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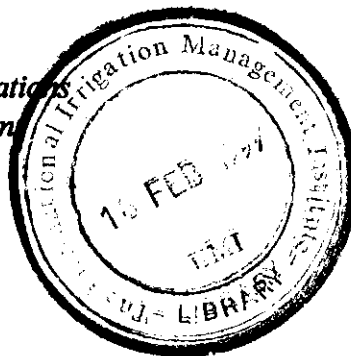
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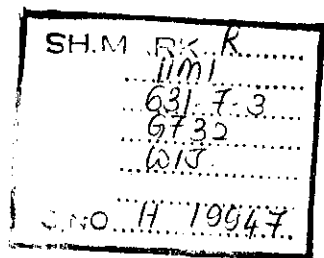
Philippines

## Participatory Action Research

*Strengthening Farmer Organizations  
and Agency-Farmer Relations*



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and  
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INTERNATIONAL IRRIGATION MANAGEMENT INSTITUTE

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Region VI	Central Philippine University, Panay State Polytechnic College, University of the Philippines in the Visayas, West Visayas State University, and
Region X	Central Mindanao University, Xavier University.

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## **Acronyms and Abbreviations**

AAPP	-	Accelerated Agricultural Production Project
BLDC	-	Basic Leadership Development Course
CRIS	-	Cagaycay River Irrigation System
FIO	-	Farmer Irrigators' Organizer
FIOP	-	Farmer Irrigators' Organization Program
FIOS	-	Farmer Irrigators' Organizing Supervisor
FMST	-	Financial Management System Training
FSDC	-	Farm System Development Corporation
IA	-	Irrigators' Association
IALIC	-	Irrigators' Association Leadership Installation Course
ICO	-	Irrigation Community Organizer
ICOP	-	Irrigation Community Organization Program
IDO	-	Institutional Development Officer
IOW	-	Irrigation Organization Worker
IOSP	-	Irrigation Organization Support Project
IPC	-	Institute of Philippine Culture
IS	-	Irrigation Superintendent
ISF	-	Irrigation Service Fee
JET	-	Job Enrichment Training
JRIS	-	Jalaur River Irrigation System
NGO	-	Nongovernment Organization
NIA	-	National Irrigation Administration
NIS	-	National Irrigation System
O&M	-	Operation and Maintenance
PD	-	Process Documentor
PDR	-	Process Documentation Research
PRIS	-	Pulangui River Irrigation System
RAC	-	Research Advisory Committee
RIDD	-	Regional Institutional Development Division
SEC	-	Securities and Exchange Commission
SMT	-	System Management Training
SRIS	-	Suague River Irrigation System
TSA	-	Turnout Service Area
TSAL	-	Turnout Service Area Leader
UPRIIS	-	Upper Pampanga River Integrated Irrigation System
USAID	-	United States Agency for International Development
WRFT	-	Water Resource Facilities Technician

# CHAPTER 1

## Introduction and Objectives

### INTRODUCTION

IN THE PHILIPPINES, as in other parts of South and Southeast Asia, investments in irrigation have, for sometime, been considered crucial to development. A remarkable growth in irrigated area has been evident in the recent past: from 0.70 million hectares/(M ha) to 1.5/M ha in just two and a half decades (1968-93). Today, approximately 0.65, 0.73 and 0.16/M ha are covered by large-scale National Irrigation Systems (NIS) managed jointly by the National Irrigation Administration (NIA) and the farmers, and by Communal Irrigation Systems (CIS) and Pump Systems managed by farmers.

This increase in area combined with high-yielding crop varieties, the application of fertilizers and other agro-chemicals as well as with management inputs have all helped tremendously in increasing the country's grain production. In fact, rice, the major crop in irrigated areas reported an output growth from 2.3 million tons (Mt) to 9.1/Mt within the period 1968-1993. Moreover, the Philippines is among the most progressive Asian countries in implementing innovations in irrigation management. In both government-managed and farmer-managed systems, the Philippine experience offers important lessons to other countries planning to implement similar innovations. For instance, involvement of farmers in all facets of irrigation development has been an integral component of the NIA's management approach. It has been recognized, however, that there is still considerable room for improvement in the overall performance of irrigation systems. Hence, NIA has assumed an active role in instituting management improvements in existing systems. Also in the Philippines, unlike in many other Asian countries, there is tremendous potential for increasing the area under irrigation. Unlike in the past, new constructions would involve heavy costs.

## **EVOLUTION OF IRRIGATORS' ASSOCIATIONS**

Several stages can be identified in the evolution of the process of participatory management of irrigation systems in the Philippines. Prior to the national government's intervention, there existed indigenous irrigation societies that constructed and managed their own irrigation systems. The Irrigation Act of 1912 can be regarded as a notable step in government intervention. This Act authorized the then Irrigation Division of the Bureau of Public Works to manage irrigation systems it had built. Another provision of the new law provided for the regulation of rights to public waters, including water used in national, communal and private irrigation systems. The Act also formalized the concept of Irrigators' Association (IA) as a legal body authorized to manage a communal irrigation system. These associations were registered under the nation's Corporation Law with the power to manage their irrigation systems, to elect officials and to compel members to contribute to the cost of managing the irrigation systems in proportion to the benefits they derived.

In 1963, the National Irrigation Administration (NIA) was established with a mandate to develop irrigation systems and to provide for timely, adequate and reliable delivery of irrigation services. Early on, NIA was confronted with the problem of inadequate funding to support and sustain efficient operation. The situation was later aggravated by the farmers' hesitance to pay irrigation service fees (ISF), the destruction of irrigation facilities in some cases and the government's withdrawal of subsidy to NIA. Additionally, this posed a challenge to NIA's survival as a viable corporation.

In response to this challenge, late in the 1970s, NIA launched its Institutional Development Program (or the participatory approach) which was aimed at the formation, development and sustenance of functional, cohesive and viable Irrigators' Associations (IAs) capable of managing, either partially or fully, the operation and maintenance (O&M) of irrigation systems.

Under NIA's Communal Irrigation Development Program, the agency constructs irrigation systems with the 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 to efficiently manage the systems, aside from instilling among the farmers a sense of ownership of the systems.

With the successful experience in the communal (small) systems, NIA applied the participatory management strategy in large-scale national irrigation systems as well. In this particular type of system, NIA started to organize farmers through the Irrigation Community Organization Program (ICOP) in 1980. The approach of this program was similar to that of the participatory approach in the communal irrigation systems. But in the case of national irrigation systems, the high O&M costs and low ISF collections had to be considered. Despite these circumstances, the ICOP yielded positive results such as: (a) organization of cohesive IAs capable of system maintenance, (b) reduced O&M cost through reduction of O&M personnel, (c) farmer's partial or full management of the irrigation system, (d) equitable water distribution, and (e) effective resolution of internal conflicts. These results prompted NIA to implement the program on a nationwide basis, mostly in marginal systems.

The implementation of the ICOP also led to the implementation of the Farmer Irrigators' Organization Program (FIOP). In the latter, the farmers themselves were used to organize their co-farmers in the National Irrigation Systems. This program was primarily based on the following assumptions: (a) cost reduction in direct organizing without sacrificing project effectiveness; (b) the utilization of farmers as organizers directly develop the organizing capabilities among some members of the irrigation community; (c) selected farmer organizers who are currently trusted and respected by the majority of the farmers in the irrigation community have advantages over external organizers on the areas of integration; contact-building and leader identification were made easier because of their knowledge, experience and familiarity of the irrigation community; (d) the project hastens farmers' reliance on themselves for organizational associations due to the increase of the frontline organizing manpower with much-reduced deployment area; and (e) FIOP also upholds NIA's participatory approach to irrigation development (FIOP Project Proposal 1983).

In the NIS, when an IA acquires a legal status, it can enter into a contract with NIA. However, the association has to prove that it is capable of managing its affairs, particularly the system's maintenance and the collection of ISF. There are three types of contracts governing the NIA-IA partnership in the management of national irrigation systems. Type I contract entitles the IA to undertake canal maintenance while Type II contract allows the

association to collect ISF and retain a portion of the collection according to the NIA-IA incentive schedule. Type III contract stipulates that the IA amortizes the cost of the system's construction. This particular type of contract can be executed on a partial or total turnover of management.

With NIA's efforts toward institutional development and turnover of irrigation systems, in the recent past, donor-assisted irrigation projects have included the development of IAs and irrigation management transfer as major components in project implementation.

### **RATIONALE FOR RESEARCH INTERVENTIONS**

The Accelerated Agricultural Production Program (AAPP) in the Philippines was formulated in 1987 by the United States Agency for International Development (USAID), the Department of Agriculture of the Philippines (DA) and the National Irrigation Administration (NIA) as part of the recovery program of the Aquino administration.

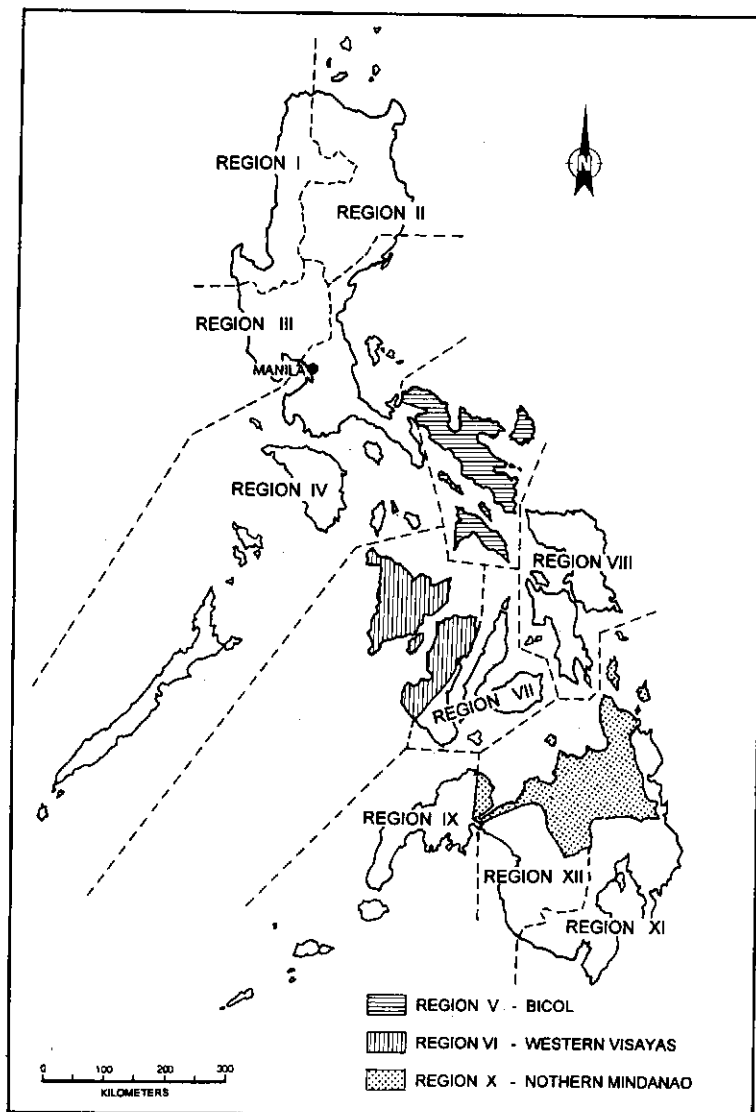
The major purpose of this program was to increase the profitability and productivity of agricultural production by (a) improving governmental and private support services to farmers; (b) identifying and supporting means of creating more efficient markets for agricultural inputs and products; and (c) improving the basis of agricultural policy and program formulation and implementation.

Under the Accelerated Agricultural Production Project, NIA was tasked to implement the irrigation component of the program. This irrigation component was started by the agency in January 1987 to support the government's mission on agricultural development. The grant-in-aid project funded by the USAID, covered 30 NIS with a total area of 92,952 ha and 473 CIS with a total area of 54,756 ha. Only three regions in the country were covered by the project and these were: Region V (Bicol), Region VI (Western Visayas) and Region X (Central Mindanao) (figure 1).

This program was formulated with the following objectives:

- to improve reliability of water delivery at the farm level
- to maximize the utilization of existing irrigation water

*Figure 1. Regional map of the Philippines showing the three study regions.*



- to develop NIA's capacity to support IAs in carrying out their O&M responsibilities

Among the major components of the Irrigation Project of the AAPP were: organization and strengthening of IAs (mainly through training programs), training of NIA staff, minor repairs and research on irrigation.

Under research, a cooperative agreement was reached between the National Irrigation Administration (NIA), the International Irrigation Management Institute (IIMI) and USAID. Under the agreement, IIMI was required to provide the principal technical assistance to NIA in special studies and in the research element of the irrigation component of the AAPP. It also aimed to strengthen NIA's capacity to *conduct and manage research* carried out through subcontracts with research institutions, and to *interpret and use* research results.

Specifically, the research component of the AAPP was designed to:

- evaluate, refine and improve NIA's present package of *management innovations*
- identify, develop, field-test and evaluate new management innovations to strengthen (a) IAs, (b) NIA's ability to work within IAs, and (c) NIA's ability to improve and sustain the performance of irrigation systems cost-effectively
- in support of the first two, to assist NIA in strengthening its capacity to conduct and manage applied research and special studies

The irrigation research component adopted measures to:

- develop partnership between NIA and research institutions
- enhance NIA's capacity to manage research
- adopt research results to the management of the system (as an ongoing feedback mechanism of research)

In addition, the research program aimed at improving the following:

- Overall performance of irrigation systems.
- Performance of NIA at different levels, i.e., Regional Offices, Provincial Irrigation Offices (PIO), and system offices.
- Performance of IAs and farmer-irrigator organizers. The agreement between the agencies facilitated a diagnostic research in 1989-1991 which was conducted in collaboration with the following nine universities in the AAPP regions with adequate exposure on irrigation management research.

