

IIMI-PHILIPPINES PROGRAM'S EXPERIENCE IN STRENGTHENING NATIONAL CAPACITY

INTRODUCTION

Philippines is of special significance for IIMI in that, along with Sri Lanka, Nepal, Pakistan and Indonesia, it was in the initial group of countries in which IIMI established field offices. IIMI-Philippines program formally started in early 1985 with the posting of a Resident Scientist to commence a research project to identify constraints to non-rice cropping in the dry season. This project was funded by ADB technical assistance grant to the Government of the Philippines.

This note describes the experience of the program with respect to the goals of strengthening the capacity of three types of national institutions: I. irrigation management agency namely National Irrigation Administration, NIA, II. research institutions, and III. farmer organizations. Mainly through collaborative action-research, IIMI helped NIA to improve its capacity in managing irrigation as well as its capacity in conducting irrigation management research. Also, IIMI pioneered in introducing collaborative action research (in irrigation management) to selected universities at regional level. Moreover, the collaborative action research at system level IIMI helped the irrigators associations to improve their capacity. Finally, IIMI-Philippines program included collaborative research with other CG centres (IRRI and IFPRI). This had brought in more of international experience to strengthening national research and management capacities.

CONTEXT

Irrigation in the Philippines

In the Philippines, like in many other parts in South and Southeast Asia, investments in irrigation were considered crucial to development. A remarkable growth in irrigated area has been evident in the recent past: it has increased from 0.70 million to 1.47 million in two decades (1968-88). Today, approximately 0.65m, 0.70m and 0.16m areas are covered by large-scale National Irrigation Systems (NIS) managed jointly by NIA and farmers, communal irrigation systems managed by farmers and pump systems mostly managed by farmers, respectively.

This increase in area combined with high yielding crop varieties and the application of fertilizers and other agro-chemicals as well as management inputs have helped tremendously in increasing country's grain production. For instance, rice, the major crop in irrigated areas reported an output growth of 2.3 million tons to 6.1 million tons within the 20-year period referred to earlier. It has been recognized, however, that there is still considerable room for improvement in overall performance of irrigation systems. Hence, NIA has assumed an active role in the management improvements in existing systems. Also, unlike in many other Asian countries, in the Philippines, there is tremendous potential for increasing the area under irrigation. Unlike in the past, new constructions, however, would involve heavy costs.

Irrigation Institutions

NIA is the major institution dealing with irrigation in the Philippines. The establishment of NIA in 1963, which took over the responsibilities of the irrigation division of the Bureau of Public Works, has been considered a milestone in the national efforts to boost agricultural production, mainly through, building irrigation infrastructure to bring more arable land under irrigation. But in 1974 upon implementation of a Presidential decree, NIA began to recover the cost of construction from irrigation beneficiaries in the communal systems. Aside from this, the decree authorized the irrigation agency to establish Irrigators Associations (IAs) and to develop a joint management of irrigation systems with IAs. Hence, in the 1970s, a program was launched to involve farmers in irrigation management through IAs.

NIA's Institutional Development Program

The Philippines is among the most progressive Asian countries in implementing innovations in irrigation management. In both government-managed and farmer-managed systems, the Philippines experience offers important lessons to other countries which are interested in management innovations.

The NIA, in early 1970s was confronted with the problem of inadequate funding to support and sustain efficient operation. The situation was aggravated due to farmers hesitance to pay irrigation service fees, destruction of irrigation facilities in some cases and government's withdrawal of subsidy to NIA. Additionally, this has posed a challenge to NIA's survival as a viable corporation.

In response to this challenge, in the late 1970's, NIA launched its Institutional Development Programme (or the participatory approach) which was aimed at the formation, development and sustenance of functional, cohesive and viable Irrigators' Association (IAs) capable of managing partially or fully the Operation and Maintenance of irrigation systems.

Under NIA's Communal Irrigation Development Programme, the agency constructs irrigation systems with active participation of farmer beneficiaries and upon completion of this phase, the systems are turned over to IAs: subject to a cost recovery arrangement. Farmers participate in all stages of communal irrigation development, that is, from project identification, feasibility studies, construction, etc. up to the O&M of the completed systems. This process has helped in developing the capacity of the IAs in efficient system management and in instilling the feeling of system ownership among the farmers.

