

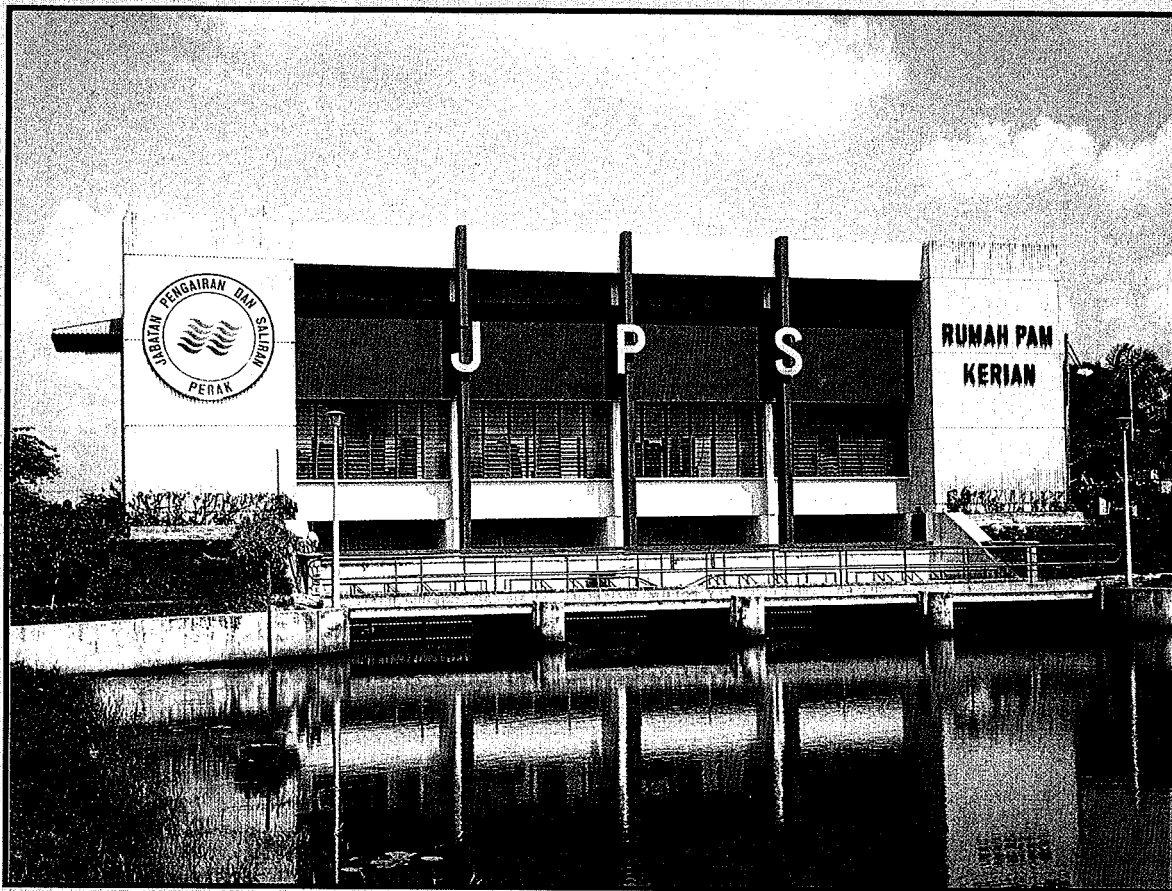


REVIEW

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INSTITUTIONAL DEVELOPMENT PROGRAMS



INTERNATIONAL IRRIGATION MANAGEMENT INSTITUTE

CALENDAR OF EVENTS

JUNE

- 21 June – 09 July — DSE/IIMI Workshop on Diagnosing Training Needs and Designing Training Programs for Irrigation Management in Indonesia, Yogyakarta, Indonesia
- 28 June – 06 July — 61st Meeting of the Technical Advisory Committee (TAC) of the CGIAR, Colombo, Sri Lanka

JULY

- 12 – 30 July — DSE/IIMI Workshop on Planning, Monitoring and Evaluation of Irrigation Performance, Baguio City, Philippines

AUGUST

- 23 Aug. – 10 Sept. — Mid-Term evaluation of Irrigation Management Project, Burkina Faso

OCTOBER

- 18 – 22 October — 62nd Meeting of the Technical Advisory Committee (TAC) of the CGIAR, Washington, USA
- 25 – 29 October — International Centers Week of the CGIAR, Washington, USA

NOVEMBER

- 29 November – 01 December — Internal Program Review, Colombo, Sri Lanka

DECEMBER

- 03 – 05 — IIMI's Board of Governors Meetings, Colombo, Sri Lanka
- 06 – 18 — Le Management de l'Irrigation (co-organizer: ETSHER), Ougadougou, Burkina Faso

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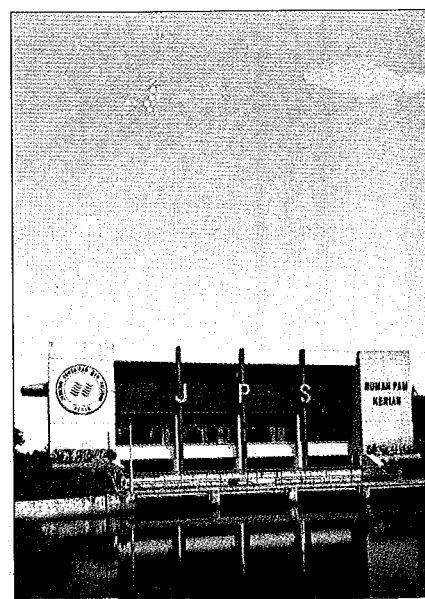
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INSTITUTIONAL DEVELOPMENT PROGRAMS

What is Institutional Development?

Institutional Development is a continuous process which takes place within an organization to help the staff develop appropriate systems and procedures to sustain its development and to meet new challenges. It also helps an agency to develop clear objectives and goals, and to define performance indicators for measuring its achievements. This process requires competent and committed leadership with vision at the top, appropriate strategies, systems and procedures, and well trained and highly motivated staff.

A variety of processes are involved in the promotion of institutional development. The most common practice in organizations concerned with irrigation is to release individual staff members for short or long term training programs, either in-country or abroad. For a variety of reasons, the results of this approach have not always been satisfactory. Returning staff may find themselves without an opportunity to apply their newfound knowledge and skills in their jobs. Often, staff have attended training programs which have focused on the technical aspects of irrigation but not on the skills which would enhance an understanding of organizational issues. Significantly, these and other types of training programs are planned and implemented as isolated actions which by themselves, make little contribution to the overall process of institutional development.

As a consequence, there is a growing consensus among researchers and managers that an integrated approach is necessary to promote institutional development. This approach embraces the system as a whole, and considers the full spectrum of interacting elements not just within the agency, such as its internal systems, policies, procedures, and norms of staff skills and behavior, but also elements

outside of the agency with which it has to interact when conducting its work including the clients, the government, the prevailing economic systems, the available technology, the environment, and so on. The interventions deemed necessary to improve an organization should also be applied simultaneously across the organization rather than as isolated events, if they are to be effective.

What Makes a Successful Institutional Development Program?

To implement a successful institutional development program, it is necessary to involve the top management and each manager at every level throughout the organization. The institutional development programs themselves should promote awareness in the agencies of the importance for strategic planning and human resource development. They should also provide opportunities for identifying organizational constraints, and for implementing problem solving techniques to improve the performance of the organization. These programs should also encourage an appreciation of the value of training to the overall development of the agency, promote team work, and nurture awareness among managers to "scan the world from a broader perspective, always looking for unexpected trends and opportunities to achieve their personal, professional and organizational objectives" (Rhinesmith, 1992).

To initiate an institutional development program to increase performance and better address an irrigation agency's objectives is therefore, a very challenging responsibility for the agency and its staff to embrace. The question for IIMI is, how to increase awareness in the leaders and managers of these agencies, of the need to promote the development of the wide variety of skills that are required to improve the performance and effectiveness of the agency.

How Does IIMI Help?