Region V - Ateneo de Naga University (Aden), Bicol University (BU), and Camarines Sur State Agricultural College (CSSAC).

Region VI - Central Philippine University (CPU), Panay State Polytechnic College (PSPC), University of the Philippines in the Visayas (UPV), and West Visayas State University (WVSU).

Region X - Central Mindanao University (CMU), and Xavier University (XU).

The Philippine Council for Agriculture, Forestry, Resources Research and Development (PCARRD) and the Central Luzon State University (CLSU), as members of the Research Advisory Committee (RAC) of the project, also contributed to the research effort. The themes of the researches made were the following:

#### **Performance of Irrigation Systems with Special Reference to IAs**

The universities that conducted researches in collaboration with IIMI under this theme were the following: Bicol University (Region V), West Visayas State University (Region VI), and the Central Mindanao University (Region X). Studies under this theme dealt mostly with the assessment of the



performance of NIS and/or CIS in connection with the performance and involvement of IAs in specific systems.

#### **Management of Provincial Irrigation Offices (PIOs)**

Studies in this aspect were about the operations and functions of PIOs. These studies were conducted by the Camarines Sur State Agricultural College and the University of the Philippines in the Visayas.

#### **Impact of Training Programs Conducted by NIA**

This research was done to assess the impact of NIA training programs such as the Basic Leadership Development Course (BLDC), System Management Training (SMT) including Water Management and Agricultural Technology, and the Financial Management Training (FMT) to the IAs. This research was conducted by the Ateneo de Naga University, Panay State Polytechnic College and the Central Mindanao University.

#### **Design and Management Interactions**

This research was conducted to evaluate the design and management interactions in the CIS in the Western Visayas Region conducted by the Central Philippine University. The general objective of this study was to review the designs of the existing CIS in the region and to identify various factors that cause discrepancies between the designs and actual performance of the CIS.

#### **Farmer Irrigators' Organization Program (FIOP)**

This study was conducted to examine the organizing process and management of FIOP then being implemented by NIA. Such schemes were examined by three methodologies: process documentation research, validation workshops and validation questionnaire survey.

### Irrigation Service Fee Collection

The study was conducted to determine whether there is a relationship between the farmer irrigators' attitudes and their ISF payments. The study also aimed to identify socioeconomic variables that are said to have effects on the farmers' ISF payment.

The studies conducted were considered as Phase I of the research activities of the concerned agencies under the Accelerated Agricultural Production Project. Based on the findings and recommendations of the studies under Phase I of the AAPP/IP, it was found that the performance of the IAs in terms of participation in activities (such as planning, organizing, directing, coordinating, operation and maintenance, collection of ISF and amortization, evaluation, problem-solving, budgeting and attendance in the organizations' regular meetings, general assemblies and *bayanihan* [group works]) is very much limited in some, if not most, of the activities.

Through a series of planning workshops and meetings held at both national and regional levels, action plans were developed jointly by NIA, IIMI and the universities involved to improve and strengthen IAs. Hence, this report attempts to describe the process employed by the concerned institutions in implementing their action plans and the initial results achieved as well as the constraints faced by their intervention.

Action research was based on the concept of bringing about change step-by-step through group participation.<sup>1</sup> When action research was implemented, several changes in the present setup were introduced. And as it progressed modifications were done to fit the program. "Action research was focused on the immediate application, not on the development of theory nor upon general application."<sup>2</sup>

The implementation of action researches in irrigation must produce techniques and procedures on how to effectively manage the irrigation systems. A research in irrigation systems involves studies in the aspects of engineering, agronomic, economic and human behavior. Because of the *interactive influences of various aspects and features of the systems*, a study on a system component alone has often led to wrong conclusions. The study of the system should also focus on the farms, farmers and their practices and

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<sup>1</sup> Good, Carter V. et al. 1972. *Methods of Research* (Educational, Psychological and Sociological).

<sup>2</sup> Best, John W. 1981. *Research in Education*, Prentice-Hall Inc., Englewood Cliffs, New Jersey.

needs to come to significant and correct conclusions. The implementation of the action research may involve the entire small or large system or part of a large system. It can be a minor distributary or a branch canal (Peterson 1983).

Normally, the implementation of the action research involves the following:<sup>3</sup>

- benchmark surveys
- diagnostic analysis, prioritization of key constraints and the choice of interventions
- implementation of priority interventions
- monitoring and evaluation of intervention
- identifying lessons learned
- extending the learning to others as well as to other systems (technology transfer)
- application of the findings of the studies for improvement of existing systems

Action research under the AAPP was implemented in a manner similar to what was stated above. This was done to strengthen the goals and objectives of the AAPP which constituted developing a core of sustainable and stable national and communal irrigation systems by restoring NIA's institutional development program to maximal effectiveness (Laitos 1988).

To improve and strengthen the IAs involved in this study, the action and/or intervention research was introduced in some selected IAs. The action research as defined by Peterson (1983) is a "study carried out on live system deficiencies, implementation of corrective actions and monitoring to determine improvement in the system performance." This particular research technique educates through action. A system is closely monitored and programs as well as plans are refined as implementation continues.

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<sup>3</sup> Peterson, D.F. et al. 1983.

This report is organized into two parts, the first consisting of the introduction and the design process and the second consisting of case studies. These case studies are the action and intervention researches made in the three AAPP regions by selected universities.

Case No. 5 is a special form of action research namely Process Documentation Research (PDR). IIMI designed and implemented PDR in three selected National Irrigation Systems in the three regions covered by the AAPP. The actual PDR, however, was carried out by: a) the Ateneo de Naga University (Region V), b) the Central Philippine University (Region VI), and c) the Xavier University (Region X) from July 1989 to July 1990. Initial training for Process Documentation Researchers was provided by the Institute of Philippine Culture (IPC). At the end, IIMI conducted a validation process through a series of workshops and a questionnaire survey, to check the validity of findings in non-PDR areas (and country-wide). An in-depth analysis of this research can be found in a forthcoming IIMI publication titled *Farmers Organizing Farmers*.



## CHAPTER 2

### Design Process of Research Interventions

THIS CHAPTER WHICH describes the processes involved in the intervention research, is divided into three parts: (a) **the research phase** which describes the activities and research done under Phase I of the irrigation component of the AAPP; (b) **planning research interventions** which describes the processes and activities involved before the implementation of the intervention program; and (c) the discussion on the **development of the action plans**.

#### THE RESEARCH PHASE

Under the Accelerated Agricultural Production Project (AAPP), the National Irrigation Administration (NIA), the International Irrigation Management Institute (IIMI) and various regional universities conducted studies on regions covered by the AAPP. The general objective of the AAPP-irrigation research was *to support and refine the 'institutional thrust' of NIA* (IIMI-USAID Cooperative Agreement). It aimed at strengthening the ability of the IAs and NIS *to improve and sustain the performance* of irrigation systems in a cost-effective manner.

To accomplish such objectives, six major themes described below were identified.

#### The Performance of Irrigation Systems with Special Reference to IAs

The performance of irrigation systems with special reference to IAs was studied in collaboration with IIMI by the Bicol University in Region V, the

West Visayas State University in Region VI and the Central Mindanao University in Region X.

### Major Findings

**Region V - Bicol University.** There were four National Irrigation Systems (NIS) involved in this study: Mahaba-Nasisi-Ogsong-Hibiga (MNOH) River Irrigation System (RIS), Daet Talisay RIS, Buhi-Lalo RIS and the Inarihan RIS. To assess the performance and sustainability of the irrigation systems, the university employed the following variables:

- Indicators of the performance of the system—viability index, collection rate, years of operation, cropping intensity, production efficiency and water availability.
- Organizational variables—measured through evaluation by several indicators at five levels: *very much, much, somewhat, a little, none at all*. Some of these variables are: commitment of members, risk-taking behavior, autonomy and flexibility, clarity of goals and objectives, trust and openness and warmth and support.

During the evaluation following the study, it was revealed that the irrigation systems included in the study have a relatively good/high viability index. Specifically, the MNOH RIS which is under the Type III contract with the NIA had the highest index compared to the other NIS under the Type I and II contracts. Although the yield is not directly affected by the organizational environment in the association, the study was able to establish a link between this variable and the farm output. It was revealed that although there was adequate water in the main canal, the flow of water would be relatively low, if the maintenance of the lateral is not adequate, resulting in low yield.

Sample IAs were evaluated according to their respective performances and it was found out that a few of the members of the association were committed to the organization and a few were willing to disagree with the leaders without fear of repercussions. The study also revealed that a large number of the IA members were not aware of the IA's goals and objectives.

It was also found that participation of the members with regard to the IA activities was limited.

***Region VI - West Visayas State University.*** The study conducted by this university made use of the survey method, utilizing both the communal and the national irrigation systems. The national systems included in this study were the Bago RIS, Pangiplan RIS and the Sibalom RIS. Some indicators of performance and sustainability used in this particular activity were the following:

- system performance which includes indicators as production, cropping intensity, and water distribution
- organizational variables which include indicators as personal variables (members' characteristics as well as the members' value systems), environmental variables (social, economic and political environment) and system-related variables (such as management of a cropping calendar)

According to the study, the viability indices of the systems involved were not much different from those in the Bicol Region.

With regard to the organizational values, the study revealed that the farmer beneficiaries expressed satisfaction over the benefits they derived from irrigation, although others commented that water delivered, in general, was not enough for their crops.

It was also revealed in the study that participation of IA members in the activities of the organization was limited. This happened in spite of the fact that the organization offers incentives to farmers to help motivate them in joining the IA activities. Sanctions are also enforced upon those who violate or do not join the activities of the association. However, some of these sanctions prove useless since they could not get the other members to participate fully in the IA activities.

***Region X - Central Mindanao University.*** The study conducted by the Central Mindanao University under this theme employed both the "case study" and the "survey method." These tools were used to gather organizational and related data as well as the actual water measurements.



The systems covered by this study included two National Irrigation Systems (NIS), Pulangi RIS and Andanan RIS, and six Communal Irrigation Systems (CIS), Boan CIS, Upper Hubang CIS, Bucac CIS, New Ilocos CIS, Kisolon CIS and Springside CIS.

Several indicators used which relate to the performance of the system were:

- technical factors which include water utilization, water distribution, extent of area irrigated, systems maintenance and quality of farm roads
- socioeconomic factors which include the IA's efficiency in financial management, quality of processing practices, quality of marketing practices, fee/amortization collection efficiency and the assessment of the awareness of the members about the nature and characteristics of the IA
- administrative and organizational factors which include the degree of participation of the members in the IA's regular meetings and general assembly, quality of leadership performance, participation of IA members in IA's managerial activities, extent of the effectiveness of the sanctions imposed by the IA to violators of rules and guidelines, IA leaders' management style and the actual benefits the farmers receive
- level of farm technology
- performance factors such as the average yield, systems production efficiency, systems viability and the satisfaction of members on the benefits they enjoy because of the presence of irrigation facilities

One of the major findings of this study was that the two NIS revealed a relatively high viability index but with a relatively low collection efficiency. This implies that the system does not rely mainly on the collection of irrigation service fees but on other sources of income such as the rentals as well as the sale of unserviceable equipment.

Regarding the organizational climate within the IAs in the sampled systems, the study revealed that the majority of the farmers in the systems

involved expressed satisfaction over the inputs of irrigation. Specifically, these inputs are the following: water distribution and allocation, irrigation practices, actual O&M, NIA's assistance to the IA in the system O&M, leadership and management of the IA, decision making and members' attendance in meetings and their cooperation. The members also expressed satisfaction over the outputs of irrigation such as the increase in harvest, improvement in the standard of living and the employment generated because of irrigation.

The participation of the members was also assessed and it was found that the majority of the members participated in IA activities although on a limited scale.

### **The Performance of Provincial Irrigation Offices (PIOs) of NIA**

The Performance of PIOs of NIA was studied in collaboration with IIMI by the following universities: the Camarines Sur State Agricultural College (CSSAC) in Region V and the University of the Philippines in the Visayas in Region VI.

### **Major Findings**

***Region V - Camarines Sur State Agricultural College (CSSAC).*** This study focused on 6 provincial irrigation engineers and 18 section chiefs of the Provincial Irrigation Office in Camarines Sur. The objective of the study was to identify ways and means by which the PIO could improve its effectiveness in serving the needs of communal systems throughout the province in which it is located. The major finding of the study was that the PIO lacks authority on the hiring of personnel and monetary delegations to provincial irrigation engineers (PIE). It was also found that there was an overlapping of functions between the administrative staff and institutional development staff and that the delegation of duties was not clear.

The level and the composition of each staff are not under the control of the PIO. A standard criterion for promotion of a staff member does exist. However, those staff attached to the Institutional Development Division (IDD) have attended more training programs within their 2-5 years of employment than those attached to the Administrative Division.

Performance criteria of PIOs anchor heavily on financial viability so that at times, some PIOs refrain from hiring staff or cut down existing staff (temporary) to reduce expenses.

Some of the reported major problems associated with project implementation include delayed release of funds, delayed delivery of supplies and materials, and slow procurement of construction equipment.

***Region VI - University of the Philippines in the Visayas (UPV).*** This study focused on the Provincial Irrigation Offices (PIOs) in the Iloilo Province. These PIOs were concerned with the irrigation management of the CIS. The main objective of the study was to evaluate the effect of the PIOs' structures and processes on the O&M of the CIS. The study also aimed at evaluating the extent of assistance of the IAs in organizing, managing and maintaining the CIS.

The study made use of the following indicators to measure the effects of the PIOs on the O&M of the systems; (a) viability index; (b) O&M cost per hectare; (c) amortization payments collected; and (d) the extent of institutional development of the CIS.