With the successful experience in the communal (small) systems, NIA applied the participatory management strategy in large-scale National Systems as well. Upon the acquisition of a legal status, the IA can enter into a contract with NIA. Aside from this, the association has to prove that it is capable of managing its affairs, particularly, the system's maintenance and the collection of Irrigation Service Fees (ISF). There are three types of contracts governing the NIA-IA partnership in the management of National Irrigation Systems. The NIA's current programmes and future plans are aimed at achieving full turnover or type III status in the majority of National Systems. Once the system-wide federation of IAs is established the complete turnover will take place. This means a complete devolution of the O&M functions.

An important lesson that can be learned from NIA-IA experience is the fact that the "turnover" has been considered (not in isolation but) as an integral component of the Institutional Development Process through which the IAs gain the capacity to deal with the complex socio-technical issues associated with the agricultural production process in general, and, the irrigation system management in particular. Once the recipient institution or the IA reaches this status system turnover would naturally appear as the next logical step.

Irrigation Research Institutions

Three types of local irrigation research institutions (involved in irrigation research) can be identified: Research division of NIA, Universities and other private research institutions. NIA's Research Division has a cell at the central office in Manila, under the Assistant Administrator for System Management. It has small branches at each regional office (12 regions). Staff strength as well as the strength/tradition in conducting irrigation management research are not that significant. Among the Universities, the tradition of conducting irrigation management research has been vested with three major Universities in Luzon: Central Luzon State University (CLSU), Institute of Philippines Culture (IPC) at Ateneo de Manila University and the University of Philippines at Los Banos (UPLB). IIMI, in collaboration with NIA, introduced irrigation management research to a few regional universities. Besides the Universities, only a few private institutions are engaged in irrigation-related research.

IIMI-Philippines Program

Institutional Linkages and Modalities

IIMI did not have a general Memorandum of Agreement with the Government of the Philippines. Instead, IIMI worked with donors, eg. Rockefeller, ADB, USAID; local agencies, such as NIA, Philippines Council for Agriculture, Forestry and Natural Resources Research and Development, PCARRD, (and its research consortia of State College and Universities); and International Institutions such as IRRI, under project specific Memoranda of Understanding or cooperative agreements. IIMI, however, developed a general MOU with its major client, NIA. Under this agreement, NIA provided IIMI with office space, access to data bases, etc. IIMI-Philippines collaborative research with universities was mainly through contracts. IIMI maintains close working relations with many other agencies, such as the Department of Agriculture, without formal agreements. Finally, IIMI also initiated the establishment of multi-agency steering committee at National level for crop diversification. In summary, IIMI's institutional linkages and modalities in the Philippines included formal project specific agreements, long-term general agreement with NIA, informal arrangements and National level steering committees. These arrangement/linkages themselves have helped strengthen the participatory agencies.

Research Advisory and Coordinating Committees

In order to oversee the research, all the projects had established Research and Study Advisory Committees (RAC or SAC). In addition, certain projects had co-ordination committees, mainly to co-ordinate research activities at regional or irrigation system level. To illustrate these arrangements, which had helped to augment research and management capacities, an account on the specific measures undertaken to strengthen research (including quality control) and develop

research partnership between NIA and research institutions under AAPP are given below:

I. The Role of NIA Regional Research Coordinator.

The chief of Research and Development Section of each of the three NIA regional offices had been identified as the liaison person between a) Research Institutes and NIA Regional Office, b) Regional Office and NIA-central office (through NIA regional Manager) and c) Research Institutions and IIMI Research Coordinator. For example, priority areas for NIA Regional Research, proposals and even the research designs were discussed at regional level before sending them to IIMI Research Coordinator. NIA Regional Research Coordinator (NIA-RRC) coordinated all these activities. The Institutional Development Division at the regional NIA offices (RIDD) played a significant role in all activities related to AAPP research.