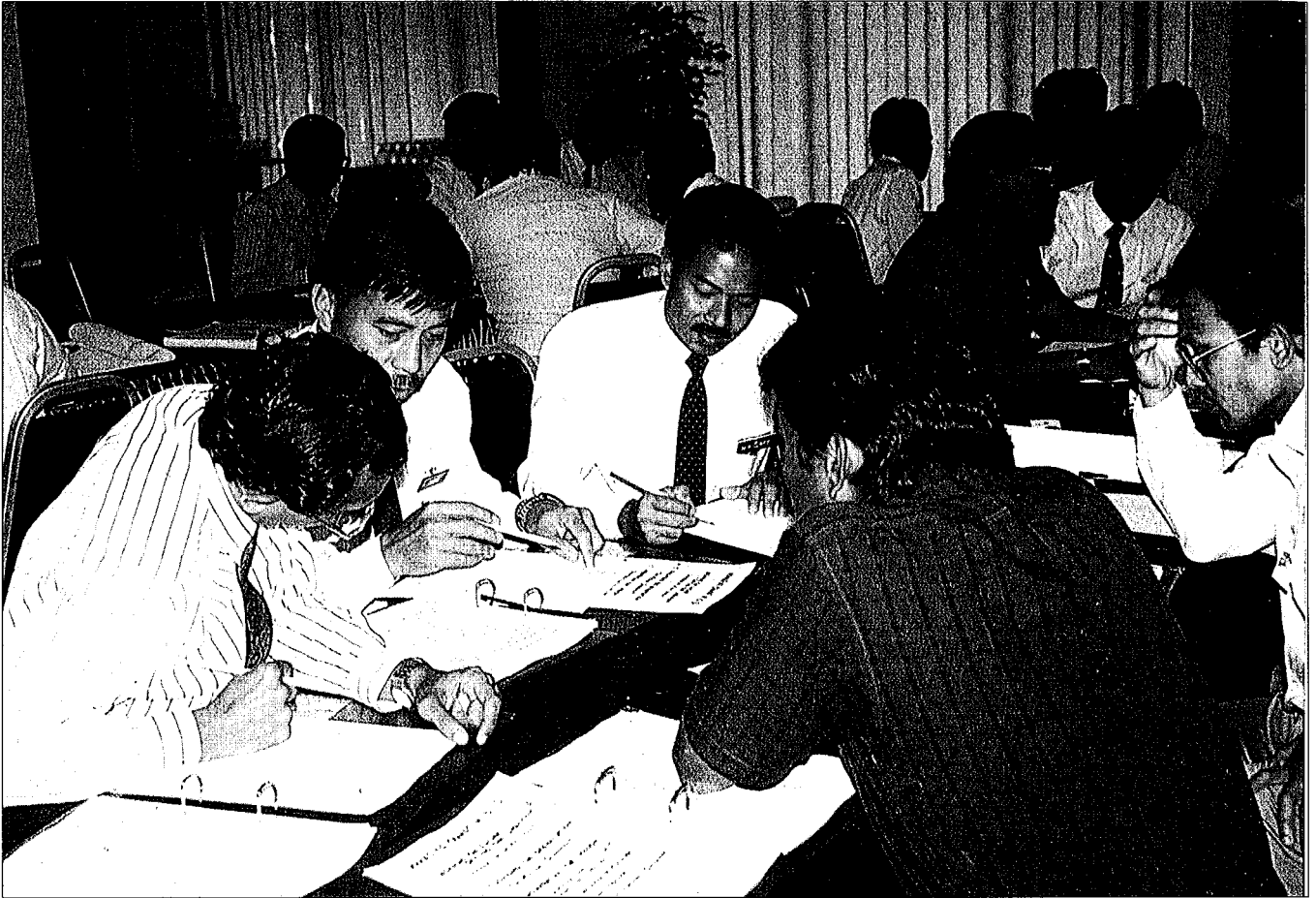
IIMI channels its assistance to irrigation agencies through a number of institution-building activities: organizational development, professional development, information dissemination and networking. These activities are aligned against all of IIMI's goals, but especially to the two directed at supporting the introduction of improved management and policymaking, and strengthening of national research capacity in irrigation management.

Specifically, the organizational and professional development activities at IIMI range from the design of collaborative research projects to link together researchers from different irrigation organizations, in-service training, fellowships, conferences, workshops, dialogue and consultation, to the design, implementation and evaluation of a set of integrated activities which comprise of strategic planning, human resource development, management and research training.

In the area of information dissemination, IIMI produces a wide range of publications for the dissemination of IIMI's research results to its partners and collaborators. These include technical publications and monographs, research papers, country papers, conference and workshop proceedings and discussion papers.

IIMI's networking activities currently include a global network of Farmer-Managed Irrigation Systems, an Asian regional network on Irrigation Management for Crop Diversification, and a regional network in West Africa.

From this wide range of activities, IIMI has chosen for this issue of the IIMI Review to highlight its collaboration with national organizations and in particular, IIMI's interaction with the Department of Irrigation and Drainage in Malaysia.



Institutional development activities help irrigation professionals to improve skills needed to manage irrigation systems.

An Integrated Approach for Institutional Development at the Department of Irrigation and Drainage in Malaysia

Zenete P França, Training Specialist, IIMI

Deficiencies in management are considered to be a major cause of the failure of many irrigation schemes to produce sustained improvements in agricultural productivity in developing countries. This has been principally attributed to the lack of managerial skills among the professional staff working in these irrigation organizations. The training and development of irrigation managers has therefore, become an important activity to help upgrade their skills and consequently, the overall performance of irrigation systems.

Conscious of these problems, the Economic Development Institute of the

World Bank (EDI) and the United States Agency for International Development (USAID), in a joint effort, prepared draft guidelines in 1987 for devising strategies and programs for irrigation training in the public sector. These guidelines were discussed during a seminar organized by EDI and the Center for International Irrigation Training and Research (CIITR), Melbourne, Australia which took place at CIITR from 6 to 16 March 1989. This seminar, attended by senior irrigation managers from various developing countries, aimed to assess the value of these guidelines and their suitability for use in formulating training programs and strategies for

irrigation organizations in their own countries.

Following this seminar, the Department of Irrigation and Drainage (DID) in Malaysia considered that it was necessary to review their own training programs. The objective of the review was to introduce better methods of improving the management capabilities of their staff, and to increase their motivation and commitment to the needs of the Department and its clients, the farmers. It was at this stage that the Director General of the Department invited IIMI to assist with this effort, helping them to improve the irrigation management

component of the existing training programs.

As a first step IIMI and the DID undertook jointly, a Training Needs and Organizational Constraints Assessment to identify the key factors necessary to improve the knowledge, skills, and attitudes of individual staff in the Department. Following this exercise, the full Training Cycle was implemented. The success of this exercise led DID to introduce a Strategic Planning and a Human Resource Development program and subsequently, to consider how to develop research capacity. Together, these institutional development activities were introduced and implemented over a three year period, from January 1989 to September 1992, and brought together a total of four hundred managers of the Department of Irrigation and Drainage. The details of this integrated approach, and the associated institutional linkages, are displayed in Figure I.

Implementation of the Training Cycle

Training Needs and Organizational Constraints Assessment

The first phase in the implementation of the Training Cycle was to conduct the Training Needs and Organizational Constraints Assessment (TNA). This was executed from 13 October to 11 November 1989 in Kuala Lumpur and Kota Bharu. The primary objective of the TNA was to identify the factors which affected individual performance in managing the affairs of the Department, and to indicate the nature of potential solutions to improve the management of the organization.

A crucial aspect of this endeavor was to bring together for small group exercises, a representative sample of three hundred and twenty-one staff from DID, the Malaysian Agricultural Research and Development Institute, the Muda Agricultural Development

Authority, Kemubu Agricultural Development Authority, the University Pertanian Malaysia, the Department of Agriculture, and the National Institute for Public Administration.

These persons were divided into one group of top managers, three groups of engineers, two groups each of technical assistants, technicians and irrigation inspectors, four groups of irrigation overseers, and one group each of researchers and trainers.

IIMI's approach to the TNA was based on promoting interaction between the staff of the organization through small group discussions. The dialogues focused on the concepts of irrigation management, the distinction between the managerial and technical activities, and the gaps existing in knowledge, attitudes and skills of the staff within the organization. Additionally, time was devoted to the identification of organizational constraints which prevented the staff from providing better services to the clients, the farming communities.

These sessions were structured in such a way that the process of understanding the essential concepts, and of translating them into operational terms, took place gradually among the participants as a result of their own efforts and self analysis. The sessions provided the participants with a variety of opportunities to present and discuss their own experiences and attitudes in their work environment. This was performed with the intention to promote awareness of the causes and solutions to various situations — both successful and unsuccessful.

Although these sessions provided DID and IIMI with the desired lists of gaps and organizational constraints on which to focus future actions, the most important constituent of the exercise was the process of group analysis of irrigation activities and of DID as an organization. The interaction between participants was facilitated by the existing common feelings among the staff towards DID which were shared

openly, sincerely and with a commitment to help improve the Department of Irrigation and Drainage to accomplish its goals.

Preparation of the Training Plan

As a result of the information obtained during the TNA, DID embarked on a process of designing and implementing a training program based on the identified needs, and reviewing the organizational components which gave rise to some of the constraints experienced by its staff.

Accordingly, members of the top management of DID were invited to participate, together with the IIMI training team, in a three-day workshop which was held in Malacca in February 1990. Here, they discussed the findings of the TNA, identified the training priorities for DID as a whole, and immediately prepared a training plan for DID staff. This workshop was considered to be an indispensable element in the overall management training program in Malaysia, particularly as most of the participants were top managers and engineers of DID who were responsible for managing Malaysia's irrigation systems.

The discussions of the results of the TNA were intense and very open. The managers were very receptive, particularly to the constraints relating to their own attitudes and behavior. Consequently, the workshop provided an unique opportunity for top managers to get feedback on these matters from their staff and to discuss with their colleagues, ways of improving their management style in order to be more effective managers, leaders and supervisors in the Department.

The event generated agreement with the notion that training activities could be a useful and effective medium in helping DID managers improve the skills that they needed to manage the irrigation systems in the country. This provided an essential foundation for the next stage in the Training Cycle,

the development of curricula for training the priority groups, the engineers and irrigation technicians.

Curriculum Development

The development of two draft curricula to reflect the training needs of DID staff was accomplished during a one-day workshop held on 18 October 1990, at the DID Headquarters in Kuala Lumpur. The workshop, chaired by the Deputy Director General, brought together the Director for Training and training staff from DID headquarters, trainers from two DID training centers and the IIMI Training Specialist.

The concept of curriculum development was presented as a 'master plan' comprising of a comprehensive set of guidelines to help the trainer to manage the learning process. The curriculum functioned as a 'working script' as it defined a step-by-step strategy and a set of activities to be developed during the implementation of a training program. The curriculum clarified exactly what was to be learned and how the learning would take place.

The results of the TNA were analyzed. Gaps in certain skills had been consistently cited, notably those relating to the development of self-confidence, self-esteem, motivation and the development of positive attitudes. Consequently, these topics were included in the training programs for both the engineers and the irrigation technicians. Other topics — how to be a leader, how to coordinate intra and inter agency activities, how to manage information systems, and staff interaction with farmers — were added to the training programs.

Finally, two 'master plans', one for the training of engineers and another for the irrigation technicians, were prepared. A curriculum for the training of trainers was also devised and included topics on how to teach management skills, and how to plan, implement and evaluate management training programs.

Training of Trainers

IIMI, DID and the University Pertanian Malaysia (UPM) trained the trainers at the Continuing Education Center of the UPM, in Selangor from 22 April to 11 May 1991. The specific aim of the program was to help irrigation professionals to develop and practice the skills needed to plan and implement the management training and development activities for the irrigation managers in their organizations. As the level of training experience among the participants varied considerably, exercises in training techniques and methods were included as essential components of the program.