To evaluate the extent of assistance of the IA in the organization, management and maintenance of the systems, the study made use of the following indicators: (a) participation of the IA officials and members in the activities of the IA, specifically in meetings and training programs conducted by the NIA; (b) extent of satisfaction of the members in the services of the CIS in terms of water distribution; (c) timely payments of the amortization fee; and (d) cropping intensity of the serviced areas.

From the study it was possible to identify the need to streamline the PIOs' organizational structures and processes to accommodate the participatory ideology. At present, the NIA Central Office (CO) undertakes substantial control, coordination, monitoring and supervision of field activities. It was recommended that the structure of the agency must be further decentralized to cut the need for clearance and detailed reporting to the CO. The Regional Irrigation Office (RIO) can take over the functions being carried out by the CO, especially in overall planning and fund allocation for the region. This means that both the RIO and the PIO must be restructured and the latter must truly become the lead unit in the overall coordination and implementation. The study team proposes 13 new positions within the PIO in their restructuring plan.

Findings of the study also tend to reiterate the need for integrating the NIA's institutional development program at the national, regional and provincial levels.

Based on the figures of the Commission on Audit, it was evident that the PIOs are still dependent on the central office's support for existence. However, the following were recommended to improve their financial viability: (a) formation of cooperatives under IAs; (b) collection strategies for amortization including rewards and sanctions; (c) shortening of the repayment period by accelerating rates; (d) selling the unwanted and non-working assets; and (e) decentralization of accounting functions so that the PIOs can assume more responsibility.

The study also revealed that a number of staff positions at the PIOs were vacant. Manpower was highly qualified but inadequate at the field level. The study further revealed that the most crucial personnel linking the NIA and the farmers, namely, the IDOs do not have security of tenure. The study, therefore, recommends that their positions be made both secure and higher in salary grade. Likewise, the administrative and project field personnel who have the qualifications for the job and who have been on a daily or a contractual basis for years and who have been performing well should be made regular employees.

The study recommends that intensive training on participatory program management and supervision be held on a regular basis for the staff at all levels, including the Chief of the Institutional Development Division and the PIEs. The study encourages simultaneous training between technical and institutional staff.

### **The Impact of Training Programs Conducted by NIA**

The National Irrigation Administration conducts various types of training for leaders and members of the IAs. Three basic types were covered by the impact studies:

- Basic Leadership Development Course (BLDC)
- System Management Training (SMT) including Water Management and Agricultural Technology

- Financial Management Training (FMT)

Impact studies of irrigation training programs were conducted in collaboration with IIMI by the following universities: the Ateneo de Naga in Region V, Panay State Polytechnic College (PSPC) in Region VI and the Central Mindanao University in Region X.

### **Major Findings**

***Region V - Ateneo de Naga University.*** This study was conducted in two National Irrigation Systems in Region V and these were the Daet-Talisay RIS and the Libmanan-Cabusao Pump Irrigation System. The objective of this study was to provide information about (a) the perception of farmer-members, FIOs and NIA-IDD field staff about the performance of the IA leaders; (b) the perceived training needs of the leaders; (c) the knowledge and skills gained by IA leaders with respect to leadership work, system management, and financial management; (d) the leaders' adoption of knowledge and skills derived from the training programs; (e) the quality of training programs; and (d) the factors affecting the impact of training programs on IA leaders' performance.

The study focused on the BLDC and FMT because in most of the study areas, SMT was introduced during the survey period. The majority of the leaders feel that they were not adequately trained: the frequently mentioned training needs by leaders include water measurement, ISF collection, financial management and refresher courses on job enrichment.

The findings suggest that training programs lack emphasis on skill development and on-the-job proficiency. Behavioral development components through techniques of skills enhancement need to be incorporated into training programs.

The leaders of new IAs needed knowledge and skills in financial planning and recording, use of simple accounting forms, financial auditing and control procedures.

The training staff, in general, comprised personnel with an average training experience of about eight years though not necessarily in institutional development. Only a few had special training on design development, communications, etc.

As for impact assessment, feedback regarding problems in adopting knowledge and skills gained during the training programs was seldom

solicited from the participants. There was no built-in monitoring and evaluation scheme.

The most common and crucial issue pertains to "non-participation of farmers." While it is commonly believed that effective leadership will address this problem, it appears that there were farmers who subject IA leaders to arguments which, sometimes, they were incapable of handling.

***Region VI - Panay State Polytechnic College.*** The objective of this study was to assess the effectiveness of training programs on irrigation systems management conducted by NIA for its staff, IA officers and farmer beneficiaries. Two NIS from Region VI were included in this study.

The study revealed that almost 60 percent of the respondents found NIA training to be useful. It was also found that IAs with trained leaders and members have better financial management skills and system management and can more readily adopt new technology than the untrained control group. The majority of the farmers claimed that the NIA training programs have resulted in improvements in water distribution, better cooperation among farmers, increasing their knowledge on new technologies and production management and finally improved crop output.

***Region X - Central Mindanao University.*** The objective of this study was to evaluate the degree of influence of the training programs given by NIA to the farmer irrigators.

Using some selected indicators related to leadership quality, the study assessed the impact of the Basic Leadership Development Course at the IA level: regularity in meetings, quorum at meetings, maintenance and preservation of records and involvement of members in IA activities. Based on these, the study revealed that BLDC, in general, has had a positive impact.

With regard to the System Management Training (SMT), there was not much change in cropping intensity after the training. However, as a result of the training programs a significant improvement in "sharing water" was observed. The majority of the respondents reported that they had increased the level of fertilizer application as a result of SMT. The comments of the respondents on the training programs were highly favorable; in fact, some said that they were informative, that they broadened their knowledge and that they proved useful.

In connection with the Financial Management Training (FMT), it was completely foreign to a significant number of the participants. Only eleven

respondents had the opportunity to attend this type of training and they rated its usefulness very favorably. Farmers with less than 10 years of schooling, however, found FMT quite difficult.

### **Farmer Irrigators' Organization Program (FIOP)**

During 1989/90, with the assistance of IIMI and the Institute of Philippine Culture (IPC), three universities in Regions V, VI and X conducted Process Documentation Research (PDR) on NIA's FIOP. To gain an in-depth understanding of the FIOP process, only three irrigation systems were included in the PDR. Because of the small sample size of the PDR, it was deemed necessary to validate its findings to ensure the applicability of the results in other systems throughout the country.

Several validation workshops were conducted in October 1990 covering the three (3) AAPP regions. However, it is difficult to conduct workshops on a nationwide basis since it is costly and time-consuming. Moreover, despite the fact that the workshop method of validation has many advantages, it also has some weaknesses. For example, lower-level officials of NIA may not feel free to critically evaluate the role of higher-level officials in a workshop situation. Because of these, it was decided to conduct a questionnaire survey which would also cover most parts of the country. This was conducted in five non-AAPP regions (including UPRIIS) which were not covered by the PDR. In these five regions, systems were randomly selected by the use of random numbers while proportionate sampling was done to select target groups/respondents from the selected systems in each region.

The subjects for validation in this undertaking were derived from the findings of both the PDR and validation workshops.

The questionnaires, therefore, were prepared for different categories of FIOP actors/implementors from the IA members to the FIO, Institutional Development Officer (IDO), Farmer Irrigators' Organizing Supervisor (FIOS), the Irrigation Superintendent (IS) and the Regional Institutional Development Division (RIDD) on the basis of the PDR findings.

The study found out that the three methodologies employed in this study complement one another. The two processes involved, namely, validation workshops and validation questionnaire validate the PDR findings.

### **Design and Management Interactions in the CIS**

This study was conducted in collaboration with IIMI by the Central Philippine University in Region VI. The objective of this study was to review the designs of the communal irrigation systems. Specifically, it aims to identify the various factors that cause the discrepancies between the designs and actual performance of the CIS.

Based on the study, an average discrepancy of 27.7 and 24.8 percent was obtained between the design and the actual area irrigated in the CIS during the first and second cropping season, respectively. According to the study, some of the major reasons for the discrepancies are: (a) hydrologic data used in the design (e.g., rainfall percolation, evapotranspiration and conveyance efficiency) differ from the actual; (b) the type of soil considered in the design also differs from the actual; (c) location and type of irrigation structures constructed in the systems; (d) increase in the volume of water in the canals from other sources; (e) the presence of silt in the canals and in the irrigation structures; (f) O&M practices of the farmers; specifically, the excessive or wasteful use of water and water distribution.

### **Irrigation Service Fee Collection**

This study was conducted in collaboration with IIMI by the Central Mindanao University in Region X. The study intended to find out the relationship between personal, economic, extension and social factors and attitudes to the payment of irrigation service fees.

According to the study, different factors affect the attitudes of the farmers in the NIS and CIS in paying the required irrigation service fee. The factors which directly and indirectly affect the behavior of farmers in the CIS in paying the fees are: stage of IA development, incentives given for prompt payment of irrigation service fee, attendance of farmers during IA meetings and the management of funds within the IA.

In the case of the NIS, attitudes of farmers were directly and indirectly affected by the following: attendance of members during IA meetings, members' educational attainment, management of IA funds, members' household size and the marketing outlets in the area.

After the completion of Phase I research activities, action plans were developed based on the findings and recommendations of the different



studies conducted. These plans were developed jointly by the NIA-IIMI-University through a series of planning workshops and meetings held at both the national and regional levels.

The following section will discuss the preparations for the action plans. It will also describe the processes and activities involved before the implementation of the intervention program.

## **PLANNING RESEARCH INTERVENTIONS**

According to the cooperative agreement between the United States Agency for International Development (USAID) and the International Irrigation Management Institute (IIMI), the research program had to be completed by the end of February 1991. However, the participating agencies namely NIA, USAID, IIMI and the collaborating research institutions realized the importance of extending the research program until the end of 1991. NIA most particularly saw the importance of extending the research program in order to design and implement as well as field-test, on a pilot basis, the findings and recommendations of the research activities under Phase I of the program.

Several workshops, seminars and meetings were held and field trips were taken to the various irrigation systems in the AAPP-covered regions. The major objectives of these meetings and workshops were : (a) to explore potential areas of collaboration between regional research institutions and the National Irrigation Administration, and (b) to develop strategies and identify topics for AAPP (irrigation) research.

The first workshop conducted was the *Irrigation Research Methodologies Workshop* held at the Philippine Council for Agriculture, Forestry, Resources Research and Development (PCARRD). Held from January 25 to 26 in 1990, its objectives were: (1) to review and refine research proposals in consultation with fellow researchers, NIA officials and some selected resource persons; more specifically, in regard to each one of the research proposals, the workshop intended to formulate not only the specific objectives but also a set of indicators related to the objectives, the major goal of which was to promote the use of objectively verifiable indicators and measurements, estimate data needs for indicator measurements and reach decisions on how data will be procured, how the data will be

treated and interpreted and what analytical tools will be used; (2) to compare and contrast the different approaches and analytic techniques proposed by the different research institutions conducting research on the same topic, and to reach an agreement on the use of a common set of variables and indicators; and (3) to review major issues emerging from the PDR on FIOP.

The participants of this workshop were the representatives of the regional research institutions, NIA regional office, NIA central office, USAID, PCARRD, and IIMI.

The workshop was able to develop a good quality of research strategies in terms of the following: well-defined objectives and well-defined and verifiable indicators and measurements. It was also able to identify a common set of indicators/variables for common research topics at the different regions. It also brought about better coordination and collaboration between the research institutions and the NIA.

A secondary objective of this particular workshop was to provide an opportunity for the researchers to discuss with NIA senior staff the relevance/applicability of proposed research to NIA operations in irrigation systems.

The second workshop held was the *Regional Research Workshops in Three AAPP Regions to Discuss Initial Findings and Action Plans*. Separate sessions were held for each of the collaborating universities in the AAPP regions. The first session of this workshop was held in Region X on October 12, 1990 while the second session was held at the Ateneo de Naga University in Region V on October 26, 1990. This was followed by another session at the University of the Philippines in the Visayas on October 31, 1990. Researchers from the collaborating institute in the region, regional staff of the NIA and representatives from IIMI participated in these workshops.

The third workshop held under the AAPP was the *Process Documentation Research Validation Workshops in Three AAPP-Covered Regions*. A two-day validation workshop was held at the three AAPP regions with the first held at Region X on October 10 and 11, 1990. The Xavier University, regional NIA staff and representatives from IIMI participated in it. The researchers from the Ateneo de Naga University, NIA staff and representatives from IIMI participated in the second workshop held at Region V on October 24 and 25, 1990. The third workshop was attended by the researchers from the Central Philippine University, NIA staff, and IIMI representatives. This was held at Region VI on October 29 and 30, 1990.

The fourth workshop was the *Planning Workshop - AAPP Irrigation Research* held at the NIA compound in Quezon City from November 19 to 21 1990. IIMI, NIA, USAID and the collaborating agencies participated in this workshop whose purpose was to discuss the findings of research conducted by the different universities and of initial plans developed jointly by NIA-university teams in the respective regions and refine the initial plans and reach agreements on the implementation of selected plans in selected areas. This workshop was the third stage of a four-stage process in planning intervention. The first and second processes were the workshops held in October 1990.

This planning workshop focused on three work themes:

- assessment of system performance with special reference to IAs
- assessment of performance of the Provincial Irrigation Offices
- assessment of the impact of NIA training on IAs

Three activities took place in this three-day workshop presentation of individual research studies; group discussions on the three major work themes to find similarities and/or differences between the researches and significant findings; and to plan interventions.

## **DEVELOPMENT OF THE ACTION PLANS**

A series of meetings was again conducted by IIMI, NIA and the various collaborating agencies. The objective of these meetings was mainly to select the areas for intervention. In the presentation of the proposals for intervention, the participants classified the recommended action plans into three areas.