II. Research Advisory Committee (RAC) at the National Level

The RAC was established to oversee the research component of the AAP irrigation program. It was chaired by the NIA Assistant Administrator for Systems Operation and Equipment Management (SOEM). The membership includes: Manager of the Institutional Development Department (IDD) of NIA and the NIA officer-in-charge of AAP, Chief, Research Division of the Systems Management Department of NIA, Chief, Communals Department of NIA, and Representatives from PCARRD, USAID and IIMI scientist.

III. Process Documentation Research (PDR) Report Consultation/Working Group Meetings.

As a regular feedback, monthly PDR reports were discussed first at system level and then at a Regional working group represented by NIA, Universities and IIMI resident scientist and feedback information were used in improving and effectively implementing the Farmer Irrigators' Organizing Activity in the AAPP Regions.

IV. Regional Research Review Committee

For non-PDR research projects, progress review meetings were conducted at the regional level.

FINANCING

Except for a few studies - such as IIMI-IFPRI one on financing policies and the study on "Organizational Dynamics of a Corporate Type Irrigation Agency" - all others have been financed through bilateral (or tri-partite, for example, IIMI-IRRI-Rockefeller project) agreements. Eg. Phases I and II of the diversified cropping was funded by ADB, the AAPP was funded by USAID through a co-operative agreement, etc.

ACTIVITIES

IIMI-research between 1985-91 included the following:

Irrigation Management for Crop Diversification (IMCD) funded by ADB (2 phases, 1985-90), Rockefeller Foundation funded IIMI-IRRI collaborative project on Irrigation Management for Rice based farming systems, Regional Study on Irrigation Service Fees funded by ADB, IIMI-IFPRI study on financing irrigation, study on "Organizational dynamics in a corporate type irrigation agency" (program/research division in collaboration with Philippines Field Operations), and the research component of the USAID funded Accelerated Agricultural Production Project, AAPP (1989-1990).

A brief account of some selected activities are given below:

IMCD - Phase I and Phase II

A major part of its work has addressed problems associated with managing rice-based irrigation systems for diversified cropping under conditions of water scarcity in the dry season. This research, funded primarily by ADB, carried out jointly with NIA and cooperating universities within the framework of the Philippine Council for Agriculture, Forestry, Resources, Research and Development (PCARRD), contributed to improve understanding of the management constraints and recommended policy measures which would promote crop diversification in irrigated areas. The study included an action - research component to field test irrigation management practices most likely to enhance the cultivation of selected non-rice crops.

Regional Study of Irrigation Service Fees

As part of an ADB-supported regional study on Irrigation Service Fees, done in 1985 and 1986, IIMI prepared a case study of irrigation financing policy and procedures in the country. This study and four other country case studies served as source material for a workshop on Irrigation Service Fees conducted by ADB in Manila in July 1986. Two reports and an IIMI publication - Financing Irrigation Services: A literature review and selected case studies, published in 1989 document the results of the study.

IIMI-IRRI Multi-Country Project

IIMI has also completed a collaborative research and professional development project with the International Rice Research Institute (IRRI) in the Philippines as well as in Indonesia and Bangladesh. This project was funded by the Rockefeller Foundation. The research in the Philippines, which was implemented in close collaboration with NIA, addressed various issues related to problems of irrigation management for rice-based farming systems.

Special Awards

Two irrigation professionals have been afforded the opportunity of writing up their respective experiences in the Philippines under IIMI auspices. One case study examined the organizing of irrigator associations in the Magat River Irrigation Project, while the other iterated the experience of Turnover of an irrigated pump scheme to farmer associations in Bulacaan. The arrangement for

special awards to such professionals offers opportunities that are mutually reinforcing and beneficial.

The Accelerated Agricultural Production Project

The Irrigation Research component of the Accelerated Agricultural Production Program (AAPP) funded by USAID, aimed at strengthening NIA's capacity to conduct and manage research carried out through regional universities, and to interpret and use research results. This research program intended to find ways and means to improve the overall performance of irrigation systems by improving the performance of irrigators' associations, NIA at different levels of management, and to a limited extent, the physical apparatus. The ultimate goal of the projects was to strengthen irrigators' associations and NIA's ability to improve and sustain the performance of irrigation systems in a cost-effective manner.