In the third week of the program, the trainers were divided into three groups, each of which was responsible for planning and organizing a one-day training session in which the members of the other two groups acted as 'trainees'. The members of the lead group determined the content of the training program they developed and wrote the performance objectives, prepared the lesson plans, and designed the audio-visual materials and transparencies. The trainers then conducted these training programs, applying the new approaches to adult teaching. Each training session was video-taped and played back so that each person was able to assess the strengths and weaknesses of their individual performances.

Feedback to the lead group was also received from the 'trainees' assigned to the other groups. Each member of the lead group was evaluated by the 'trainees' by means of a questionnaire. Questions addressed a wide range of issues such as personal delivery styles, skills in leading group discussions, and the psychological learning climate.

Production of Training Materials

The production of training materials to support the curricula for the programs designed for training of the engineers and irrigation technicians was a very important aspect of the Training Cycle

in Malaysia. Significantly, published results of research on irrigation management, particularly those derived from IIMI's research, were utilized as key sources of information to support the proposed curricula. Incorporation of this material into the training programs facilitated a better understanding of the problems cited in the publications and encouraged the participants to synthesize appropriate solutions, bridging the gap between research and practice.

The training materials used in the first two training programs at DID were initially prepared by the IIMI Training Unit. These were subsequently modified in accordance with suggestions made by the Malaysian trainers while they were being used in the training of trainers program.

During the design and production of the first draft of the training materials, IIMI took into account a number of interrelated factors, for example, the facilities or location where the training was to take place, and what follow-up activities were to be pursued.

Study of these and many other factors, enabled appropriate decisions to be made on the nature of the training materials which were required to meet the needs of the first DID training programs.

A number of IIMI's research publications relevant to the proposed content of the two training programs were identified. Single original English language copies of each of these publications were provided to the engineers one month prior to the beginning of the training program. An English summary of each document was also prepared and translated into *Bahasa Malaysia* for distribution to the technicians.

The documents were also used as the basis for producing the training materials, transcribing the results of the research into other communication media to ensure that the messages they carried reached the intended audiences

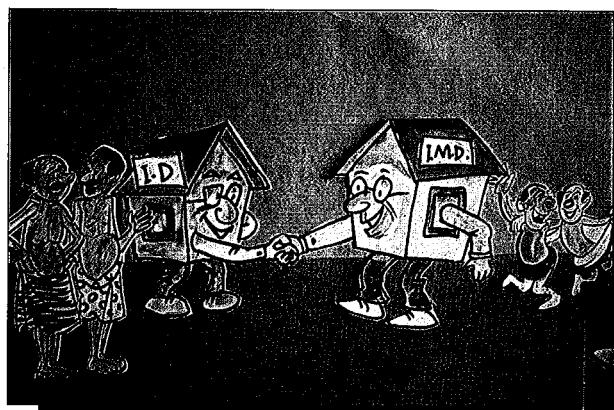
in ways which they could be understood. For example, the publication *Institutions Under Stress and People in Distress* (Merrey, 1989) was used in four different ways. The book was provided to the participants one month in advance, and then a video script based on the book was prepared by the IIMI training staff. Subsequently, a worksheet was

designed and distributed among the participants which gave directions and questions based on the book for group discussion. Finally, a tape-slide presentation was prepared using cartoons to emphasize the main points of the research study and the conclusions. These documents were transcribed into overhead transparencies, flipcharts and into

worksheets and translated into *Bahasa Malaysia*.

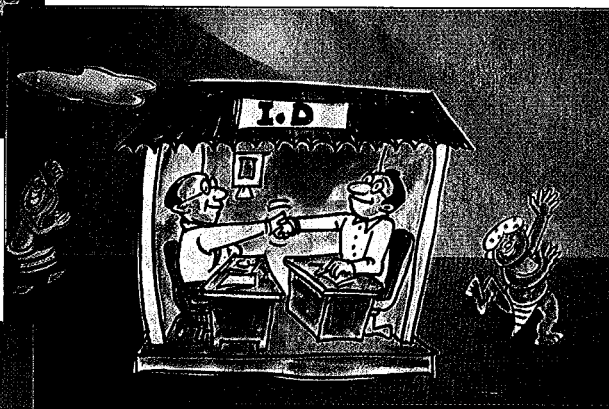
An example of how the results of IIMI research or case studies were translated into tape-slide presentations for use as training material is given in figure II.

Figure II. — Slide Presentation

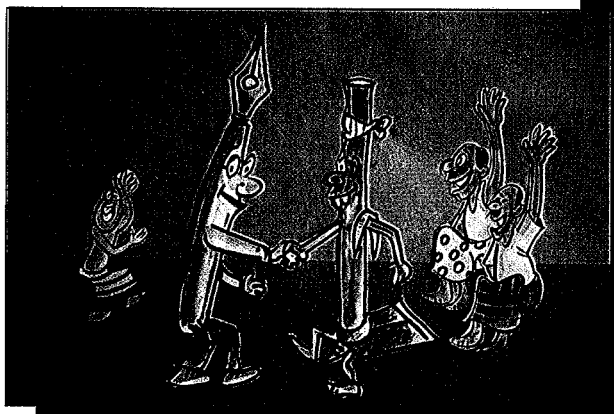


Improving interagency communication

Communication within departments



and between farmers/officers



The above slide-tape presentation is based on the publication, *Institutions Under Stress and People in Distress* by two IIMI researchers, Douglas J. Merrey and P.G. Somaratne (Merrey, 1989, page 69, para 4). This study analyses irrigation operational problems in a new irrigation system in southern Sri Lanka and their impact on the system, and offers a number of suggestions for improving the management of this system.

The publications selected for the training courses highlighted the problems in irrigation management encountered in other countries. The participants were therefore, able to analyze and compare them with similar situations which confronted them in their own irrigation environment. Consequently, they were able to evaluate the recommendations in terms of their relevance, feasibility and suitability, to understand and address

the problems in their own country. By presenting the same content of the publications in three different ways, reinforced and clarified important points which were not always clear at first reading.

During the program, opportunities were provided for the Malaysian trainers to become involved in the process of assessing and improving the training materials. This was of



The training materials were officially handed over to DID on 14 October 1991.

profound significance. Not only did this increase the relevance of the materials to the training programs, but it inspired in the trainers, a sense of ownership of the materials. Consequently, the trainers were committed to using these materials and paid greater attention to their content.

The manner in which the trainers were involved in this process was to invite them to evaluate the draft training materials during the training of trainers course. Here, feedback was either given orally or in writing, and was taken fully into account by the IIMI training staff in producing the final versions of the training modules. These modules were officially handed over to DID on 14 October 1991.

Monitoring Implementation of the Training Programs

The first of the two training activities to be implemented was a course for irrigation technicians, which was conducted by an irrigation engineer and a senior irrigation inspector from DID. This took place at the DID training center in Kota Bharu from 26 October to 6 November 1991. The second course was designed for the engineers and took place at the Regional Center for Training in Penang, from 13 to 26 November

1991. This was conducted by two DID irrigation engineers and one member of the Faculty of Engineering of UPM.

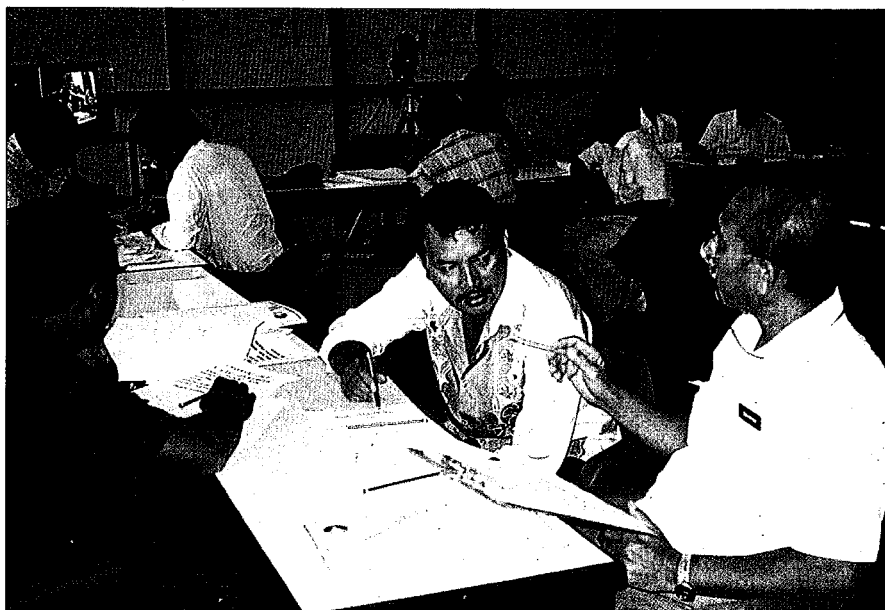
An important component in the implementation of the two training courses was an appraisal, by members of the IIMI training team, of the Malaysian trainers who had been trained earlier under the training of trainers course. The appraisal process was designed to ensure that the training curricula and training materials designed for the engineers and

irrigation technicians were being used effectively. It was also used as a means of supporting the Malaysian trainers as they applied their newly-learned training skills in practice for the first time, and helped to reinforce their self-confidence.

The results of the appraisal confirmed that the trainers were highly motivated and applied the new training methods and techniques with confidence. They used the training materials effectively and transmitted their enthusiasm to the participants. This experience emphasized the importance of developing a well-designed training plan in providing the basis for effective and sustainable training activities.

Evaluation of the Training Cycle

The activities were evaluated at every stage of the training cycle by the participants who considered them in terms of content, process and program design. In general, the participants evaluated the sessions positively, emphasizing that the methods and techniques employed fostered awareness of the importance of managerial skills, a better understanding of management training



The IIMI training team carried out an appraisal of the trainers who had been earlier trained under the training of trainers program.



The top management of DID discussing issues relating to strategic planning activities.

activities, and provided a forum for team-building and developing personal friendships.

Strategic Planning and Human Resource Development in the Department of Irrigation and Drainage, Malaysia

The performance of the participants in the training programs just described could only be monitored and assessed in the context of the overall objectives of the Department of Irrigation and Drainage. Consequently, the top managers of DID agreed to review and discuss a number of issues relating to strategic planning, including the formulation of a mission statement, drawing up a set of corporate objectives, and devising a human resources development program.