The first classification of recommendations was policy in nature. According to the first classification, recommendations do not require any action research to be done in the field. Instead, most of these proposals are addressed to the management of the irrigation agency. To cite an example, the study conducted by the Camarines Sur State Agricultural College (CSSAC) in Region V on *The Operation and Management of Provincial*

*Irrigation Offices (PIOs) in the Bicol Region*, found that the function of the PIO was constrained by "inadequate in-house capability to identify and implement projects due to lack of highly trained and motivated personnel and necessary logistics to support their activities. Their trainings and incentive policies are rather weak. There was also very limited delegated authority to the PIOs so that, they are hampered in responding to dynamic and people-oriented development." Hence, the study proposed to encourage the Provincial Irrigation Offices and the NIA employees to formally write complaints regarding the Salary Standardization Law for submission to the Department of Budget and Management with strong endorsement by the NIA central office. Moreover, the study also proposed that NIA develop a Bonus Incentive Plan for its employees and to consider making regular plantilla positions for the Institutional Community Organizer. These recommendations did not consider action research that had to be implemented in the field.

Recommendations in the second classification are qualified for pilot-testing through intervention but on the long-term. According to the IIMI-NIA-Universities agreement, action research should be done within a one-year period. Recommendations in the third classification are those in which intervention can be applied and tested within a shorter period. The action research implemented in the regions were limited to these types of recommendations.

Recommendations that fall under the third type were presented to the NIA senior management through a workshop. The objective of the workshop was for the participants, including those from NIA to select proposals for intervention. After careful selection of the intervention activities, they were implemented in different AAPP projects.

The following five sections will discuss case studies where the action plans were implemented.



## CHAPTER 3

### **Organizational Development Program for Strengthening IAs and IA-NIA Partnership: A Pilot Intervention—Case No. 1<sup>4</sup>**

THIS SECTION DISCUSSES the intervention made by the Bicol University, one of the collaborating research institutions, jointly with NIA, with the technical assistance provided by IIMI. Specifically, this chapter explains the processes used by the Bicol University in the implementation of the action plan. Also included in this chapter is the impact of the intervention made.

#### **METHODOLOGY**

As an offshoot to the study conducted on the performance and sustainability of IAs, the Bicol University together with the NIA and IIMI conducted the action/intervention research. In the study on *Organizational Development Program for Strengthening IAs and IA-NIA Partnership: A Pilot Intervention for Bicol*, the Barit River Irrigation System in Camarines Sur was chosen as the project site, based on the following criteria:

- The system must be under the FIOP.

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<sup>4</sup> This chapter is based on the project report of the research conducted by Lauraya, F. et al. 1992. *Organizational Development Program for Strengthening IAs and IA-NIA Partnership : A Pilot Intervention for Bicol* (unpublished).

- The irrigation system must be a representation of the national systems in the Bicol Region.
- The peace and order situation must be favorable.
- The NIA personnel as well as the IA officers must be receptive to the intervention.

The general objective of the action research is to pilot-test strategies that would assist in improving and sustaining the performance of IAs as well as the irrigation system. Specifically, the objective is to increase IA participation in irrigation-related activities, to enhance NIA's responsiveness to institutional requirements, and to improve IA managerial and water management skills through training of farmers by farmers.

### **Experimental Sites**

IA leaders of the associations in this particular irrigation system were consulted as to which particular IA should be chosen as the experimental site of the study. Based on the responses of the leaders, the following IAs were chosen:

- BRISDAFIA (Barit River Irrigation System Division A Farmer Irrigators' Association) - under FIOP the three IAs in Division A were reorganized into only one IA (BRISDAFIA). This reorganized IA which is under the Type II contract with the NIA was registered with the Securities Exchange Commission on January 21, 1991. BRISDAFIA covers 15 *barangays* (villages), two in the city of Iriga and 12 in the city of Nabua. It covers an area of 1,160 hectares with some 1,112 farmers and this area has 57 turnout service areas (TSAs), each headed by a Turnout Service Area Leader (TSAL).
- LAPSEFIA (La Purisima, Sta Eulalia Farmer Irrigators' Association); this particular IA is a consolidation of two IAs in Division C, SCADSFIA and LAPSEFIA. The consolidated IA covers 8 *barangays* in Zone 7 and 2 *barangays* in Zone 8. It covers

an area of 745 ha divided into 44 turnout service areas with a total number of 980 farmers.

### Control Groups

To accurately assess the impact or effect of the intervention program on the performance of the IAs and the NIS, it is but proper to choose control groups that are more or less comparable with the experimental sites in terms of geography, location, size of membership and organizational performance (table 1). Consideration was also given to the spread effects, that is, the chosen control groups should be far enough so that they may not be affected by the activities of the experimental groups. Upon consultation with the NIA staffs, the following IAs were chosen:

- LAYMANSFIA was chosen instead of RAMCFIA because the latter was a recipient of a one million peso credit line from the Land Bank of the Philippines at the time the intervention program was to be implemented. This benefit could significantly affect the performance of RAMCFIA; hence a substitute was necessary. LAYMANSFIA covers an area of 280 ha with about 925 farmers.
- BULRISCOFIA has a total of 1,889 farmer members in an area of 1,024 ha.

To gather the necessary information for the evaluation process, the survey method was used. Before and after the project implementation period, two sets of questionnaires were given to the TSA Leaders and farmer members of both the experimental and control sites. The sample size was determined through a random sample formula<sup>5</sup> which reached the number of respondents shown in table 2.

The intervention program in this particular region comprised the following activities: (a) small group formation, (b) value clarification training, (c) self-assessment of the performance of the farmer leaders, (d)

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<sup>5</sup>

$$n = \frac{N}{1 + N(e)^2}$$

where, n = sample size, N = population, e = sampling error (10%).



distribution of the IEC materials, and (e) mobilization of O&M personnel in institutional work.

*Table 1. Comparison of experimental and control groups, as of 1990.*

Categories	Experimental		Control	
Name of system	Barit RIS		Buhi-Lalo RIS	
Name of IA Location	LAPSEFIA downstream	BRISDAFIA upstream	LAYMANSFI A downstream	BULRISCOFI A upstream
Membership registered	740	223	492	1,599
potential	980	1,112	925	1,889
Type	II-FIOP	I-FIOP	II-Non-FIOP	II-Non-FIOP
Service area (ha)	740	750	280	1,024
IA performance*	high	low	low	high

\*Based on collection efficiency, at end of 1990.

*Table 2. Determination of sample size, 1990 data.*

IA	No. of TSA Leaders	Sample size TSA level	No. of registered members	No. of TSA	Sample size of farmers	Questionnaires received
LAPSEFIA	35	23	740	35	26	24
BRISDAFIA	57	31	223	57	43	41
LAYMANSFI	13	12	492	13	10	17
A	27	16	1,599	27	20	17
BULRISCOFI						
A						
Total	132	82	3,054	132	99	99

## INTERVENTION ACTIVITIES

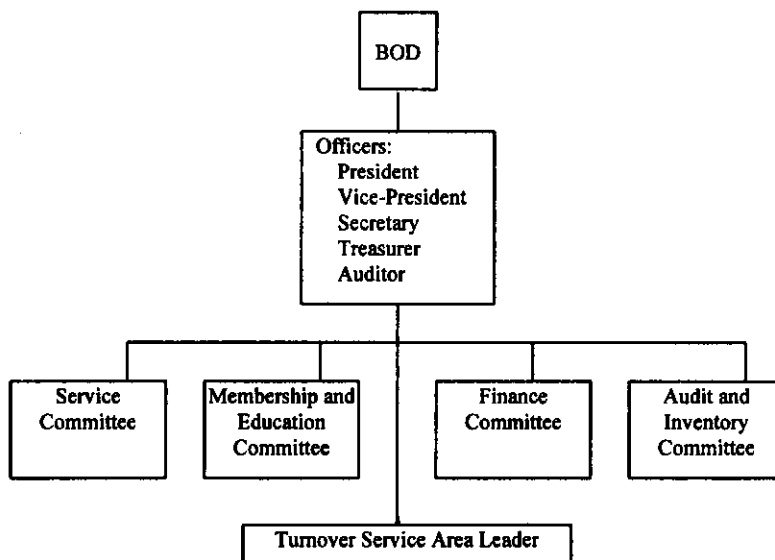
The following were the activities implemented by the intervention team (i.e., Bicol University, NIA and IIMI) in the selected study sites.

### Small Group Approach

It was concluded from the diagnostic research study that small groups of persons were more effective in terms of performance than large ones. This is because the smaller groups provide more opportunity for the members to be involved in the activities. Likewise, a small group could be easily managed by the leaders. In the two IAs involved in the intervention program in this particular region, the organizational structure was strong at the Board of Directors (BOD) and Turnout Service Area Leaders (TSAL) level only but a rather weak link was identified from the TSA Leader down to the rest of the members of the association (figure 2).

As part of the intervention program, the organizational structure of the IA was modified. The original structure of the IA was composed of the officers as given in figure 2.

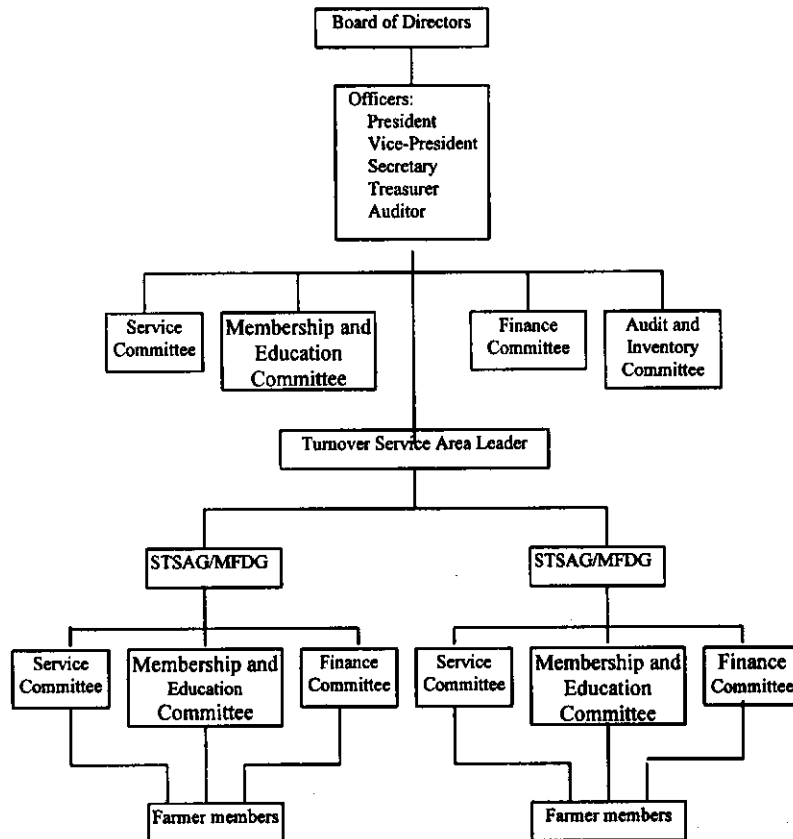
*Figure 2. Organizational structure of the IA adopted by the action-research project.*



In the modified structure of the organization, however, a smaller group was organized below the TSA level. Specifically, a segmentation of

the TSA members into subgroups based on water and task distribution was made. The first subgroup which was water-based is called the Supplementary Turnout Service Area Group. The 20-30 member subgroup is headed by a Supplementary Turnout Service Area Leader. This leader also acts as an assistant to the TSA Leader. The subgroup was further divided into sub-subgroups based on task distribution composed of about 10 members per group to form three committees. These committees were headed by an elected officer and each member was given the opportunity to choose in which committee s/he would prefer to work but a percent allocation of 50-30-20 was encouraged for the composition of each of the committees (figure 3).

Figure 3. Modified organizational structure of the association.



### **Advantages of the Small Group Approach**

- Involvement of the farmer members in the activities within the small groups would be more clearly defined and obvious. This is because each member is given a definite task depending on the committee he belongs to. An IA member would do his best to accomplish his task in relation to his own skills and the fulfillment of his own needs and personal goals. Each member is also closely monitored by the officers.
- Because of the extension of the IA's organizational structure, communication flow between the TSA leader and the members became more systematic. Members were consulted in problem identification and action planning. Water distribution and canal maintenance were efficiently carried out since there were groups assigned to such tasks.

### **Value Clarification Training**

It was concluded from the above-mentioned study that the farmers' knowledge and awareness were very much limited. Specifically, farmers' awareness on the participatory program of NIA was not sufficient. Farmers were not aware of the fact that the cooperation they would extend to the above program would bring them greater benefits in the long run.

Hence, a Value Clarification Training was considered as a strong strategy to provide the farmers with the necessary information to enhance and eventually develop farmers' cooperation in the program. The Value Clarification Training was designed to correspond with the present role of farmer-members in the association.

This type of training has three phases:

#### ***The First Phase***

Participatory assessment of the performance of the farmer members in the TSA as indicated by the (a) existing condition of the structures; (b) water adequacy and distribution; (c) collection efficiency; and (d) relationship between members as well as between members and officers.

The assessment was done through the use of symbols to avert non-participation due to illiteracy. Through this participatory assessment, the farmers found out that because of lack of discipline among themselves, problems occurred along the supplementary canal and the main farm ditch. Such problems as illegal turnouts, oversized canals due to the wallowing of farm animals and unclean canals due to dumping of garbage appeared. The farmers also came to know that the inadequate water that reached their farm was caused by the lack of discipline of IA members in terms of following the water distribution scheme. Identification of such problems by the farmers themselves proved to be a favorable activity for the farmers. Aspiring for better irrigation service and a good harvest, the farmers formulated work plans and follow-up activities to solve the identified problems.