The research agenda range from the assessment of the performance of the farmer irrigators' organizers program in AAPP regions, through investigation into the performance and sustainability of Irrigators' Associations in communal and state-owned systems, to trial efforts to streamline and strengthen the operations of Provincial Irrigation Offices. Work was also started to examine Design-management interactions and to assess the impact of NIA training and contribute to knowledge on monitoring the performance of irrigation systems. The research has been contracted out to nine universities and research institutions, providing excellent opportunities for them to gain experience in action research and work with a key operating agency of Government. To augment the performance evaluation initiative, a comprehensive program of water flow measurement had been introduced in selected irrigation systems. IIMI provided technical inputs and facilitated the research process.

In 1990, initiative to field-test potentially productive management changes identified by the Irrigation Research component of the AAPP were mounted jointly with NIA and participating universities. IIMI provided technical assistance to NIA and associated university groups to translate major findings into intervention strategies and detailed implementation schedules. Field testing of these innovations was conducted jointly by NIA-Universities, IAs and IIMI.

Strengthening Irrigated Associations and Self-Evaluation by Farmers (FMIS)

Initiated in March 1992 and continuing till March 1994, this pilot intervention to strengthen the management capability of irrigators associations in the Bicol Region is being undertaken with the assistance of Bicol University, collaborating with NIA. It is funded under the FMIS Program of IIMI. This is the second phase of an action-research project initiated under AAPP.

Policy of Financing of Irrigation Services

IIMI had also collaborated with NIA and the International Food Policy Research Institute (IFPRI) in a study which analyses the evolution of Philippine policy regarding the financing of irrigation services, and the impact of changes in this policy on NIA and irrigation system performance.

Organizational Dynamics in Irrigation Organizations

In 1990, IIMI conducted a detailed study on organizational dynamics in irrigation organizations. The Philippines (NIA) is part of a systematic study of functions of irrigation organizations in Asia which hopes to identify and resolve organizational problems and determine where improvements can be made to increase organizational effectiveness, productivity and employee morale. The results of this study is available and will be published shortly.

Committee on Diversified Crops

Another notable achievement of the IIMI-Philippines Field Operations was assisting in the establishment of a high-level policy-making committee on Irrigation Management for Diversified Cropping in Rice-based Systems in the Philippines. This will work in close collaboration with the regional network already established.

RESULTS AND ANALYSIS

Strengthening National Research Capacity

As IIMI had worked in close collaboration with national partners, mainly NIA and Universities, the research process over the past five years helped enhance the research capacity of NIA research division as well as the Universities.

The ADB funded project on Crop Diversification provided an opportunity to NIA research division and collaborative Universities to test the research recommendations in farmers' fields and to identify field constraints both management and technical. In the Rockefeller funded project on irrigation management for rice based systems IRRI brought to the (NIA-University-IIMI-IRRI) collaborative relationship its expertise related to rice-based agricultural systems and IIMI its experience and expertise in irrigation system management. This combination permitted an integration that enabled consideration of a broad range of water-related problems from a holistic perspective. IIMI and IRRI brought to the Philippines the experiences and research findings of other countries as well. NIA's research division and collaborative universities were able to strengthen their capacities on irrigated rice-based farming systems.

Better water control at system level, water augmentation through the use of shallow groundwater, system characterization and mapping, more accurate methods of predicting available water, crop scheduling and simulation were among the strategies identified by the project. Field testing of selected innovations had proved their profitability especially in terms of water and land productivity.

The collaborative action-research under the AAPP provided an excellent opportunity to enhance the research capacity of both NIA's research division, especially at regional level, and of the participatory universities. The participatory action mode adopted through institutional linkages described earlier in all phases of research and development - design, conduct research to generate knowledge (management innovations), field testing, assessing output, etc. - has helped NIA and collaborating universities to develop partnership and improve skills in the conduct of impact-oriented action-research and in objective measurement of the output.

As indicated earlier, a large number of workshops, co-ordinating meetings and review sessions were held continuously. These were useful in refining methodologies and in continuous M&E of the action-research process. A unique feature of this research was that, at the end of the first (diagnostic) phase, the recommendations have been prioritized and translated into implementation schedules to test their validity in improving system performance. This was clearly a new experience for the research partners of IIMI.