Between 15 and 25 October 1991, three workshops were organized at the headquarters of DID to address these issues. In attendance were the policymakers and senior managers of DID. The activities were organized into two three-day events and a single one-day event with a maximum of twenty participants in any particular instance.

In preparation, a group of top managers prepared a draft mission statement and a set of corporate objectives for discussion.

In the discussions on the mission statement, consensus was reached that the mission of DID should support government policies, recognize the need for cooperating and coordinating water resources in the country, and meet the clients' needs in order to sustain national development. It was agreed that the mission statement which was constructed would be disseminated to DID staff and its clients, key groups who were closely related to the organization, government policymakers and stakeholders.

During those sessions devoted to defining the corporate objectives, it was noted that in order to carry out the mission, the success of the planning and management processes lay in the combination of 'top-down' and 'bottoms-up' responses. Such responses demanded a wide variety of interactions which contributed to the development, understanding and knowledge of the organization, including staff motivation and commitment.

Emphasis was also given to the importance of evaluating the performance of an institution in order

to ascertain its strengths and weaknesses. In addition, the concept of performance categories, "a set of related skills, procedures and capabilities which define a particular area of institutional function or performance" (Cullivan, 1988), was introduced to increase the awareness among the participants that performance indicators are related to performance categories. Thus, participants were provided with an understanding that once performance assessment is focused on a set of objectives and expected level of achievements, it can provide managers with a guide for designing appropriate interventions to improve the overall performance of the organization.

The discussions on Human Resource Development (HRD) covered the importance of assessing staff training needs and preparing a plan to provide the staff of the organization with the opportunity to develop their professional capabilities through formal training programs. In addition, issues relating to recruitment selection, socialization, career development and staff performance appraisal were discussed. Finally, emphasis was placed on the importance of the need for top and senior management to fully support and participate in the design and implementation of the HRD activities if the program was to be successful.

Strategic Planning and HRD at the Field Level

As an outcome of the workshops just described, the strategic planning process was extended to the field level in the Kerian and Besut irrigation schemes. The objective of the exercise was to enable DID to measure the performance levels of its services in the field at these two sites. The activities which took place in Besut in September 1992 included a workshop for the managers of the two schemes on strategic planning and human resource development, an information workshop for the staff of the Besut scheme, and an interactive meeting

with the farmer-clients of the Besut scheme.

The initial workshop allowed the participants to understand and internalize the mission statement and corporate objectives of DID. Small groups also worked together to produce statements which would help interpret the DID mission for a wide range of different client audiences. These interpretations emphasized the different aspects of the activities pursued by DID while undertaking its mission. Issues concerning the corporate objectives, performance assessment and human resource development were also discussed in relation to the management of the Besut and Kerian schemes.

Subsequently, a half-day information workshop was organized for the staff of the Besut scheme. This was conducted to increase staff awareness of the importance of the issues covered in the earlier workshops, including the mission and objectives of DID, and the objectives, strategies and activities of DID as they related to the field setting.

Finally, senior staff members of DID organized an interactive meeting with representatives from the head,

middle and tail end farmers of the Besut irrigation scheme in Besut in September 1992. Here, information was provided on the activities of DID and the attention it was giving towards improving the performance of its staff and services. Interviews were held with the farmers to help DID ascertain the needs of the community. The information acquired as a result of these interviews was used as a basis for developing a plan for improved irrigation services to the farmers.

These activities constituted the final and necessary step to operationalize the DID mission and objectives at the field level in two selected irrigation schemes in Malaysia. The Director General of DID, in an interview on 2 October 1992, confirmed the increased level of interest and commitment among the staff of the Besut and Kerian schemes, stating:

"I am sure that the process we have gone through . . . would definitely be most effective towards improving irrigation performance as a whole in the country."

The impact of these activities on the performance of the staff of the Besut and Kerian schemes will be assessed at a later stage. However, the most

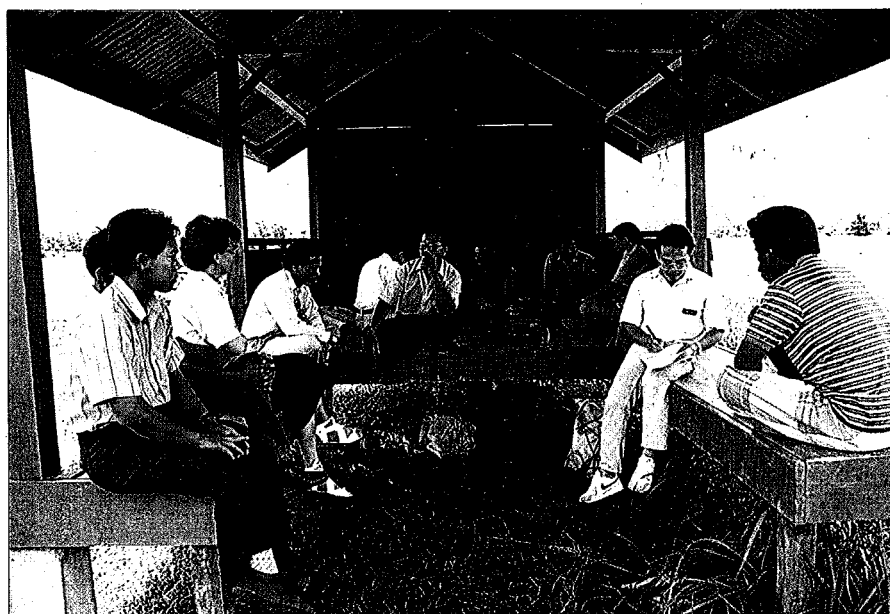
significant impact which is anticipated is that the managers of these two schemes will reinforce the planning, monitoring and evaluation processes and demonstrate greater commitment to achieving the DID mission. These expectations led IIMI and DID to develop the final stage of this management training, the development of research skills for investigating further aspects of the management of irrigation schemes.

Developing Research Capacity

If research on irrigation management is to be relevant to the real needs of the irrigation sector, the irrigation practitioners should be involved in the research. These practitioners are able to make meaningful contributions to research programs as a consequence of the knowledge and experience they acquire from the day-to-day operation of the irrigation systems.

Too often, research on irrigation issues is carried out by people from outside the irrigation sector, generally from the ministries of agriculture or from the universities. These persons study the irrigation systems for their own purposes, only using the systems as sources of information, but without consulting the irrigation practitioners. Based on their professional knowledge and experience, their contributions would add considerably to these research studies, helping to provide improved irrigation system performance. Since they are not generally involved in the research however, many of the real needs of irrigation systems have been neglected.

In order to develop the research capacity of the staff at DID, IIMI invited researchers from the universities and other agencies to participate in the program. They helped the DID staff to identify the skills necessary to conduct research on irrigation management and also, to debate the issues and problems in



Meetings held with farmers of the Besut scheme helped in developing a plan for improved irrigation services to farmers.

irrigation management research in the country.

The next step was to organize a workshop on *Research on Performance of Irrigation Systems*. This was organized to alert the irrigation practitioners from the Besut and Kerian schemes of the need to evaluate the performance of the irrigation systems, and to encourage them to call upon the assistance of the research staff of the University and elsewhere in Malaysia, to investigate the problems for which solutions were still required. The results of such investigations could be incorporated into the curricula of future training programs for irrigation managers helping to ensure their relevance to the real needs of the irrigation sector.

The workshop, designed for the irrigation managers in the Besut and Kerian schemes, was held in Besut from 25 to 28 September 1992. A total of fifteen managers participated in the event, including two DID trainers and one professor from University Pertanian Malaysia (UPM).

The four-day workshop included wide ranging discussions on research processes, the complexity of the irrigations systems, monitoring and

evaluation of irrigation systems performance, sustainability issues, and the importance of conducting collaborative (research) activities, and writing good research proposals. The event concluded with the identification of the research issues relevant to the Besut and Kerian schemes and highlighting a spectrum of other factors which have a significant bearing on irrigation performance, and especially, increased farmer participation in system management and equity of water distribution.

By focussing the discussions on research in the performance of irrigation systems, this workshop helped to develop within DID, an awareness of the full range of skills necessary for institutional development. The increased awareness among the participants that irrigation managers should lead the way in developing research studies by identifying problems and working together with researchers from universities and other research centers, was considered to be the most important achievement of the workshop. Furthermore, the meeting increased the understanding of the need to conduct research in irrigation management in order to strengthen training programs for the staff of the

irrigation systems. It was also clear that developing skills with immediate practical application to real problems served to increase the relevance of the training program and raised the level of staff motivation.

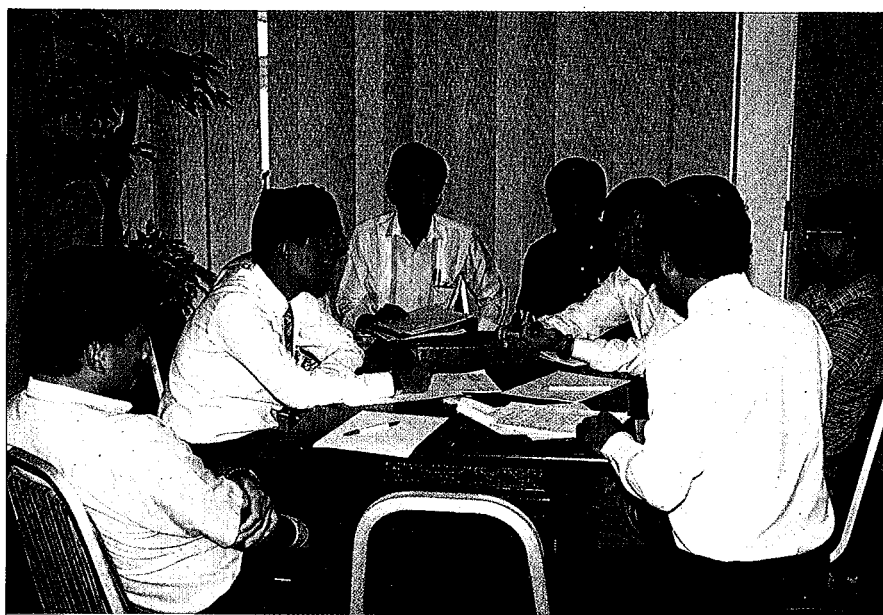
The importance of the link between research and training was confirmed by the Director General of DID during an interview on 2 October 1992, when he said:

"I think that these two activities go along hand in hand. Training development is dependent on availability and dissemination of updated information and materials on latest technology and performance. The recent workshop held in Besut for both the Kerian and Besut project staff would go a long way in sensitizing them to regard the dimension of research as a necessary on-going activity under irrigation performance and management of projects. At any time, the irrigation manager needs to be aware of shortcomings and identify the need for research and subsequently take the initiative to address them through action taken in-house or through research institutions within the country or outside. Only through these continuing efforts can one see positive results in the enhancement of irrigation performance of schemes."