### ***The Second Phase***

The Vision-Setting Activity. Farmer members were asked about their own ideas about the future of the irrigation system as well as the organization. This activity requires the farmers to reconcile their personal dreams to the organizational goals.

### ***The Third Phase***

The Action-Planning Stage. Utilizing the results of the participatory assessment as reference, the farmers performed the necessary action to such problems.

### **Self-Assessment of the Performance of the Farmer Leaders**

Performance of the farmer leaders was assessed using the following procedures:

During the Value Clarification Training, farmer members were asked to evaluate the performance of their farmer leaders in terms of organizing farmers and their ability to motivate collective action. Farmer leaders were also asked to assess their own performance. To accomplish such activity, a self-assessment questionnaire was introduced to be answered by the leaders of the Turnout Service Areas. Self-assessment of the performance of the leaders was done in the following categories:

- water management (adequacy, reliability and equity in distribution, water-saving practices and conflict resolution)
- maintenance (magnitude and quality at different levels, contribution of voluntary labor, group action, etc.)
- crop management (cropping calendar, extension, credit, etc.)
- planning (organization and group dynamics, interaction between farmers, leaders and the agency, attendance and participation in meetings and the planning process)
- financial aspects and benefits (yield and income, collection of irrigation service fee and services rendered by the IAs and the NIA)

The validity of the results of the self-assessment activity performed by the TSALs could be investigated through the assessment made by the farmer members.

### **Distribution of IEC Materials**

Information, Education and Communication (IEC) materials were given out to the farmers of the IAs involved in this study during the Value Clarification Training. These IEC materials in the form of comics using the Bicol dialect contain stories and information that feature values from IA members and water users which they hope could be put into practice.

### **Mobilization of O&M Personnel in Institutional Work**

The Water Resource Facilitator Technician (WRFT) and the Ditchtenders (DTs) serve as direct links between the irrigation agency and the IAs. As it is a function of the WRFT to observe and monitor the activities of the IA, awareness and understanding of irrigation management by the farmers depend on the orientation given by the NIA personnel. Hence, there is a need to provide agency personnel with the necessary knowledge and

reasons for realization of the need to strengthen the bonds between the NIA and the association.

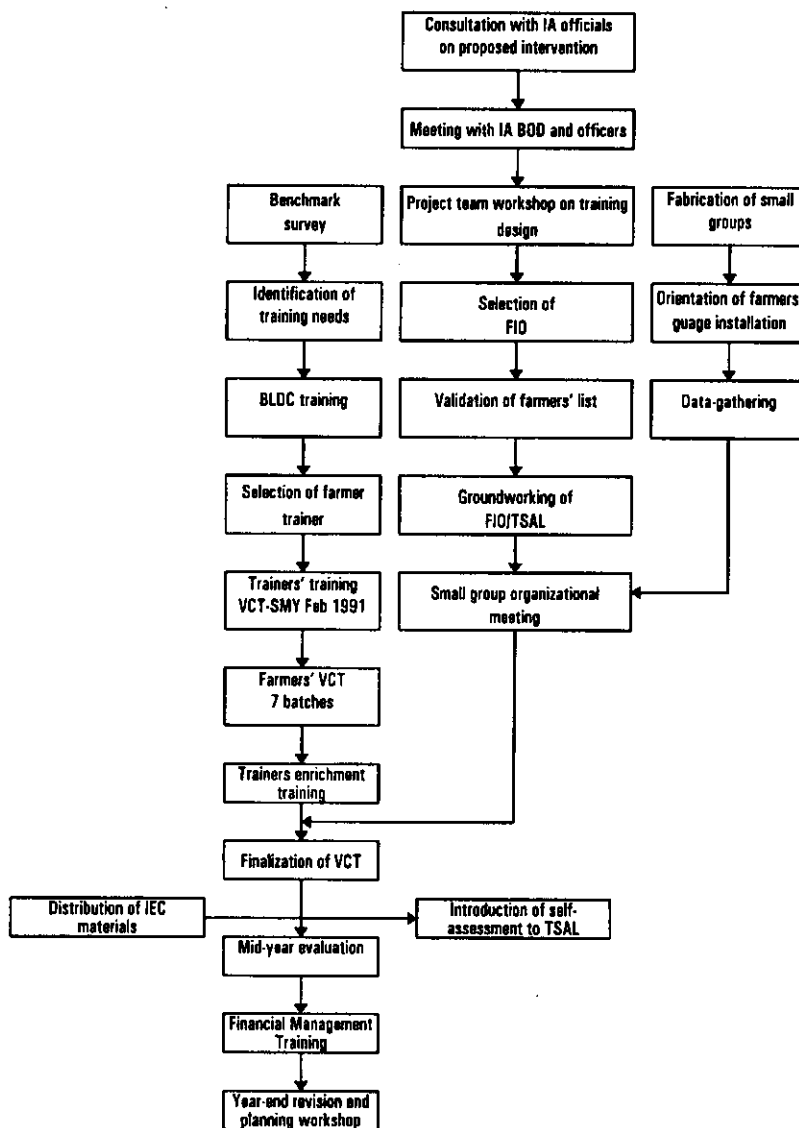
Through the value clarification training workshop, the WRFT, DTs and the whole NIS staff were given orientation on the importance of the IAs to NIS performance efficiency and their part in enhancing IA performance. (Please refer to figure 4 for chronological order of the activities during the one-year period of the action research in the Bicol Region.)

### **ASSESSMENT OF THE RESULTS OF THE INTERVENTION PROGRAM IN THE BICOL REGION**

The above discussions revealed the various schemes and strategies implemented by the intervention team led by a collaborating research institution, the Bicol University. These strategies were implemented to improve and strengthen the performance of the Irrigators' Association and eventually effect an efficient utilization of the services of national irrigation systems. Hence, an assessment of the impact of these strategies is necessary. The assessment of the results of these intervention activities in this particular region focused on the following five areas:

1. Indicators of the Organizational and Task Structures of the IAs.
  - water management (water distribution, communication, water saving, rotation, conflict management, task distribution and water practices)
  - planning and organizational activities (attendance and participation)
  - maintenance (turnout, *rabus* or voluntary work, structures, preventive maintenance)
  - financial aspect (willingness to pay the ISF, timeliness of payment, affordability to pay ISF)

*Figure 4. Chronological sequence of the activities undertaken in Region V.*





- linkage (upward, downward, relation with members and TSALs)
- agricultural development (agricultural extension, agricultural inputs, agricultural credits)

2. Indicators of the organizational climate of the IAs.

- clarity of goals, objectives and policies among members (awareness of mission, awareness of goals, awareness of objectives and clarity of policies)
- commitment of members (strength of sense of cooperation, extent of utilization of personal resources and employment of water-saving devices)
- trust and openness (extent of trust between officers and members and freedom to discuss problems with the officers and members)
- warmth and support (extent of sympathy of the officers to the members and vice versa, and extent of friendliness of the members)
- recognition of farmers (extent of recognition of good work and degree of fairness)
- risk-taking behavior (freedom to disagree with leaders)
- realization of personal goals (contribution of the IA in the realization of personal goals)

3. Indicators of IA performance.

- collection efficiency
- extent of participation of IA members
- extent of satisfaction over IA services

4. Indicators of the performance efficiency of the National Irrigation Systems.
  - cropping intensity
  - viability index
  - extent of satisfaction over IA services
5. Indicator of the farm production
  - farm yield

### **Organizational and Task Structure of the IA**

From the outcome of the statistical analysis made, it can be concluded that the formation of the small group and the realization of the Value Clarification Training brought essential modifications in the management of water, planning of organizational activities, agricultural development and financial aspect. These modifications were also evident in linkage and maintenance activities although in a less-significant manner (table 3).

Upon the formation of the small group, each cluster was given a specific task to perform. Hence, a positive change was observed in task distribution. Because of the positive change and the improvement in communication within the organization, farmers became more aware of the cropping schedule so that they came to know when water was being supplied. There was also a marked improvement in the number of farmers who closed the gates when the quantity of water in their farm became sufficient. As a consequence, it was also observed that a significant number of farmers had kept water at the minimum level. Conflicts among the members and officers have also been observed to be less-frequent.

The growing interest and concern of IA members in the planning and organizational activities were reflected in their improved attendance and more active participation in the activities of the IA. This improvement may be attributed to the formation of the small groups wherein each member was given definite tasks. At the same time, it cannot be denied

that the distribution of the IEC materials had helped in keeping the farmers informed of their duties and responsibilities as members of the organization.

*Table 3. Impact of interventions on the organizational and task structure.*

Indicators	Computed t-statistic	Significance or insignificance
A. Water Management		
1. Water distribution	4.00	Significant
2. Communication	2.51	Significant
3. Water saving	3.10	Significant
4. Rotation	2.77	Significant
5. Conflict management	2.82	Significant
6. Task distribution	4.05	Significant
7. Water practices	1.86	Significant
B. Planning of Organizational Activities		
1. Attendance	2.24	Significant
2. Participation	4.98	Significant
C. Maintenance		
1. Turnout	2.31	Significant
2. Rabus or voluntary work	-0.22	Insignificant
3. Structure	1.79	Significant
4. Preventive maintenance	1.56	Insignificant
D. Financial Aspect		
1. Willingness to pay the ISF	2.36	Significant
2. Timeliness of payment	3.50	Significant
3. Affordability to pay the ISF	0.37	Significant
E. Linkage		
1. Upward	0.84	Insignificant
2. Downward	1.25	Insignificant
3. Relation with members	4.36	Significant
4. Relation with TSALs	3.12	Significant
F. Agricultural Development		
1. Agricultural extension	5.43	Significant
2. Agricultural inputs	1.90	Significant
3. Agricultural credits	2.76	Significant

*Note:* Corresponding tabular value of t is 1.645.

Maintenance activities, on the other hand, were observed to have less significant change after the implementation of the intervention programs. Of the four indicators of maintenance (structure, turnout, rabus and preventive maintenance), only two—structure and turnout—were considered most affected by the intervention made. It was also observed that there was a marked improvement in the number and length of the maintenance of the main farm ditch, as well as in the percentage of structures in good condition.

It is quite interesting to note that after the implementation of the intervention project, farmers in the control groups LAYMANSFIA and BULRISCOFIA were more willing to undertake voluntary group work, than the experimental groups, LAYMANSFIA and BRISDAFIA, where the intervention program had been implemented.

Such differences have been caused by an extraneous variable which is that during the intervention program, the IAs of the control group had received their IA share while the experimental groups had not yet received their share for the two previous cropping seasons. With the increase of the availability of funds, it was easier to mobilize IA members in the control groups to perform maintenance and minor repairs. These added financial resources were not used to pay for the services of the members, but were used by the association to buy construction materials (like cement and sand, culverts and others). The funds were also utilized to purchase an additional incentive (i.e., food) for the farmers.

With regard to the financial aspect, it was observed that the intervention project did not significantly affect the farmers' affordability to pay. This may have been caused by the fact that the limited time allotted to the intervention project is not enough to bring about a good harvest. However, the intervention project was able to improve the farmers' willingness to pay. It was also evident that after the implementation of the intervention project, the farmers promptly paid their irrigation fees. This improvement in the financial aspect of the organizational and task structure occurred because of the farmers' consciousness of the need for the irrigation fee. This awareness was brought about by the trainings conducted as well as by the IEC materials distributed to them.

In connection with the "upward and downward" communication (linkage) within the association, it was observed that after the intervention program, communications between the leaders and the members and vice versa did not improve. It was revealed that the number of turnout

problems communicated by the members to the BOD officials was limited. This is also true of the number of decisions communicated by the officials to the IA members. The situation remained the same despite the implementation of programs which could have enhanced effective communication in the organization. It could be deduced at this stage that the intervention made, i.e., small group formation and mobilization of O&M personnel in institutional work did not affect this indicator.

Agricultural development, on the other hand, had significant modifications upon the implementation of the intervention programs. A marked improvement in the agricultural extension reflected that the number of farmers who had frequent and good discussions with extension farmers increased. It was also evident that the number of farmers who got loans from different government and nongovernment funding agencies also increased and so was the number of farmers who utilized a full set of agricultural inputs. Such a situation arose because the Value Clarification Training held increased the members' awareness of goals, objectives and mission of organizations and developed a linkage between the funding agencies and the farmer.

### **Organizational Climate of the IAs**

This refers to the values and attitudes as well as the underlying assumptions which determine how work gets done.

### ***Clarity of Goals, Objectives, Policies and Mission***

Based on the results of the statistical analysis (table 4) conducted after the intervention program implemented in this particular region, it was observed that the IA members became more aware of its goals, objectives, mission and policies.

Such an outcome maybe primarily caused by the Value Clarification Training and distribution of the IEC materials. More important was the formation of the small groups which enabled closer relationship among the farmer members and their leaders. This type of relationship results in more effective communication within the IAs.

*Table 4. Impact of interventions on the organizational climate of IAs.*

Indicators	Computed t statistic	Significance or insignificance
A. Clarity of goals, objectives and policies among members		
1. Awareness of mission	4.36	Significance
2. Awareness of goals	5.21	Significance
3. Awareness of objectives	4.45	Significance
4. Clarity of policies	2.69	Significance
B. Commitment of members		
1. Strength of sense of cooperation	2.42	Significance
2. Extent of utilization of personal resources	0.35	Insignificance
3. Employment of water saving devices	1.41	Insignificance
C. Trust and Openness		
1. Extent of the trust between		
a. officers	2.49	Significance
b. members	0.73	Insignificance
2. Freedom to discuss problems with		
a. officers	3.03	Significance
b. members	2.09	Significance
D. Warmth and Support		
1. Extent of sympathy of		
a. officers	0.92	Insignificance
b. members	2.78	Significance
2. Extent of friendliness	2.78	Significance
E. Farmers recognition		
1. Extent of recognition of good work	3.46	Significance
2. Degree of fairness	2.06	Significance
F. Risk-taking behavior		
1. Freedom to disagree with leaders	1.95	Significance
G. Realization of Personal Goals		
1. Contribution of IA to realization of personal goals of members	3.91	Significance

*Note:* Corresponding tabular value of t is 1.645.

