on management of the distribution system or the interface between the irrigation and agricultural sub-systems. Only recently some institutes have initiated research

on performance assessment of irrigation and drainage systems using diagnostic approach.

India may not be benefitting as much as it should from the substantial investments made in research activities. Some of the problems lies in the lack of linkages between the research programs and the problem faced in the field in water distribution between the source and the crops, and in the lack of linkages between research and line agencies in charge of design, construction and operation. A possible reason for the low interest of Indian scientists and researchers for field issues may be in their reward system which is based on a number of publications and not on the successful transfer of their findings in improving performance efficiency or production. There is also insufficient co-ordination and inter-disciplinary approach in irrigation management research activities between engineers and other scientists involved in irrigated agriculture.

3. IIMI's PROGRAM IN INDIA

IIMI-India program focussed its initial activities in institutional development goals for improving national capacity to carry out irrigation management research.

An attempt is made to describe the activity undertaken in the following six classes:

- collaborative research;
- training program for institutions;
- training program for individuals;
- conference, seminars and workshops;
- consultation and dialogue with irrigation managers and policy makers (organizational and management counselling);
- dissemination of information.

3.1. Collaborative Research

Under the IIMI-India program, the four research projects in the states of Tamilnadu, Gujarat, Uttar Pradesh and Bihar were undertaken under a collaborative mode by clustering one academic institution to work with one training institute and together with the implementing agencies in each state. In these activities, all the work is done by the national researchers with guidance and help from IIMI and in collaboration with national agencies managing the irrigation systems. This practice of starting the program at the field level has helped to establish close relationships with irrigation practitioners which will then help to move on to the agency and policy level to resolve issues arising from field research.

This process and sequence has helped to:

- i. improve the capacities of the national institutions to undertake action oriented field management research in irrigation management, with an inter-disciplinary team, a type of research which has not been very much attempted in the past in India.
- ii. obtain practical and implementable research results which are useful to the state irrigation sector and some of which have applications elsewhere.

3.2. Training Programs for Institutions

IIMI's training program in India is part of its research projects. Training was provided to research officers working in Bihar, Uttar Pradesh and Tamilnadu for field data collection, and social science and management research methodology. The training program lasted for a week in each state.

3.3. Training for Individuals

In addition to training programs aimed at strengthening irrigation institutions, IIMI-India program offered training for individuals whose purpose is to strengthen Indian national capacity in irrigation management research.

In Tamilnadu, one of the members of the collaborative research team from Anna University visited IIMI headquarters to be an observer in the survey on organizational dynamics conducted by the IIMI management specialist. A part of this methodology was used by the researcher in his study back home. In addition, two of the researchers working in Tamilnadu have registered for their Ph.D programme and might use part of the research results for their Ph.D work.

In Gujarat, an Indian student doing his Ph.D at the University of Illinois was offered a fellowship from December 1991 to 30 June 1992 to work with our Gujarat collaborators in the Mahi-Kadana system. While our collaborating institutions were looking at a number of issues in regard to performance at the main system level, the Indian Ph.D student was asked to examine the relationships between equity-efficiency trade-offs, with an idea of using the findings to suggest alternative management strategies. The study is very complementary to the work being done by WALMI on water deliveries, and IRMA on management processes, as he is collecting data on a sample basis from farm and plot levels as well.

In Uttar Pradesh, the Water Resources Development and Training Centre (WRDTC) of Roorkee University is using this collaborative research project as a means to train post-graduate diploma students to do their field work as a part of their academic curriculum. So far, they have fielded five students to carry out research on different aspects of conjunctive use management in the Madhya Ganga project.

Study Visits: Under the IIMI-India program, a ten-day study tour of seven Indian professionals including policy-makers to Sri Lanka was arranged in May 1992. The purpose of the study tour is: to visit IIMI to meet the IIMI International staff and to learn about IIMI's work in other parts of the world; to study IIMI's field research techniques at Kirindi Oya, a water-short system; to study Sri Lanka farmer participation programs and transfer of management and financial responsibility for the distributary and below of all major schemes to farmer organization; and to learn about Irrigation Management Support Activities being formulated by IIMI/SLFO in close association with local national experts under an USAID-funded project.

3.4. Conferences, Seminar and Workshops

IIMI-India program adopted a participatory approach for detailed research proposal preparation. First, IIMI fielded exploratory missions to identify clusters of institutions in the various states of India for undertaking collaborative research. Subsequently IIMI senior staff members visited these collaborating institutions and met the project team leaders and seniors officials of the relevant implementing agencies. Based on these interactions, the collaborating institutions prepared preliminary draft proposals for discussion during a workshop (February, 1990) at IIMI Headquarters. Fifteen participants (collaborating institutions, co-ordinating committee members and donor representatives) attended this workshop.

A second workshop was held at IRMA, Anand in May 1990 wherein 28 participants attended the workshop to finalize the research proposals and to obtain the co-ordinating committee's approval.

A third workshop in February 1992 was conducted in New Delhi with the following main objectives:

- i. to discuss the interim research results obtained under the IIMI-India collaborative research projects;
- ii. to expose Indian irrigation professionals to IIMI's research results from other countries which are relevant to Indian conditions;
- iii. to identify research areas where IIMI could profitably strengthen the Indian national organizations in improving the performance of irrigation systems; and
- iv. to exchange experiences and ideas among practicing professionals, policy makers and researchers on irrigation management.

About 35 participants including irrigation professionals, researchers, policy makers, planners and donor representatives from India and IIMI scientists

attended this two-day workshop. This workshop provided a good forum to demonstrate the utility of field-oriented action research for improving irrigation system performance and to exchange views and ideas on interdisciplinary research.

3.5. Consultation and Dialogue with Irrigation Managers and Policy Makers

Whenever IIMI scientists visit India, it has always been a policy to try to meet policy-makers and important irrigation professionals (both at the state and at the centre) and donor agencies to have informal exchange of ideas and to bring to their attention about IIMI's programme in India.

Some of the important meetings arranged for interacting with IIMI scientists are:

- i. Meeting with Chairman and members of Sardar Sarovar (Nigam) Ltd., at Ahmedabad to discuss IIMI's interactions with that organization.
- ii. Meeting with Indian professionals at the plenary session of the workshop held in February 1992 at New Delhi to obtain their views about IIMI's future activities in India.
- iii. Meeting with members of the Second Irrigation Commission of Bihar, India to discuss policy-related issues for improving irrigation performance in the state of Bihar.
- iv. Meeting with donor and funding agencies such as USAID, Ford, World Bank, ICAR, CWC, etc. for possible funding for further studies under the IIMI-India program.

3.6. Dissemination of Information

The following activities are undertaken:

- i. The IIMI Review, March 1990, presented a special issue on Irrigation in India, with comments on the progress in food production, training, groundwater and poverty alleviation, and water markets.
- ii. IMPSA policy papers prepared in Sri Lanka were distributed to about 30 Indian professionals for their perusal and comments. There was tremendous response to this type of activity. The Indian professionals have requested IIMI to get further policy papers arising out of this project.
- iii. Arrangements have been made to have inter-library exchanges with a number of research institutions both government and non-government. Also two workshops were conducted by the IIMI librarian under the WRM&T project to disseminate the use of IMIN data base programme to a set of Indian professionals.