The Lessons

The integrated institutional development program implemented for the Department of Irrigation and Drainage in Malaysia was conducted jointly by IIMI and the Department of Irrigation and Drainage between January 1989 and September 1992. The program was delivered in three distinct stages, through the *Training Cycle*, through *Strategic Planning and Human Resource Development*, and through *Developing Research Capacity*.

A number of noteworthy factors influenced the outcomes of the program. These have been carefully analyzed and are regarded as critical



Irrigation managers of Besut and Kerian schemes discussing the importance of irrigation systems performance evaluation.

constituents to the success of any institutional development program, wherever it may be applied. These constituents are —

- ❑ Management training for promoting institutional development must have the complete support from the top management of the organization. The active participation in this process by top management is vital.
- ❑ A key factor in the success of implementing an institutional development program is the recognition that the Training Cycle, Strategic Planning and Human Resource Development, and the Development of Research Capacity are interrelated and consequently, are essential constituents of the overall program.
- ❑ A systematic management training program should bring the entire organization together. Managers from all levels within the organization develop an interest in participating and in understanding the processes of the changes that take place.
- ❑ The training activities should be designed and conducted as an integral part of the overall human

resources development plan of the organization.

- ❑ National trainers should be part of the training team. This enables them to develop a deep sensitivity and understanding of the whole process, and to take on the responsibility for guiding the program to fulfillment.
- ❑ The training team responsible for planning and conducting such a program should be interdisciplinary, and should involve experienced professionals in irrigation management and practitioners from national organizations.
- ❑ Research results make an invaluable contribution to strengthen the content of the training exercises.
- ❑ The discussion of actual research studies and their recommendations develop useful insights for the participants, helping them to analyze their own environment, assess problems and propose plausible solutions to their own difficulties.
- ❑ Interactive techniques are the best way of approaching management training activities. They promote understanding and friendship

amongst the participants, and facilitate team building.

- ❑ The strategic plan and human resources development plan must be embodied in an official document to provide authoritative direction to the organization.
- ❑ To ensure sustainability of the program, the activities need to be continuously followed-up and evaluated. This requires full support from the leaders of the national organization.

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- Rhinesmith, S.H. Global Mindsets for Global Managers. Training and Development, Vol. 46, number 10, October 1992, pp 63–68.

THE FINAL WORD

It is appropriate to leave the final word on this whole process of human resources development and strategic planning for institutional development in the Department of Irrigation and Drainage in Malaysia to the Director General, Dato Ir. Haji Shahrizaila bin Abdullah. Interviewed in Kuala Lumpur at the end of the final stage of the three-year program, the Director General said,

"I must say that the three stages we have gone through so far in this collaborative program with IIMI have indeed brought about the total improvement to the management,

especially of irrigation areas; more important, it was also beneficial to developing a human resource development program for the organization as a whole.

Though the program was a structured process focussed on irrigation management, the whole methodology and strategy is relevant to other areas as well. The Department being involved in more than just irrigation, that is, in functions like agricultural drainage, river and coastal engineering, I see the relevance of this exercise to these areas also. Through this continuing process, we could then develop an organization well equipped to deal with all

problems, building our own capacity, not only as planners and implementers, but also as managers who are well trained and competent.

I see this program in a positive light, bearing in mind the need for institutional arrangements to ensure its sustainability, because such methodology must be carefully monitored and progressively evaluated. In this context, one has to recognize that change is necessary from time to time, and that if it is properly planned and executed, the chances of success will always be there. I think this is what the strategic planning and human resources development program is all about."

Management Training Provides a Useful Contribution for the Management of Change in the Bangladesh Agricultural Development Corporation



A workshop held in September 1992 focused on re-writing the vision and mission statements of BADC.

The Bangladesh Agricultural Development Corporation (BADC) was established in 1961 and employs around twenty-two thousand staff. Since the end of 1988, IIMI has been working in collaboration with BADC to conduct research and networking activities on irrigation management.

In May 1990, IIMI's Training Specialist visited Bangladesh in order to become acquainted with irrigation management training in the country. A one-day workshop was held in Dhaka to discuss IIMI's mission and its management training strategy with a number of key irrigation organizations. The representatives of BADC who attended this event indicated their interest to work with IIMI to strengthen the management training program in their organization.

BADC and IIMI subsequently conducted a Training Needs and Organizational Constraints Assessment of BADC between 28 May and 15 June 1991. This activity brought together 179 participants and involved the technical staff from BADC, the top management, researchers and trainers from different organizations. The methodology employed was designed to facilitate awareness and understanding of the staff's own strengths and weaknesses, enabling them to identify their own training needs. The top management, researchers and trainers were involved in the TNA in their complementary roles as leaders, implementers of research programs, and providers of training.

As a consequence of major shifts in government policy, BADC had a declining role in irrigation-related

affairs. The methodology employed in the TNA for top management therefore, was tailored to provide an opportunity for deliberation on the possible future role of BADC.

In September 1991, the results of the TNA were presented in a three-day workshop in Dhaka. In view of the anticipated changes in the role of BADC in Bangladesh, the scope of the workshop was extended to consider issues of strategic planning and other aspects of institutional development.

A follow-up workshop organized by BADC and IIMI a year later, in September 1992, took a closer look at the outcomes of the previous workshop, and made positive steps forward towards strategic planning and human resource development for BADC. The principal dialogue of the workshop centered around efforts to rewrite the vision and mission statements for BADC that would be relevant to its redefined role in the future.

For the moment however, the new role of the Bangladesh Agricultural Development Corporation has not been firmly established. Nevertheless, the Directors of BADC have expressed a view that they look forward to continuing to develop their institutional development programs with the help of IIMI over the years ahead.

IIMI-INDIA PROGRAM

RESEARCH MANAGEMENT LINKAGES

The IIMI-India Collaborative Research Program has been a new and rewarding experience. Given the limitation of resources and the prevailing strength of Indian national institutions in research and training, IIMI experimented with a novel approach: IIMI selected clusters of managing agencies and research and training institutions in four different states, Bihar, Gujarat, Tamil Nadu and Uttar Pradesh, to conduct the program in close collaboration with IIMI scientists.

A catalytic approach, aimed to bring these institutions together in joint research projects, assists in framing key research questions, and developing workable research methodologies, evolved through joint discussions among all the interested parties. Monitoring and continuous guidance is provided through the institutional mechanism of a coordinating committee for the IIMI-India Program.

The Research Programs are:

- ❑ In Bihar, the College of Engineering, Patna, the local Water and Land Management Institute (WALMI), the Irrigation Department and IIMI are implementing a study on conjunctive use management in the Eastern Gandak Project.
- ❑ In Gujarat, the local WALMI, the Institute for Rural Management, Anand (IRMA),

the Water Resources Department and IIMI are conducting research on main system management processes to help develop and support an interactive methodology of water delivery schedules in minors in the Mahi Kadana Project.

- ❑ In Tamil Nadu, working with Anna University, the Irrigation Management and Training Institute (IMTI) and the Irrigation Branch of the Public Works Department, research on Main System Management and Performance Evaluation of the Tamiravaruni is in progress.

- ❑ In Uttar Pradesh, the University of Roorkee, the local WALMI and the Irrigation Department have joined IIMI in a research project on Conjunctive Use Management of Surface/ Groundwater for Irrigation through the development of a computer simulation model in the Madheya Ganga Project.

IIMI's clustered approach involving academic, training and management institutes has fostered a consultative interactive mode among the participating institutions which was lacking earlier. This has helped enhance capacities of these institutes to work together, pooling their

respective strengths and legitimizing the joint multi-disciplinary approach to problem solving.

Familiarization study tours and workshops have enabled professionals, including senior policy makers, to discuss, appraise and exchange views on current thinking and applications adopted elsewhere that have relevance in the context of irrigation in India.

At the conclusion of the current projects in 1993, it is expected that these inter-agency linkages and implementation arrangements would have developed understandings among the different groups for conducting joint research to explore emerging problems in the irrigation sector. (R. Sakthivadivel and R. Ratnayake, IIMI)



In Gujarat, a study on Main System Management is in progress.

THE SUDAN EXPERIENCE

Sudan, with 1.9M Ha., has the second largest irrigated area in Africa, and 65% of the irrigated sector is dominated by four major irrigation parastatals. There are very few international agencies undertaking resident operations in the Sudan, but IIMI has had a resident presence in Sudan since mid-1989. During this time, collaborative field research has been concentrated in the project areas of two of the large parastatals, the Sudan Gezira and the Rahad. For the moment however, IIMI's work has made a greater impact in those aspects of the program devoted to institutional building than those devoted to field research.

A key factor for this development is the initial national workshop conducted in October 1989. This workshop conducted with the participation of all the Government and donor agencies in the irrigated agriculture sector was associated with IIMI in identifying the scope of IIMI's program in Sudan and

prioritizing IIMI's program in Sudan through consensus. An indirect spin-off of the workshop was the establishment of a number of important relationships with the government agencies that led to a continuous dialogue on issues affecting the irrigated agriculture sector. In turn, this led to stronger support from the national policy makers and irrigation managers for IIMI's work program. A highly professional and representative Consultative Committee helped to continue this dialogue and determine the research agenda and priorities of the program.