***Commitment of Members***

It was revealed from the results of the statistical analysis that the intervention program did have positive effects which significantly strengthened the sense of cooperation. However, it was observed that the farmers are not willing to use personal resources for the IAs' needs. The members feel the same with the employment of water-saving devices.

Non-willingness to use personal resources for the IAs' needs may have been due to the economic status of the farmers. Moreover, the negative response of the farmers in the use of a water-saving device may also be attributable to the fact that the farmers still lacked adequate knowledge on the water requirements to sustain their crop through different stages of growth. The negative response of the farmers in this aspect disclosed that the trainings conducted under the intervention program are not sufficient enough to make the farmers aware of the above issue.

***Trust and Openness***

Regarding the trust and openness between the officers and members in the organization, the statistical analysis revealed that after the intervention program, the trust between the officers significantly improved although the trust among the members was unaffected. Such circumstances occurred despite the formation of small groups which provided them the chance to have a systematic flow of communication. However, such intervention had caused members to feel freer to discuss irrigation and irrigation-related problems with the officers and their co-members.

***Warmth and Support***

This refers to the degree of empathy or understanding among the officers of the problems or difficulty among the members, in general as well as among themselves. Based on the results of the statistical analysis, it was revealed that the intervention program brought warmth and support among the members. However, the empathy of the officers for the members' problems remains unaffected by the intervention project. These results may have been caused by the formation of small groups which created a more unified relationship than what existed before the intervention.

### ***Recognition of Farmers***

This refers to the extent of fair treatment given to members regarding their contribution/participation and degree of recognition for any particular work properly done. It was observed that after the intervention program was implemented, farmer members were given more recognition for any contribution or participation extended to the organization.

### ***Risk-Taking Behavior***

This refers to the extent of freedom the members have in disagreeing with leaders without fear of repercussions.

After the intervention program was implemented in the said region, it was evident that the members were more free to disagree with any decision of the leaders without fear of repercussions.

This situation was brought about by the formation of small groups which creates better opportunity for the farmers to be recognized due to the smaller number of members to be attended to.

### ***Realization of Personal Goals***

Every farmer aims to have an increased farm productivity and income. It was after the intervention project that they realized that even though results were not that significant, the improvement of relationship within the organization and the increase of their knowledge make their aim more realizable.

### **IA Performance**

In this setting, the IA performance is measured by the following indicators: (a) collection efficiency or the ability of the IAs to collect irrigation service fees from its members, (b) extent of participation of IA members in the different activities of the IA, and (c) extent of satisfaction of IA members with the services of the IA.



### *Collection Efficiency*

This indicator is measured by the total fees collected as against total collectibles. Based on the data from the IAs, collection efficiency of the experimental group for the year 1991 had significantly increased as compared to the collection efficiency of the control group (table 5). Such increase in the collection efficiency may be attributed to the Value Clarification Training conducted in the experimental groups. This training had raised the consciousness of the farmers on the significance of the irrigation fee on the IA. During this training, the farmers assessed the collection efficiency in their organization. The participants also dealt with the causes of nonpayment by the members.

*Table 5. Collection efficiency of the control and experimental groups before and after the intervention program.*

IAs	1990	1991	Change (%)
Experimental groups			
LAPSEFIA	56.51	67.78	11.27
BRISDAFIA	31.58	32.74	1.16
Average	44.04	50.26	6.22
Control groups			
LAYMANSFIA	31.11	30.53	-0.58
BULRISCOFIA	44.07	42.64	-1.43
Average	37.59	36.58	-1.01

### *Extent of Participation of Members*

The assessment of this particular indicator made use of the assessment or evaluation of the Turnout Service Area Leaders (TSALs) on the actual participation of the members in the different activities of the IA. It was observed that there was an increment in the percentage of farmer members who participated in the activities of the IA. This increment was observed in both the experimental and control groups, which resulted in an insignificant difference between the two groups in consideration of this particular indicator.

Table 6 revealed that changes of the extent of participation of the farmers in the cleaning of canals and in minor repairs in the experimental groups ranged from 17.87 to 18.59 percent while changes in the control groups ranged from 12.40 to 16.04 percent. The relatively insignificant differences in the extent of participation of members in these two groups, as mentioned earlier, may be attributed to the fact that the members in the control groups were able to obtain a payment of the IA share. This enabled them to purchase equipment in doing the repairs besides the fact that the IA was able to acquire an additional incentive for the farmers.

*Table 6. Percentage of farmers participating in the cleaning of canals and in minor repairs.*

Activity	Experimental		Change	Control		Change
	1990	1991		1990	1991	
1. Cleaning of canals	56.48	74.35	17.87	49.92	65.96	16.04
2. Minor repairs	47.42	66.00	18.59	52.24	64.64	12.40

### *Extent of Satisfaction with IA Services*

Based on the results of the statistical analysis (table 7), except for the collection system, measures of the this indicator disclosed a significant positive change. It was expected that an adequate water supply would emerge because of the improvement of water distribution, specifically, in the rotation scheme and water saving. Conflicts in the IA also became manageable and timely resolution of IA problems was effected.

*Table 7. Statistical results of the extent of farmers' satisfaction over IA services.*

Indicators	$t_{com}$	$t_{tab}$	Significance/ insignificance
1. Adequacy of water supply	3.31	1.645	Significant
2. Cleanliness and repair of canals	3.17	1.645	Significant
3. Timely resolutions of IA problems	2.21	1.645	Significant
4. Collection system	1.06	1.645	Insignificant

*Note:*  $t_{com}$  - computed value of  $t$ ;  $t_{tab}$  - tabular value of  $t$ .

However, the "insignificance" in the collection system was primarily brought about by the fact that there was no new collection procedure introduced during the intervention period. Nevertheless, it was assessed that there are still leeways for changes in such procedures.

### **Performance Efficiency of the National Irrigation Systems**

After the intervention program was implemented, it was expected that performance efficiency of the National Irrigation Systems (NIS) would improve. Previously, the performance of the IA was assessed in the context of organizational climate and task structure. However, it would be of primary importance to look into the effects of the changes in the performance of the IA on the performance efficiency of the NIS. In this regard, the performance efficiency of the NIS would be measured by the following indicators: (a) cropping intensity, (b) viability index, and (c) extent of satisfaction of the IA members with the services of the NIA.

Cropping intensity and the viability index were gathered from the BARIT and BUHI LALO system office where the experimental and control IA groups were located. Moreover, data on satisfaction of the IA members with NIA's services were gathered from the survey results conducted on farmers of the participating IAs.

***Cropping Intensity or Index***

The cropping intensity or CI is usually defined in terms of the number of harvests per year from the same area of land. The cropping index in the Philippines is computed using the area cultivated/irrigated in both the dry and wet seasons and the total service area. Table 8 discloses a 9.5 percent increase in the CI of the experimental group from 164.00 in 1990 to 173.54 in 1991 with a difference of 9.54 percent. Cropping intensities in the control groups were already high before the start of the program. However, it was evident that during the span of the intervention project, only a 2 percent increase was achieved. Although the significant increases in the cropping intensities of the experimental groups were attributed to the interplay of external variables, it cannot be discounted that such changes were also the product of improved water management and practices which resulted from the various schemes under the intervention program in the project area.

***Viability Index***

Viability index is the ratio of the system's total annual income to its annual expenditures. As shown in table 8, it is evident that the experimental group showed a 32.25 percent increase in its viability index from 0.868 in 1990 to 1.148 in 1991. Moreover, a 10 percent increase was observed from the control group. It should be noted, however, that the improvement seen in the viability index of the experimental group is attributable to the increase in the income of the BARIT RIS from other sources, i.e., equipment rental. Collection efficiency also improved although a lower collection was evident at the system level. This is primarily due to the fact that there is a low rate of turnover of the ISF collection from the IA to the NIA system office.

*Table 8. NIS performance results.*

Indicators	Experimental(BARIT RIS)			Control (BUHI LALO RIS)		
	1990	1991	Change	1990	1991	Change
Cropping Intensity	164.00	173.54	9.54	172.00	176.00	4.00
Viability Index	0.868	1.148	0.28	1.216	1.343	0.13

***Satisfaction over NIA's Services***

On the services of the NIA, farmer leaders assessed that there was no marked improvement in the cleanliness of facilities (e.g., main canal), incentives provided by the agency to the IA and the promptness of the resolutions during the project duration.

Moreover, there were significant findings about the type of trainings conducted by the NIA. This may be attributable to the various trainings carried out through the intervention project (i.e., modified BLDC, trainer's training and trainer's enrichment training). Table 9 showed improvements in the participation of the water masters and the ditch tenders. The negative significance on the part of the IDO was due to the fact that a new IDO was assigned to the project. Hence, during the span of the project, the IDO is in the process of familiarization of the area.

*Table 9. Statistical analysis of the assessment of NIA services.*

Type of NIA services	$t_{com}$	$t_{tab}$	Significance/ Insignificance
1. Timeliness of cropping calendar	2.19	1.645	Significance
2. Cleanliness of facilities	0.75	1.645	Insignificance
3. Incentives	0.95	1.645	Insignificance
4. Types of trainings	3.08	1.645	Significance
5. Timeliness of NIA-IA resolutions	0.91	1.645	Insignificance
6. Extent of participation of the NIA personnel			
a. water masters	2.58	1.645	Significance
b. ditchtenders	3.15	1.645	Significance
c. IDO	-4.50	1.645	Significance

*Note:*  $t_{com}$  - computed value of  $t$ ;  $t_{tab}$  - tabular value of  $t$ .

**Impact on Farm Production**

To be able to understand if the strategies/schemes implemented were able to have any significant influence on the NIS, it is of foremost importance

to examine its effects on the yield or farm production of the concerned members.

Using the pretest and posttest survey results of the farm production of the farmers, from January to June in 1990 and 1991, it was evident from the statistical analysis that the  $t_{com}$  of 2.27 is higher than the tabular value of  $t$  which is 1.645. This shows that the strategies had a significant positive effect on the farm production of the farmers. It should be noted however that yield is not affected by organizational climate and task structure alone, but is a function of the following:

- water factors (water supply and management, crop scheduling and locational advantages)
- input factors (farm size and fertilizer)
- user factors (management in the farm)

It should be further noted that one year of implementation of action plans is brief. The length of time may not be enough to observe the real effects of the interventions made.



## CHAPTER 4

### **Production and Dissemination of Information, Education, and Communication Materials—Case No. 2<sup>6</sup>**

THIS CHAPTER DISCUSSES the intervention made by the University of the Philippines in the Visayas jointly with NIA with technical assistance provided by IIMI. Specifically, this chapter explains the process by which the production and dissemination of Information, Education and Communication (IEC) materials were conceptualized and eventually implemented. Also included in this chapter is the impact of the intervention made on the performance of the IA members.

#### **METHODOLOGY**

In the first phase of the Accelerated Agricultural Production Program (AAPP) intervention research, the University of the Philippines in the Visayas evaluated the performance of the services of the communal irrigation systems in Western Visayas to the National Irrigation Administration's Provincial Irrigation Office (PIO). In that study, it was found out that communication between the IA members and officers was limited. In fact, it was found out that "dialogues between them on matters concerning IA activities were possible only during monthly or annual meetings. In some cases, meetings were held when there were perceived needs to hold them."

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<sup>6</sup> This chapter is based on the results of the research conducted by Zapanta, L. et al. (1992). Production and Dissemination of Information Education and Communication Materials.



Lack of information about the IA activities would only result in misunderstandings and eventually result in negative attitudes among IA officials and members. It was also found out that the attendance of farmers in trainings conducted by the NIA for the period 1985 - 1989 was not satisfactory.

Hence, based on the above findings, it was proposed by the University of the Philippines in the Visayas (UPV) to produce and disseminate IEC materials.

The IEC materials to be produced and disseminated aimed at increasing the knowledge of the farmer officers as well as the members and improve their attitudes and behavior toward their work. Specifically, the main objective in the production and dissemination of IEC materials was to enhance the level of knowledge of IA leaders and members on their associations, bylaws and other related activities affecting the performance and sustainability of the IAs and the irrigation system.

The production of these materials was also based on the principle that although "NIA has been implementing a well-developed training program" it has to be "constantly strengthened and upgraded to cope with the changes in the environment and the needs of its clientele."

The materials produced and distributed included the following:

- **brochures or leaflets** listing the duties and functions of the IA members as stipulated in their IA bylaws
- **comics** containing human interest stories about successful IAs
- **wall newspaper** containing updated information/reports on ongoing IA activities, status of the ISF dues, amortization payments and on others
- **slide tape presentation (STP)** containing information on the use of technology for the maintenance of the CIS
- **bulletin boards** containing minutes of previous IA meetings, NIA policies and other pertinent information *hung on strategic places*

**Pilot/Target Areas**

The pilot areas in this project were the Sibel-Belpat IA in Antique representing the NIS and the Camambugan (Iloilo) and Hamtic (Antique) representing the CIS. Farmer members in these IAs were the recipients of the IEC materials produced. The Sibel-Belpat IA was a union of two IAs, the Sibel and the Belpat, both in Patnongon, Antique. The IA covers an area of 5,416 ha with a total number of 3,781 farmer beneficiaries, out of whom only 912 were active members.

Among the CIS, however, the Camambugan IA in Dingle Iloilo was chosen as the pilot area. This IA covers an area of 76 ha with a total membership of 63 farmer beneficiaries, all of whom are active members.