The package of tested innovations included the following: I. task based small group formation within IAs (to bridge the leader-member "gap", improve participation and the efficiency in O&M tasks), II. utilization of farmer-training-farmer concept, III self-assessment of performance by IAs, IV. production and distribution of Information, Education and Communication (IEC) materials (for instance, for the first time in the Philippines, the IA constitutions and by-laws, NIA-IA contracts, etc. were translated into local languages and put into brochures, leaflets, posters/wallnews, etc.) and V. utilization of NIA's O&M staff in institutional function. (This has also helped reduce conflict between O&M staff and IAs - as IA strengthens the services of lower level O&M staff become largely redundant).

STRENGTHEN MANAGEMENT CAPACITY OF NATIONAL INSTITUTIONS

National Level

At the sector or national level, IIMI activities contributed clearly to the strengthening of NIA capacity in managing irrigation. First, IIMI helped NIA management to carefully examine and refine the irrigation sector review prepared by a team of consultants. As a consequence, several major recommendations have been modified. Second, the IIMI analyses (in collaboration with NIA and other organizations) of such policies as irrigation service fee and financing irrigation, have contributed significantly to NIA's understanding of such policies and helped enhance its capacity in policy analysis. Third, the participatory project design process catalyzed by IIMI has provided NIA management at various levels to work closely with researchers and farmer representatives; and helped improve NIA's capacity in developing cost-effective projects to match with country's needs. Fourth, IIMI's initiative in establishing a steering committee for crop diversification, at national level, has helped NIA, DA, and other relevant policy making bodies to develop country's policy and to monitor and evaluate such policies on crop diversification. Fifth, IIMI's direct contributions to professional development (through training, collaborative action research, etc.) and information and training services (for instance IIMI developed a detailed manual on farmer organizations and provided substantial technical inputs to seven other manuals) have helped strengthen national capacity. Sixth, IIMI helped NIA to assess its national programs country-wide (for example, to assess the farmer irrigators organizer program IIMI developed novel methodologies combining participant observation techniques and statistical validation of the results generated from such techniques country-wide). Finally, the research partnerships established through collaborative action research have helped improve NIA's capacity in managing irrigation. Moreover, the collaborative research mode implemented through institutional linkages described earlier, has helped strengthen NIA's capacity in research management.

Other Levels

At the regional level, the role and the strength of NIA's research division, in the three AAPP regions, have been clearly strengthened. Also, new "institutions" - such as working groups to assess the progress of IAs - were established. Moreover, the NIA capacity in dealing with IAs has been strengthened in three regions.

The participatory action research helped improve the capacity of IAs in the field sites selected for pilot testing. A good example would be the self-correcting mechanisms introduced by AAPP research in the Bicol region. The initial results of this experiment are indicated below.

IMPACT

It is difficult to evaluate all the impacts more accurately. However, certain impact areas and outputs have been assessed. The assessment was focussed at the irrigation system level.

For example, the results of impact evaluation of AAPP action-research indicate clearly the program success in both institutional and O&M performance aspects. A few, more specific outcomes are given below:

- i. the participation of farmers through group action in irrigation-related activities improved;
- ii. the interaction between NIA and IAs enhanced;
- iii. the IA involvement in irrigation service fee collection improved;
- iv. the O&M of pilot areas improved;
- v. conflicts reduced; and
- vi. irrigation service fee collection increased.

All these impact/output areas have been closely examined using econometric and statistical as well as qualitative analytical techniques ("intervention Research - Methods and Effects" - An Analysis Based on Philippines Experience, forthcoming). It is too early to measure the impact of field interventions on the living standards of beneficiaries and the results of sector-level interventions.

CONCLUSION

In sum, IIMI has developed close collaborative working relationship with its major clients in the Philippines. The participatory action research mode - which was supported by the generation of cost-effective management innovations for improving irrigation system performance, development and dissemination of information etc. - has helped significantly to strengthen a) the research capacity of NIA and collaborating research institutions; b) management capacity of NIA and the IAs. The IIMI program in the Philippines has evolved fast to make a quick progression from field research to institutional building and quite recently sector-related policy activities. It has thus demonstrated a long-term commitment to a broad-based program of applied and impact-oriented research on irrigation management issues in the Philippines.