The emerging policy environment in Africa with its emphasis on Structural Adjustment Programs, placed tremendous internal pressures on the irrigation sector whose task it was to initiate reforms to reduce government expenditure and improve overall efficiency. These tasks included taking on responsibility for decision making, increasing outputs, and seeking higher levels of participation from the beneficiaries, the farmers.

IIMI's assistance was sought in important policy areas such as "recovery of land and water charges" and "strategies for privatization". With its experience in other parts of the

world, particularly in Asia, IIMI was able to offer considerable assistance at this crucial stage of Sudan's interest in effecting major policy reforms. An IIMI initiated workshop on *Land and Water Charges* was held in May 1991. The recommendations made at this workshop are currently being followed up by a Government-appointed high level committee of officials in which IIMI is represented. In October of the same year, IIMI organized with the Ministries of Water Resources and Agriculture, a workshop on *Privatization and Turnover*, to which IIMI contributed its global experience in the area of strengthening farmer participation and institutional change. In the same year, IIMI also provided training in Rapid Rural Appraisal techniques to irrigation professionals at the field level.

In the Rahad Scheme, IIMI's field research work has resulted in a reappraisal of the operation and maintenance procedures, while at the Sudan Gezira Board, IIMI has helped to establish a Water Management Advisory Unit in addition to strengthening its capacity in water management.

The combination of the emerging results of the collaborative field research work on the one hand, and the recommendations of the policy level workshops on the other, have converged to synergize and provide both policy makers and managers in the Sudan excellent opportunities to test out and initiate major reforms in the management of irrigation systems.

IIMI's continuing work in Sudan, at a time when budgetary pressures are influencing the management and economic decisions being taken with regard to the irrigation sector, is likely to foster national agency interest in identifying more effective alternative management systems, and reorientation of Government and farmer institutions. (Nanda Abeywickrema, IIMI)



At the Sudan Gezira Board, IIMI has helped to establish a Water Management Advisory Unit.

THE PHILIPPINES

The Philippines is in some ways unique in having an Irrigation Agency with a difference — the National Irrigation Administration (NIA) is a corporate body designed quite differently from the conventional Irrigation Departments in Asia. It has its strengths and weaknesses. One area of visible strength is its emphasis on institutional development. Also, it has a research arm. Both the Institutional Development Department and the Research Division fall under NIA's Assistant Administrator in charge of System Management. At each of the 12 regional offices, NIA has a Research Co-ordinator trained in research methodologies, irrigation and irrigated agricultural production. Although they may not have had the opportunity to become highly skilled researchers, they have been exposed to practical problems in irrigation systems and gained a great deal of on-the-job training — they were aware and responsive to the operational problems which needed research.

The Philippines is also blessed with a substantial number of Regional Universities, with qualified academics, mostly young and eager to contribute towards national efforts.

IIMI managed the irrigation management research component of the USAID funded Accelerated Agricultural Production Program (AAPP) during the period 1989 to 1991. Under this program, nine regional universities were selected to work jointly with NIA's Regional Research Co-ordinators and staff. They worked on sixteen research

topics ranging from the assessment of NIA's latest approach of using "farmers as farmer-organizers" through investigations into the performance of irrigation systems, to trial efforts to streamline and strengthen the operation of NIA's provincial irrigation offices. In 1990 and 1991, IIMI catalyzed and provided technical assistance to NIA and the collaborating regional universities to translate research findings into intervention strategies, and helped to pilot test these action plans.

In this way, academics with training in research techniques who until now had been conducting research on topics of pure academic interest, were brought out to the field to conduct action research on real problems in real irrigation systems.

By the end of 1991, NIA-university teams had pilot tested several implementation schedules for improving irrigation performance. Impact evaluation quantified program success in both institutional and Operational and Maintenance (O&M) performance aspects. More specifically, improvements were observed in farmer involvement in O&M, in the involvement of NIA's O&M personnel in institutional development functions, in the collection rates of Irrigation Service Fee (ISF) and in interaction between NIA and Irrigators Associations, etc. Moreover, this collaborative action-research has also helped strengthen research and management capacities of the regional universities and NIA. (Nanda Abeywickrema and C.M. Wijayarathne, IIMI)

International Symposium on Management of Rivers for the Future

Many great civilizations of the world have been traced to riverine origins. Rivers of today continue to play important roles as the natural arteries of a country, meeting the needs of the expanding population and sustaining the socio-economic development and progress of the nation. A great variety of experience on the subject of river management has evolved worldwide over time and locality considering the geographical, historical, cultural, legal and technological differences that exist in various parts of the world.

An international symposium on "Management of Rivers For The Future" scheduled to be held in Kuala Lumpur from 16-18 November 1993 is one of the activities in support of the "Love Our Rivers" campaign organized by the Department of Irrigation and Drainage in Malaysia in 1993. The primary objectives of this symposium are:

- To highlight and enhance awareness of the importance of properly developing and managing river systems,
- To provide a forum for the exchange of knowledge and experience in river management,
- To introduce state-of-the-art river management technology.

The symposium is organized for the benefit of engineers, planners, scientists, consultants, academicians, decision-makers, and others who are directly or indirectly involved in the planning, development and management of rivers.

For further details, please contact:

The Secretariat,
**International Symposium —
Management of Rivers for the Future**
C/O DEPARTMENT OF
IRRIGATION AND DRAINAGE
Jalan Sultan Salahuddin
50626 Kuala Lumpur, Malaysia.
Telephone: 603-2923831
Fax : 603-2914282



In Sri Lanka, IIMI is helping the irrigation sector to enhance its capacity for undertaking or managing research.

IIMI ASSISTS THE SRI LANKAN IRRIGATION DEPARTMENT IN DEVELOPING ITS RESEARCH WING

Over a period of seven years, IIMI's Program in Sri Lanka has evolved from farm and irrigation system level research on specific issues, such as irrigation management for diversified cropping, to assisting the Government to work towards its goal of participatory irrigation management and related policy formulation.

During this period, it became evident that a major weakness in the managing agencies in the irrigation sector in Sri Lanka is the lack of appreciation and capacity for undertaking or managing research,

particularly on the operational issues. Linking this research with related agencies in the agriculture and trade sectors is considered important.

Currently, IIMI and the Irrigation Department (ID) are jointly developing a multi-disciplinary Irrigation Research Management Unit (IRMU) within ID as the technical assistance component of the National Irrigation Rehabilitation Project. This activity is funded by the Commission of the European Communities (CEC). By the end of this 4-year effort, ID will have an effective research wing (IRMU) which would identify the

country's irrigation research priorities, coordinate and synthesize in-country irrigation research, undertake adaptive research to test technical, institutional and management innovations, and monitor and evaluate irrigation performance. The initial strategic planning and the formulation of the work program have been completed and a wide range of activities — from setting up IRMU to field research — is in progress. (Nanda Abeywickrema and C.M. Wijayaratne)

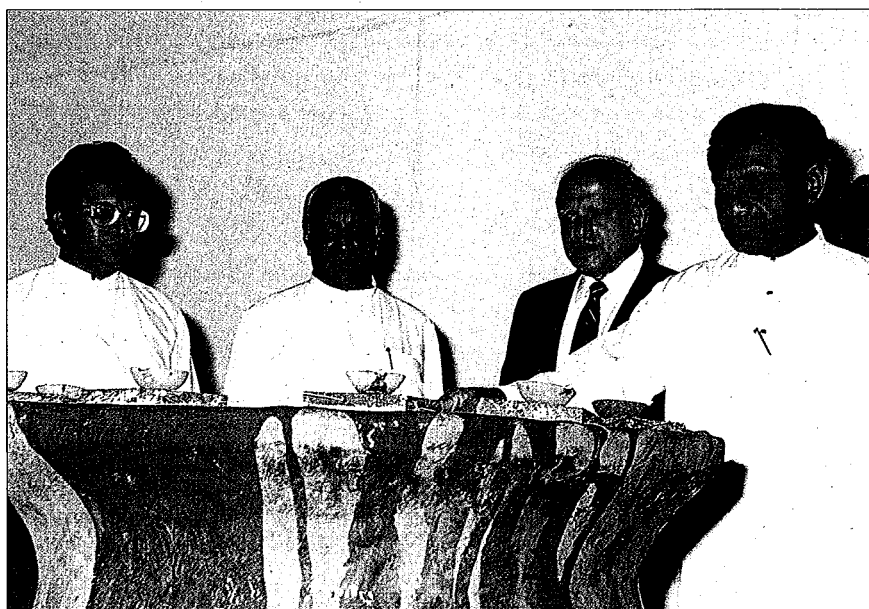
CEREMONIAL INAUGURATION OF IIMI'S HEADQUARTERS BUILDING

"Our policies are directed towards making irrigated agriculture efficient and productive. Research should be of direct application to the users of irrigation systems. Innovations, physical, institutional and managerial, should be relevant, adaptable and affordable. It is my fervent hope that the International Irrigation Management Institute (IIMI) will fulfill its laudable objective, to improve and sustain the performance of irrigation systems in developing countries."

This was stated by His Excellency, Ranasinghe Premadasa, the Late President of the Democratic Socialist Republic of Sri Lanka, when he inaugurated IIMI's headquarters building in a colorful ceremony on 6 December 1992.

Dr. M.S. Swaminathan, Chairman of IIMI's Board of Governors, welcoming the President and other distinguished guests, said that a distinctive feature of the social and economic history of Sri Lanka from the first millennium B.C. was its fine irrigation network. "IIMI is thus in the fortunate position to learn from the ancient wisdom and modern experience of Sri Lanka and to utilize this rich fund of know-how in promoting worldwide a new paradigm of irrigated agriculture rooted in the principles of ecological sustainability, economic profitability and social equity," he said.

The Hon. Gamini Atukorale,
Minister for Lands, Irrigation and



His Excellency, Ranasinghe Premadasa, the Late President of Sri Lanka inaugurated IIMI's headquarters building in a colorful ceremony.