Although 5,582 ha were included in the pilot areas it involves 3,941 farmer beneficiaries with only 1,072 active members.

**Control Areas**

Irrigators' Associations included in the control groups were not recipients of any IEC materials. Instead, these control groups were chosen to thoroughly identify the impact or effects of the intervention program on the performance of the IA in the pilot areas. The control groups were the Pasbigtaba Cooperatives Inc. in Dumangas, Iloilo and the Anilao CIS in Anilao, Iloilo.

Pasbigtaba Cooperative Inc. covers an area of 377 ha with 168 farmer beneficiaries, all of whom are active members. On the other hand, Anilao IA covers an area of 250 ha with 102 farmer beneficiaries. Altogether 270 active farmer beneficiaries were involved in these two IAs covering 627 ha.

The study areas were examined to identify the needs and problems of the IA members; through interviews, the extent of the knowledge of the IA members regarding their association was also determined. It was in this area that the concepts of the IEC materials were based. Pilot and control areas are compared in table 10 in terms of number of beneficiaries, active members and service area.

## INTERVENTION ACTIVITIES

The process of producing and disseminating IEC materials involved several activities before being fully realized. Initially, before the materials are developed and produced, data must be gathered to be conceptualized. It was only after the ideas to be included in the IEC materials were finalized that the process of production and dissemination took place.

*Table 10. Comparison of the pilot and the control groups.*

Categories		Experimental		Control	
Name of System	SIBALOM-SAN JOSE RIS	Camambugan CIS	Hamatic CIS	Anilao CIS	
Name of IA	Sibel-Belpat IA	Camambugan IA	Hamatic IA	Pasbigtaba Cooperative Inc.	Anilao IA
Total farmer beneficiaries	3,781	63	97	168	102
Total Active Members	912	63	97	168	102
Service Area (ha)	5,416	76	90	377	250

## Gathering of Data

The objective of this intervention program was to develop, produce and disseminate IEC materials in the form of brochures, comics, wall newspaper, slide tape presentation and bulletin boards. It was the common responsibility of the communication specialist, the scriptwriter, the artist, the photographer, the technical assistant and the assistant project leader to gather the necessary information and to conceptualize the materials to be produced.

The gathering of data would (a) identify the content of the IEC materials, (b) validate the previous findings of the UPV report that there is a need for the farmers to be informed about the activities and other vital

information about the IA, (c) furnish knowledge on what kind of information the farmer members really need, and (d) assist the researchers on how to go about with their work.

It is of paramount importance that correct data be gathered before material on information, education and communication is written and developed. There is a need to integrate with the farmers in order to know the realities in the farm. Moreover, there is a need to identify the realities in the farm the way the farmers talk and act.

The researchers should also know the physical characteristics of the setting in order to draw sketches and illustrations of the canals and irrigation structures. There is also a need for the researchers to know the behavior of the farmers in the farm as well as in the association.

Since sketches and illustrations had to be shown, there was a need to photograph farm scenes. These photographs were also to be used in the slide tape presentation (STP). The photographs showed the irrigation structures in Sibalom, the Sibel Intake, the San Jose-Sibalom Irrigation System Extension 1 and its intake, lateral canals, bench flume and intakes, siphon inlet and outlet, illegal turnouts and siltation.

The necessary data were gathered in the following barangays covered by the Irrigators' Associations: Sibalom, Belison and Hamtic in Antique; Dingle, Palila, Potolan, Barotac, Viejo and Dumangas in Iloilo; Bago city and Negros Occidental.

Through meetings with the members of the associations in these areas, the farmers revealed that they needed information on the cropping calendar, IA bylaws, the participatory approach program and other information related to IA activities.

After gathering the information materials, they were discussed with NIA personnel. More specific data and information were given by the NIA personnel who assisted them in conceptualizing the content of the materials.

### **Conceptualization and Production of IEC Materials**

After consultation with the NIA personnel, additional facts and information were also relayed to the rest of the research team. It was agreed that the brochures to be made would include data and information based on the findings of the previous study the university team had done. Based on the study, there was a need to inform the farmers about the legality of the

existence of the IA as well as their connection with the NIA and the activities within the association.

### ***Brochure***

The brochure which the research team had to do must include information on the IA bylaws and other legal documents (i.e., Contracts 1 and 2, Articles of Incorporation, and Memorandum of Agreement) and IA-related activities. The participatory approach program also had to be featured in the brochure. Moreover, it was decided that the participatory approach program should be presented in story form to be more interesting and understandable to the farmers and in order to eliminate the more technical explanations of the program.

The legal documents were translated by a hired professional translator and these materials were sent back to the legal office of the NIA for verification of the contents.

The article on the participatory approach program was divided into two sets: One set was about the participatory scheme in the CIS while the other was that designed for the NIS. Both articles, however, will revolve on the story of "Nong Tagoy." The character of Nong Tagoy, "a 45 year old farmer, silent, conservative, observant of the things around him and cautious," was to be the mascot of the story regarding the participatory program.

The title for the brochures for both sets was "The Success of Irrigation System is Anchored on Cooperation-Nong Tagoy and the Participatory Approach Program." In the CIS, the story was about Nong Tagoy's dilemma on whether he would join the association or not. He is aware that in joining the association he will enjoy many privileges; apart from sufficient water from the irrigation system, he will also realize an increase in yield. However, he is reluctant to join the association because of the several duties and responsibilities that a member has to perform.

He discussed his dilemma with his fellow farmers only to find out that they had the same problem. They referred their dilemma to NIA field personnel and they found out that the participatory approach program was the basic element for the organization and management of the Irrigators' Associations. This scheme gives the farmer members and officials the chance to own and manage their own communal system. Hence, they came

to know that membership in the organization entailed duties and responsibilities.

The brochure also describes and explains that participation of the farmers is expected in the following activities: "identification of sites where the irrigation structures and facilities are to be located, planning, organizing themselves into an organization, and operating and maintaining the irrigation system."

The farmers were made to understand that duties and responsibilities are part of being a member of the organization especially if structures have to be constructed in their farms. Participation may be in the form of giving suggestions and views related to the construction.

The involvement of the farmers in the identification of the sites must be followed by forming an association. The members of the association would then be recipients of trainings and seminars pertaining to the proper operation and maintenance of the system as well as to the distribution and management of water. Aside from providing suggestions based on experiences, it is also the duty of the farmers through the association to keep a list of monthly expenses spent on the construction of structures to facilitate convenient and fast turnover of the irrigation system to the IA once it is completed.

A memorandum of agreement must be signed between the NIA and the association to clearly identify the duties and responsibilities of each contracting party (i.e., the IA and the NIA). Once the construction of the irrigation system is completed, it will then be turned over to the association accompanied by obligations and responsibilities.

Aside from handling the operation and maintenance of the system, the members of the association are also required to provide an equity of 10 percent (or more) at the start of the construction. The equity may be contributed as labor during construction or as part of their farm produce.

Once the system is turned over to the association, the members are required to pay amortization for the construction of the system. The association will also help plan the cropping calendar, in order to have an equitable, adequate and timely distribution of water.

Nong Tagoy also came to know that in order for the association to prosper, the farmer members must have discipline and refrain from water stealing, acts of envy and others.

Nong Tagoy finally came to a decision to join the association. He believes in his capabilities and he is confident that he can handle the responsibilities in order to gain benefits from the organization.

The brochure for the NIS also tackles the same problem of Nong Tagoy. The only difference is that the scenario is in a National Irrigation System.

Similar to the CIS, Nong Tagoy and his co-farmers' dilemma was only eliminated when they consulted the NIA field representative. They were told that their participation starts when the association is instituted and will continue up to the operation and maintenance of the system.

They came to know that the extent of participation of farmers in the management of the irrigation system differs and depends on a contract the IA is capable of entering into. The first contract, Type I which is called the maintenance contract includes routine maintenance of a certain length of canal. Specifically, it is the responsibility of the IA to "grease the gates, cut the grass, clean the canals and conveyance structures, and cover illicit holes where water flows." The farmers were also informed that remuneration is given to those who rendered work.

Type II contract or the system operation and ISF collection contract is also available to the association that is ready to undertake additional responsibility aside from system maintenance. This is to "(a) disseminate information regarding water distribution according to the cropping calendar; (b) follow work activities related to planting and submit a weekly report on watered and planted areas; (c) distribute water equitably on time, and adequately; (d) collect and facilitate the payment of the collected irrigation service fee (ISF); (e) gather and collect information about the amount of water that goes into the irrigation system (discharge data); (f) inform changes made in the list containing water rights."

Type III contract entails the turnover of the whole or part of an irrigation system to the association. Such a contract entails the following tasks for the association: (a) operate and maintain a part or the whole of the system, the guidelines of which are prepared by the NIA to be concurred and approved by the farmers; and (b) pay amortization as scheduled, the amount of which will be computed based on guidelines set by the NIA.

After these were explained to Nong Tagoy and his friends, they finally decided to join the association so that they could share with the other members the benefits of the association. Likewise, they were willing to do the duties and responsibilities required of members of the organization.

### ***Slide Tape Production***

The production of the slide tapes entails the conceptualization of the script, shooting of pictures, music research, cold recording, production of sound effects, mixing and editing.

Two sets of articles had to be presented in the slide tapes. The presentation in the slide tapes would be in story form to avoid the use of technical terms. The story would also utilize the character of Nong Tagoy with the first presentation focusing on the care and maintenance of the irrigation system. This was presented in a scene where Nong Tagoy, being a new member in the association, visits the irrigation facilities and observes how these are operated and maintained. In the course of his visit he comes to know the things that should be done and should not be done to "maintain cleanliness of canals and durability of irrigation structures."

In his visit to the field, Nong Tagoy and his friend, Ipe, talked about the success of the association being anchored in the cooperation that exists among the members.

The second presentation is a continuation of the first story. Here, Nong Tagoy recalls the time when he was not yet a member of the organization. He remembers putting illegal checks on the canals just to get water. He is now grateful to Ipe, that he became a member of the organization where he now receives adequate water for the first cropping and often for a second cropping. He now knows how canals must be cleaned and maintained through cooperation among the members.

### ***Comics***

The ideas presented in the comics magazines were articles on events of successful IAs. These were based on actual experiences and exercises of IAs in Pasbugtaba and Bago NIS, Vista Alegre and Palacantian CIS.

Two issues of comics magazines were published. For the first issue, two versions were written. The first story in the comics was based on the discussions with the officers and members of the Pasbigtaba Irrigators' Association and was entitled "Nong Binoy and the Association."

The story emphasized the importance of a strong, active and dynamic leadership. The story was about Nong Binoy, the IA president, who called the attention of Nilo, an IA member, who created an illegal turnout in the canals that disrupts the water distribution schedule. Nong Binoy came to



know that Nilo has not been attending the IA meetings, and thus he is not aware of the standing rules in the association regarding the water distribution schedule. The story also presents the IA leader accompanying the association treasurer in collecting the ISF. This gives the president an opportunity to talk to other members of the association.

The story also included other characters as Lito, Iskoy and Ulping. In simple conversations, they were able to identify solutions to some problems of the IA. They recalled that when the association had just started, it was not yet well managed. Problems and complaints rose from the members because of mismanagement. Vital information was not properly disseminated and this resulted in a bad reputation for the NIA. Farmers became reluctant to pay the ISF because water and other farming needs did not reach their farm. To hasten the progress of the association, the members agreed to turn it into a cooperative. They also registered at the Quedan Financing Board where the members were able to take out loans using their stored *palay* (unhusked rice) at the National Food Authority, [NFA] as collateral.

The second story was entitled "The Meeting." The scene of the story was a meeting where the officials and members of the IA were discussing some issues and problems affecting the association (i.e., water distribution schedule) and what to do with materials coming from the NIA and the IA's donation to the local elementary school.

A five-hour water schedule was being discussed to be enforced in the IA. But, it was only after the explanation of the officers that some farmers consented to this schedule. The members of the IA also agreed to donate a flagpole to the local elementary school.

Aside from the stories mentioned above, the first issue of the comics magazine also included a brief description of the Pasbigtaba Irrigator's Association and the Vista Alegre Irrigator's Association.

The second issue of the comics was entitled "The Successful Irrigators' Associations." This issue included 2 stories. The first was based on the discussions with the officers and members of the Palacatian IA and it was entitled "A Little Sacrifice." It emphasizes the importance of a strong and dynamic leadership in the association in order for it to prosper.

The story was about Pidong, an IA president who utilized the time meant for his family in guarding turnouts in his area. In this way, he is attending to his responsibilities as president of the IA. Pidong made the farmers understand that active participation of both the members and the

officers in the activities of the association would pave the way for a progressive IA.

The second story was entitled "Unity and Cooperation." The story emphasized the need for unity and cooperation of the members and officers in the IA to be able to realize sufficient benefits from the irrigation system. This was illustrated in a condition where several farmers refused to let the NIA rehabilitate a defective structure. The argument was that for NIA to rehabilitate the system, there is a need to close the dam. This created anxiety among the farmers some of whom were not members of the IA—duck raisers and grass cutters. They had raised this matter to the Regional Trial Court that ordered a restraining order to rehabilitate the defective structure.

The IA president, Ador, called for an emergency meeting to confer with other members and officers to come up with a solution for this problem. It was then decided that the IA would support NIA's plan to close the dam to rehabilitate the defective structure in the irrigation system. The court, on the other hand, ruled in favor of NIA, that is, to close and rehabilitate the defective structure. This was realized after hearing reasonable arguments and seeing the need for it.

### *Wall News*

The concept of the wall news was to inform and update the farmers on news and more recent issues relating to irrigation activities. Three issues of the wall news was published, with the dates of publication as follows: June, September and October. The wall news published as part of the IEC materials has three parts: news proper, editorial and features.