Mahaweli Development of the Government of Sri Lanka, Mr. Fritz Staehelin, Director of the Swiss Development Cooperation and Dr. Roberto L. Lenton, IIMI's Director General, also addressed the gathering.

The inauguration was marked by the unveiling of the Dedication Plaque by His Excellency, the Late President of Sri Lanka, and celebrated with a musical performance especially commissioned for the occasion by IIMI. Guests also viewed a 20-minute video presentation on the problems facing irrigated agriculture and IIMI's role in addressing these issues. An exhibition consisting of scale models depicting "Irrigation in Sri Lanka — Ancient and Modern" provided by the Ministry of Lands, Irrigation and Mahaweli Development, and displays of pictures, publications and posters

of IIMI's work and the work of other International Agricultural Research Centers around the world, formed part of the inauguration program.

The headquarters building is a gift to the Institute from the Government of Sri Lanka with the generous assistance of the Governments of Canada and Switzerland. Improvements to the building have been supported by the Ford Foundation. The building will serve IIMI's growing needs in the years ahead and provide an excellent base for the Institute to further its mission of fostering the development, dissemination and adoption of lasting improvements in the performance of irrigated agriculture in developing countries around the globe.

INTERNATIONAL EXECUTIVE COUNCIL MEETING AND CONGRESS ON IRRIGATION AND DRAINAGE

The Hague, Netherlands will be the venue for the 44th International Executive Council Meeting and 15th Congress on Irrigation and Drainage scheduled to be held during 30 August – 11 September 1993. This event is organized by the International Commission on Irrigation and Drainage (ICID), a scientific and technical non-governmental international organization. The objectives of ICID are to stimulate and promote the development and application of irrigation, drainage, flood control, river training and environmental management in all their technical, economic, social and environmental aspects, as well as the needed research leading to the use of modern techniques. The ICID, founded in 1950, now has 80 member countries.

Every three years ICID organizes its major event, the international congress and exhibition. The theme of this congress will be "Water Management in the Next Century". Parallel to the Congress, four workshops, three special presentations and presentations by ICID Working Groups will be held. In connection to the congress, the 7th International Exhibition on Irrigation, Drainage and Flood Control will be held from 6–11 September. It will show the various aspects of water and water management in the world. This exhibition will build a bridge between the scientific elements of the congress and their practical applications.

IIMI's contribution towards the congress will include a keynote

address and two presentations on Performance. Both presentations will be made at the proposed workshop on Performance during the Congress.

For further details on the conference, please contact:

NETHERLANDS
NATIONAL COMMITTEE ICID
Attn: **BART SCHULTZ**
P.O.Box 600
8200 AP LELYSTAD
The Netherlands
Tel: +31 3200 97440
Telex: 40115flevo nl
Telefax: +31 3200 34300

IIMI'S BOARD OF GOVERNORS MEET IN PAKISTAN

IIMI's Board of Governors met in Pakistan during 5–8 April 1993. The Board meeting was held in Lahore on 5 and 6 April and in Islamabad on 7 and 8 April. It was attended by Mr. Robert McNamara, former President of the World Bank, Mr. Robert Rangeley, formerly of M/s Sir Alexander Gibb and Partners, Mr Jean-Pierre Troy, a senior official of the French Ministry of Agriculture, Dr. Leslie Swindale, former

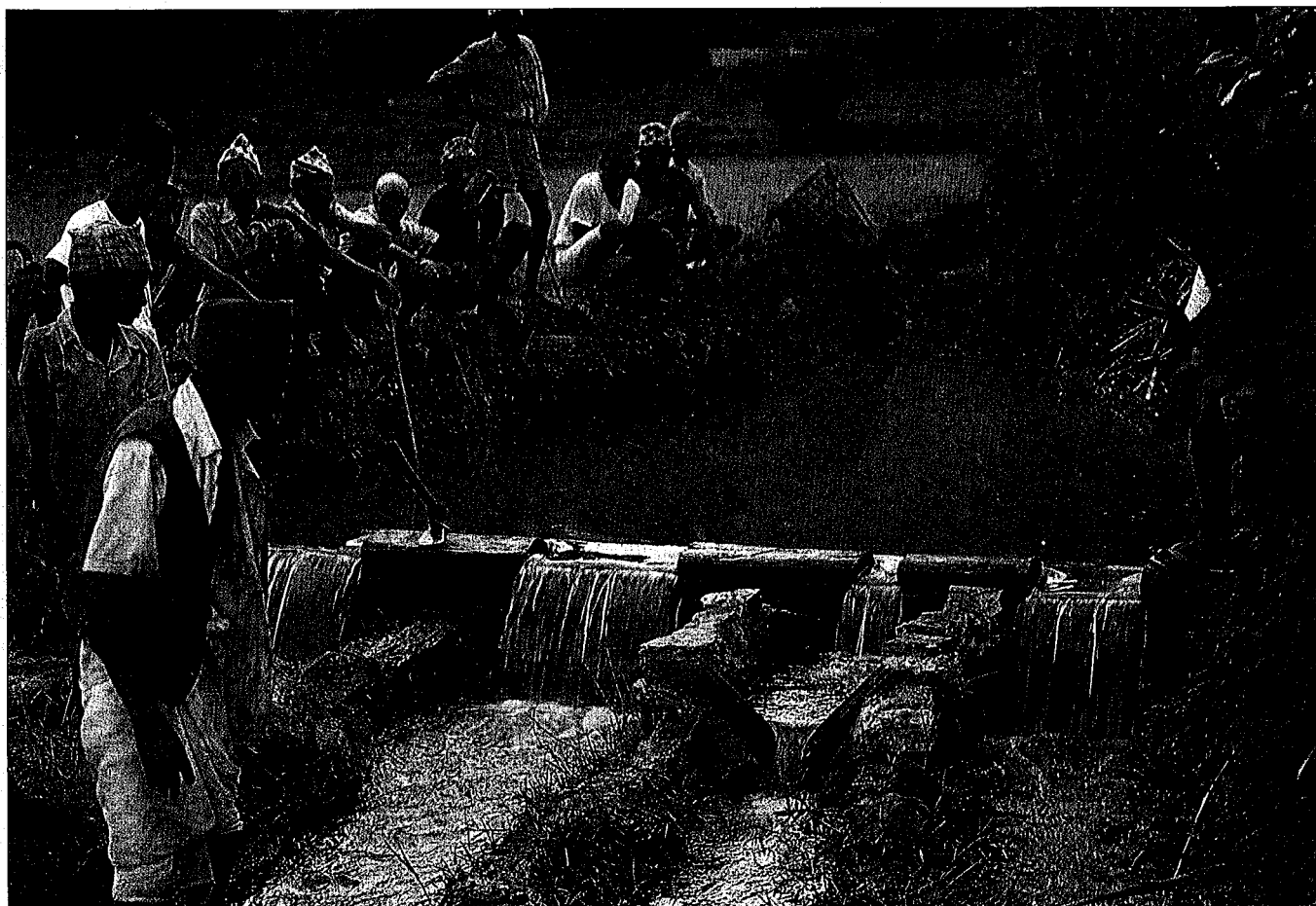
Director-General of International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and other prominent members from all over the world. IIMI's senior management including its Director General, Dr. Roberto Lenton and the Deputy Director General, Mr Khalid Mohtadullah also attended the meeting.

A delegation of the Board members, headed by Mr. Robert McNamara, called on President

Ghulam Ishaq Khan at the Aiwan-e-Sadr in Islamabad on 8th April.

The Board members also undertook a field visit to the Lower Chenab Canal Systems to assess the work already done by IIMI with its national partners which include Agriculture and Irrigation Departments and WAPDA.

National Workshop on Nongovernmental Organizations' Role in Irrigation Development and Management in Nepal



A workshop held in Nepal in September 1992 focused on local management of irrigation systems.

A workshop on NonGovernmental Organizations' (NGOs') Role in Irrigation Development and Management in Nepal brought together a large number of participants drawn from NGOs involved in irrigation development and management. This workshop, held in Lalitpur, Nepal on 29 and 30 September 1992, was organized jointly by the Agricultural Development Bank of Nepal and IIMI with support from the International Labour Organization, Special Public Works Program, Nepal.

The principal objectives of this workshop were to discuss the experiences and potential role of NGOs in irrigation development and management and to form a network to organize and train rural-based NGOs for irrigation development and management. The theme of the workshop was local management of irrigation systems. A noteworthy feature of the workshop was the contribution of papers by representatives of farmer groups from well-managed irrigation systems in Nepal.

A major outcome of the workshop was the appointment of a committee comprising 11 members including IIMI to form the network which will organize and train rural NGOs, match the rural NGOs' capability with agency and project consultants' needs, and train national NGOs in irrigation management. The proceedings of the workshop have been published in both English and Nepali languages.

CGIAR CHAIRMAN VISITS IIMI



Mr. Visvanathan Rajagopalan, the Chairman of the Consultative Group on International Agricultural Research (CGIAR) visited IIMI headquarters on 3rd February 1993 to learn more about the Institute's work as part of a fact-finding mission to several CGIAR Centers in Asia. Before his arrival at IIMI, Mr. Rajagopalan met with the Prime Minister of Sri Lanka, the Hon. D.B. Wijetunga. At IIMI, he met with the Directors and some senior staff of the Institute to acquaint himself with the Research Programs and Cross Cutting Themes.

Mr. Rajagopalan, a senior Vice President at the World Bank was appointed as CGIAR Chairman in the latter part of 1991. He is an alumnus of Johns Hopkins University and Madras University. Mr. Rajagopalan, who started his career as a civil servant in the Tamil Nadu Government, held several senior government posts in India before joining the World Bank in 1965.

PUBLICATIONS

COUNTRY PAPERS

Alfredo Valera

Irrigation Management for Diversified Cropping in Rice-Based Systems in the Philippines

Country Paper
The Philippines - No.1
ISBN 92-9090-142-X
December 1992. xvi+74pp. A5.
Softcover.

There are many factors affecting diversified cropping in irrigated areas in the dry season. Three of these — technical, institutional and economic factors — are discussed in this paper. Among the technical issues examined are land suitability (soil and topography) and water supply; among the institutional issues, on-farm water management and irrigation system management; among issues coming under both physical and institutional dimensions, reliability and distribution of irrigation water supply; and among economic issues which appear to dominate all other considerations, input

and output markets and profitability. If the findings and recommendations of this paper are implemented it will no doubt lead to the optimization of soil and water resources in irrigation systems for the production of both rice and non-rice crops in the dry season.

Leonardo S. Gonzales

Management Turnover of a Pump Irrigation System in the Philippines: The Farmers' Way

Country Paper - The Philippines - No.2
ISBN 92-9090-170-5
March 1993. xvi+89pp. A5. Softcover.

The implementation of the Farmer Irrigators' Organizing Project in a Pump Irrigation System of the Angat-Maasim Rivers Irrigation System employing selected and well-trained farmers in organizing co-farmers yielded several positive results: active Irrigators' Associations at field and distributary levels, reduced O & M costs, increased fee collection rates and more equitable distribution of water. Compared to the previous approach with professional organizers this approach showed that organizing activities can be shortened, made less expensive and be very effective. Moreover, this case study shows that

rehabilitation and institutional development must go hand in hand.

R. Sakthivadivel and Douglas J. Merrey

Flow Measurements at Drop Structures for Irrigation System Management in Sri Lanka

Country Paper - Sri Lanka - No.10
ISBN 92-9090-155-1
March 1993. xiv+54pp. A5. Softcover.

Two methods are suggested in this publication which provide simplified and cost-effective procedures for calibrating drop structures and/or updating drop structure calibration curves. The suggested procedures do not require altering of irrigation flow for calibration purposes. By just measuring one single discharge and the corresponding head at the upstream gauge post, the methods suggested make it possible to update the already existing calibration curve and also facilitate obtaining a similar curve for drop structures also of similar geometry. The convenience of the proposed methods outweighs the sacrifice in rigor and precision; in any event, the resulting degree of accuracy is sufficient for most practical purposes.

W.A.T. Abeysekera

**Rehabilitation of Irrigation Systems
in Sri Lanka: A Literature Review**

Country Paper - Sri Lanka - No.11
ISBN 92-9090-156-X
April 1993. xvi+100pp. A5. Softcover.

This study, prepared with funding from the USAID-sponsored Irrigation Systems Management Project, reviews the literature on five major rehabilitation and modernization projects in Sri Lanka to draw lessons about the most effective ways to carry out rehabilitation and modernization projects.

Documents consulted include project planning documents, project impact studies, project evaluations, and numerous other studies concerning these projects. The study touches on many aspects of these projects, including the correct balance between investment in physical works and management systems, the value of institutional development, and the effectiveness of different approaches to physical works. While the lessons drawn are of particular significance to Sri Lanka, they are also likely to be of interest to those concerned with planning, carrying out, and evaluating rehabilitation and modernization projects elsewhere.

WORKING PAPERS

Odile Oswald

**An Expert System for the Diagnosis
of Tank Irrigated Systems — A
Feasibility Study**

Working Paper No.22
December 1992. x+44pp. A4.
Softcover.
ISBN 92-9090-145-4

*J. Rey, M. Hemakumara,
S. Mohanrajah and M.H. Junaid*

**Introduction of Monitoring Activities
at the Main-Canal Level: A Study of
the Kirindi Oya Right Bank Main
Canal — Maha 1991/92**

Working Paper No.23
February 1993. x+66p. A4. Softcover.
ISBN 92-9090-190-X

**WORKSHOP
PROCEEDINGS**

**Proceedings of the National Work-
shop on Participatory Management
in Agency-Managed Irrigation
Systems in Nepal**

Department of Irrigation and Interna-
tional Irrigation Management Institute,
Nepal Field Operations

October 1992. vii+185. LS. Softcover.
ISBN 92-9090-180-2

**Role of NGOs in Irrigation
Development and Management in
Nepal**

Proceedings of the National Workshop
on the Role of NGOs in Irrigation
Development and Management in
Nepal, Nepal Administrative Staff
College, Jawalakhel, Lalitpur, Nepal,
29–30 September 1992.

*Editors: Ujjwal Pradhan, Alfredo
Valera and Sujata Rana*

IIMI-Nepal Field Operations and
Udaya-Himalaya Network
December 1992. B5. Softcover.
ISBN 92-9090-181-0

**Management Arrangements for
Accommodating Nonrice Crops in
Rice-Based Irrigation Systems**

Proceedings of the First Progress
Review and Coordination Workshop of
the Research Network on Irrigation
Management for Crop Diversification
in Rice-Based Systems (IMCD) held in
Quezon City, the Philippines. 10–14
December, 1990.

*Editors: Senen M. Miranda and Amado
R. Maglinao*

February 1993. viii+204pp. B5.
Softcover.
ISBN 92-9090-162-4

**Short Report Series on Irrigation
Management Transfer — No. 1.
“Can Farmers Afford to Use the
Wells after Turnover? A Study of
Pump Irrigation Turnover in
Indonesia”**

Sam H Johnson III and Peter Reiss

Program on Local Management, IIMI
April 1993. iv+22pp. B5. Softcover.

PERIODICALS

IIMI Review. Volume 6 No.2.

ISSN 1012-831X
December 1992. 24p. A4. Softcover.

**IIMI Review. Volume 6 No.1.
(Edicion En Español)**

ISSN 1012-831X
November 1992. 20p. A4. Softcover.

**IMIN Bibliography: A Selected
Bibliography on Irrigation Manage-
ment**

ISSN 1015-1680
Volume 5 No. 2.
March 1993. 87p+indexes. A4.
Softcover.

(Documents entered in the Irrigation
Management Information Network
Database, July – December 1991).

NEWSLETTERS

**FMIS. Newsletter of the Farmer-
Managed Irrigation Systems Net-
work**

ISSN 1012-988X
March 1993. No.11. 24p. A4.
Softcover.

**FMIS. Boletín de la Red de Sistemas
de Riego Administrados por los
Agricultores**

(Edicion En Español).

ISSN 1021-0849
November 1992. No.10. 24p. A4.
Softcover.

**IMCD News. Newsletter of the
Research Network for Irrigation
Management for Crop Diversifica-
tion in Rice-Based Systems**

ISSN 1016-7927
December 1992. Volume 3 No.1. 16p.
A4. Softcover.

STAFFING

Mr. Nanda Abeywickrema, formerly Director for Field Operations, has been redesignated as Director for International Cooperation. Mr. Abeywickrema, who joined IIMI in 1989, was earlier a member of the Sri Lanka Administrative Service, specializing in the agricultural sector. During the ten years prior to joining IIMI, he was the Secretary to the Ministry of Lands and Land Development, Government of Sri Lanka. Mr. Abeywickrema holds a bachelor's degree from the University of Ceylon and a Diploma in Development Studies from Cambridge University in the United Kingdom, and has been trained in Agricultural Planning at the FAO in Rome.

Dr. Ramesh Bhatia has been appointed as Leader, Performance Program. Dr. Bhatia, was earlier Water Resources Specialist at the World Bank. He has also served as a Visiting Associate Professor at the Department of City and Regional Planning and a Senior Fellow at the Center for Population Studies at Harvard University in 1974-75 and 1979-81 respectively. He received his PhD. in Economics from the Delhi School of Economics in India. Dr. Bhatia is a recognized authority on water resources planning and management in developing countries and the author of numerous papers and books on the subject.

Mr. Paul Gosselink joined the Research Division as an Associate Expert in January 1993 to work on the Performance Program. Mr. Gosselink, a Dutch national, is

a human geographer by training who has already had a variety of interesting experiences, including field work in Pakistan, teaching, and working as a bureaucrat in the Ministry of Foreign Affairs, the Hague, Netherlands.

Dr. Sam Johnson, formerly Deputy Executive Director at the Consortium for International Development (CID), has been appointed as Leader, Local Management Program. Dr. Johnson received a PhD. in Economics from Colorado State University, a masters degree in International Agricultural Development/ Agricultural Economics from the University of California at Davis, and a bachelor's degree in Industrial Engineering from University of Oklahoma. Prior to joining CID, he spent ten years at the University of Illinois as a member of the faculty in the Department of Agricultural Economics. He has extensive long-term overseas experience, including two years as Head of IIMI's Indonesia Program, two years in Pakistan as a member of Colorado State University's Water Management Project and four years in Thailand as an agricultural and resource specialist with the Ford Foundation.

Dr. Jacob Kijne, IIMI's former Director for Pakistan, has been appointed Director for Research. Dr. Kijne, whose main research interests are water management and water and salt balances under irrigation, received a Ph.D. in Soil Physics from Utah State University. A citizen of the Netherlands, he served as Principal of the National Agricultural College in Deventer,

the Netherlands and was a senior lecturer at the Department of Irrigation and Civil Engineering, Wageningen Agricultural University, prior to joining IIMI.

Dr. Douglas Merrey who has been with IIMI since 1985 has been appointed as Leader, Public Irrigation Organizations and Sector Management Programs. Dr. Merrey has served as Head of the Sri Lanka Field Operations from 1988 to 1991 and as Acting Head of the Performance Program at IIMI Headquarters for the past one year. Prior to joining IIMI, he was the Senior Social Science Advisor for Water Resources in the Science and Technology Bureau of USAID. He has also carried out research and acted as an advisor on farmer organizations for irrigation management in Pakistan and Sri Lanka.

Mr. Khalid Mohtadullah, formerly Director for Research, has been appointed Deputy Director General. An internationally recognized authority in irrigation and drainage, Mr. Mohtadullah was General Manager (Planning) of the Water and Power Development Agency (WAPDA) of the Government of Pakistan and held several senior professional positions in Pakistan including that of Principal of the WAPDA Academy at Tarbela. He has a master's degree in Civil Engineering from the Massachusetts Institute of Technology and has received advanced management training at the Harvard Business School.