In the first issue of the wall news, the production and dissemination of IEC materials were disclosed. It was stressed that the purpose of the production of these materials was to increase farmers' awareness about their duties, being members of the IA. Through these materials it was hoped that they would also become aware of the things to do to operate and maintain the irrigation systems.

The wall news also informed the farmers that in order for their organization to flourish, there is a need for the members to perform their duties and responsibilities. As members of an organization, there is a need to devote time and effort to the IA's activities. It was also stressed that cooperation and smooth interpersonal relationship among the members are needed for the success of the organization.

The editorial section of the *first issue* discussed the reasons, disadvantages and prevention of illegal diversion of water in the association.

Water is usually illegally used by members who are not satisfied with the amount of water they receive for their farms. Nonmembers may also be responsible for such an activity since they are not interested in the conditions of others but only in themselves. Some of the ways of illegally diverting water are the following:

- A bamboo pole is inserted into a canal which passes through the dike so that water can go directly to the rice fields. Sometimes, what is used are not only bamboo poles but also iron tubes.
- The construction of an illegal weir. This is usually done to prevent the water from flowing into the canal. Water can then be stored, making its flow faster into the direction of their rice fields.
- Destruction of dikes. A section of the dike is removed so that water can flow into the rice fields. Once water is availed of, farmers cover the dike.
- Temporarily installing an electric or motor pump in the canal. This is usually done at night so the farmers will not be caught.
- Reducing the thickness of the embankment. This is done to widen the field or as a preparatory step to the construction of an illegal turnout. If the embankment is not thick, it is easy to insert a bamboo pole and because of its thinness, it easily falls apart.

In the wall news, the farmer members and officers were warned to watch out and be vigilant for these malpractices.

Also featured in the first issue of the wall news are the characteristics of a successful IA. According to the issue, successful IAs are those that do not rely on NIA on matters that could be resolved by the associations themselves. It was emphasized in the feature that although it may be the responsibility of the NIA to construct the irrigation systems, and to schedule water distribution, maintain and tend canals and other irrigation structures (depending on the type of irrigation system), it is also the responsibility of the association to find solutions to problems related to water distribution and

illegal use of water. This also calls for cooperation by the members of the organization.

The second issue of the wall news revealed that as a result of having a favorable collection efficiency the IAs were given incentive payments. The Palacatian IA, a member of the Agahan-Sta. Barbara River Irrigation System received P55,588.74 as incentive payment for achieving an 80.12 percent collection efficiency. They were also able to pay the IAs a back account amounting to P89,958.00. The IA was also able to secure a P1.36 million loan from the Land Bank of the Philippines since the IA is already registered as a cooperative.

Aside from cash incentives, the IA was able to acquire a typewriter and three calculators from the Allah Valey Ventures Corporation for having reached the required order quota for farm chemicals.

Other associations that were given incentive payments were the Cabuglasa IA and the Lacasan IA.

Also featured in the wall news is the cropping calendar. The farmers were expected to follow the cropping calendar or the schedule of the different farm activities in order to be assured of a good harvest.

The wall news also explained the four phases of the cropping calendar. The first phase is the land soaking/land preparation/transplanting period. This activity includes the soaking of the field with water for easy preparation for seed planting. This is followed by plowing the field and the transplanting seedlings. The second phase is called the normal irrigation period where the growth of rice usually occurs and the rice fields must be adequately irrigated. The third phase is called the terminal irrigation period where water requirement is less than for the preceding period. This is when the harvesting period is already near. The fourth phase is the harvest period where rice fields no longer require to be irrigated.

In having such a schedule, the NIA personnel can identify which field/farm needs water as well as the amount of water required.

In the above issue of the wall news, the problems of following the cropping calendar were also described. The most common problem identified as a hindrance in following the cropping calendar is in finances. Often, the cropping calendar is not followed because the farmers covered by the schedule do not have the resources (in terms of money) to start preparing the field. The farmers do not have the money to buy seeds and fertilizers necessary in farm production. Frequently, these farmers start planting or start preparing the land when water is not already available for his farm.

Another factor that impedes the implementation of the cropping calendar is the inadequacy of water, especially during the dry season. Such circumstances would only delay the implementation of the schedule.

The third problem often encountered in following the cropping calendar is that some farmers insist on having a third crop. In their desire to achieve an additional cropping, farmers often disrupt the water schedule of other farmers. This is when they would put illegal turnouts to get water intended for other farms.

The wall news also encouraged the farmers to practice cooperation and a little sacrifice in following the schedule in order to assure a good harvest in their own farm.

The third issue of the wall news which was published in October was on *cooperatives*. According to this issue, a cooperative or any other association registered with the Securities Exchange Commission is qualified to contract any of the following four types of loans through the Land Bank of the Philippines.

***Agricultural Production Loan.*** This type of loan can be used to purchase farm inputs such as seeds, fertilizers and other chemicals. It is also available for hog raisers as well as for cattle and chicken raisers. The amount the member can obtain depends on the member's need and capacity to repay.

***Facility Loan.*** This type of loan is used by members to purchase equipment such as dryers, threshers, milling equipment and warehouses. However, such a loan requires a collateral before being granted.

***Commodity Loan.*** The amount given in this type of loan is equivalent to the value of palay stored in the cooperatives' warehouses. Usually, the farmers get this type of loan to prevent selling their produce at low prices.

***Operating Capital Loan.*** This type of loan is given to those who want to have an added capital for the cooperative. An additional capital would entail added services to the members. They will be capable of buying and selling palay or any other crop and the cooperative will be able to repair and maintain their own farm equipments.

The wall news also emphasized that the success of the cooperatives lies in the members' patience, discipline, cooperation and determination to support the cooperative.

The wall news also informs the readers on how to register a cooperative. Legal papers must be facilitated and signed by the concerned parties for the cooperative to be registered. Although often the facilitation of papers takes much time, patience and persistence must be present among the members of the cooperative. The cooperative has to be registered at the Cooperative Development Authority (CDA) to be able to gain legal personality. The registering cooperatives may be categorized into the following: type of membership, kind of land where the cooperative is located, type of service, activity and manner of selling of products by the cooperative. Once the cooperative is registered, it can apply for a loan at any financing agency. The cooperative can also join a federation where donations and aids from national and foreign agencies and organizations are available.

The wall news also stressed that any project of the government would only succeed if the beneficiaries themselves are involved in implementing the project. The success of any given project would only be possible if agencies involved would get from the would-be beneficiaries their opinions, sentiments and participation.

### **Pretesting and Distribution of Materials**

The information, education and communication materials were printed in the local dialect. These materials were first edited before the pretesting of these materials. The materials pretested were the brochures, the wall news and the first issue of the comics, one with illustrations and sketches and the other containing only illustrations. Separate materials were used for the comics to identify whether these illustrations corresponded to what was being described in the text. The officers and members of the Palacatian NIS were involved during the pretest and the respondents were divided into four groups to examine the four types of IEC materials.

Questions pertaining to the content and presentation of the brochures were asked from the groups of respondents. These groups of farmers revealed that the text and the language used were easy to understand and that the illustrations corresponded to the text.

The same questions were also asked of those who examined the comics with illustrations in the text. It was found out that the words and concepts presented in the comics were easily understood by the farmers. Moreover,

the farmers recommended that the comics must include more information about water distribution and maintenance of the irrigation system.

With regard to the comics with illustrations only, the farmers were asked to interpret the sketches. Several interpretations were made by the farmers and it was recommended that the comics would be more useful if dialogues were included.

The respondents examining the wall news revealed that the text as well as the language used were easy to understand. With regard to the slide tape presentation, the farmers informed the researchers that it was interesting.

After the pretest, the comments of the respondents were incorporated in the final texts. The final IEC materials produced were then distributed to the pilot or target areas. The issues of wall news were posted at conspicuous places in the barangays. The comics as well as the brochures were distributed after the presentation of the slide tapes. The chronological sequence of activities implemented in the region is shown in figure 5.

## **EVALUATION OF THE IMPACT OF THE INTERVENTION ACTIVITIES**

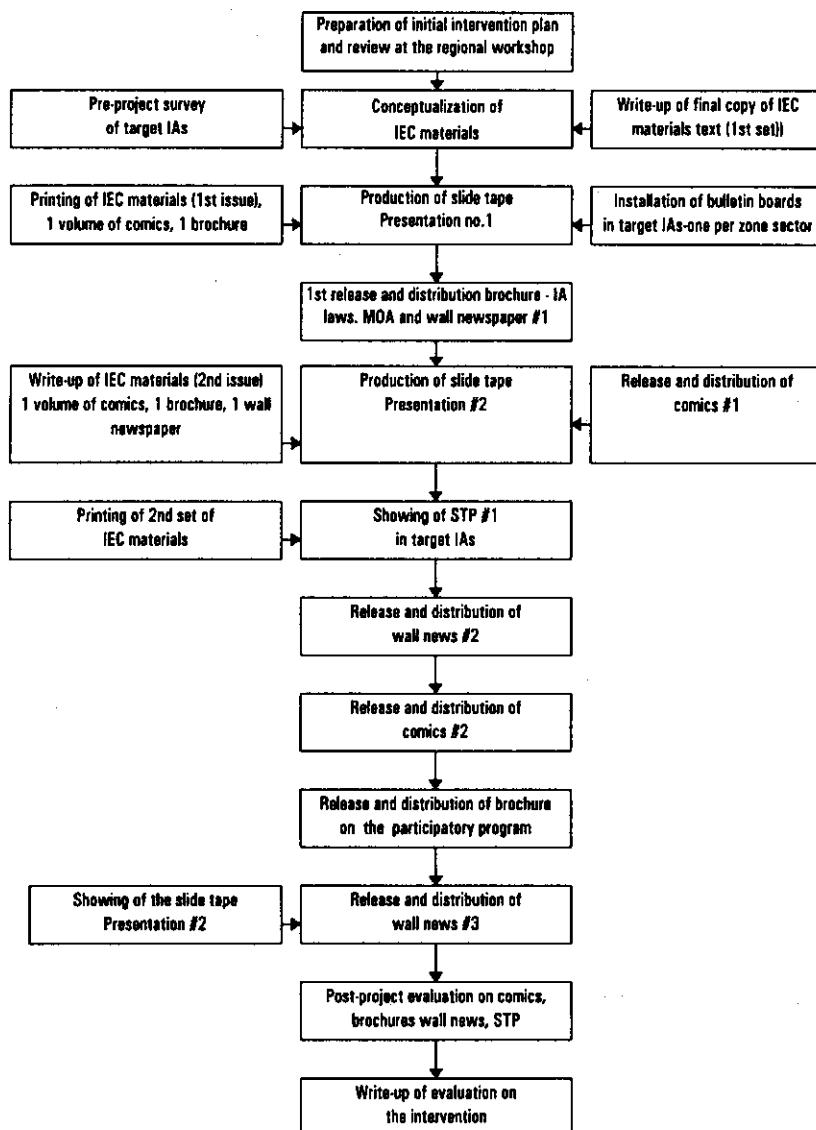
The impact of the intervention programs implemented in pilot areas is indeed difficult to measure. However, it is possible that the incidence of a given irrigation problem could be reduced over time in a community if a carefully conceived and organized plan is mounted and feedback on its effects is included.

In this particular intervention activity, the impact was evaluated using a questionnaire to find out its effects on the level of knowledge of the farmers in payment of ISF, participation in IA activities, and others. A pretest and a posttest were designed to evaluate the difference in the level of knowledge of the IA members before and after being exposed to the IEC materials.

### **Pretests**

This test was given to both the pilot/target groups and the control groups. It was used as a point of reference for measurement of the extent of the knowledge of the IA members about the associations. The questions prepared

*Figure 5. Chronological sequence of the activities undertaken in Region VI.*





were in the local dialect with the questions asked in the pretest focused on the IA bylaws, articles of incorporation, the memorandum of agreement, the contracts and participatory approach in irrigation management. These were prepared in a simple style so that the respondents would only check their answers.

Three types of tests were designed for such evaluation. These were the true or false, where the respondents will chose whether the statements written in the questionnaire are correct or not; and two different types of multiple-choice questions (choosing the correct answer and choosing the item that does not belong to the group).

Before administering the test, it was pretested with the officers and members of the PALACATIAN IA. During this pretest, the researchers observed that some respondents had difficulty in reading. Other respondents had to be helped in reading the items while others sought to clarify some questions despite the clarifications and instructions made before the test.

After the pretest, the questionnaires were modified based on the comments of the respondents.

The test was finally administered to the respondents of the Sibel and Belpat IA and the Hamtic, Camambugan, Anilao and Dumangas. An orientation of the activity was given by the research team; instructions on how to accomplish the test was also given.

On average, the respondents in these areas were able to finish the test in one hour. However, there were some who were only able to finish it in an hour and a half. This may be due to the fact that some of the respondents had difficulty in reading and understanding the questions. There was even a need to repeat the instructions given by the researchers before the start of the test. Another constraint was the place of examination—the venue was too small to accommodate all the respondents and chairs and tables were inadequate for the respondents.

Despite information campaigns on the pretest and a cash incentive of P20.00 (US\$0.80) each, only about 25 percent of the Pilot NIS members and 32 percent of the pilot CIS IA members took the pre-intervention tests. On the other hand, about 26 percent of the control NIS IA members and 36 percent of the control CIS IA members took the test.

## Posttests

After the pretest, the pilot areas were given the IEC materials. Five to six months later, the same test was applied to the members. The questions in the interview, however, would pertain to the contents of the IEC materials.

During the posttest, problems encountered during the pretest were also experienced. Some members had difficulties in reading and writing their responses. Despite the additional questions about the IEC materials, on average, the respondents were able to finish the test in one hour. It was also observed by the researchers that consultation between and among members became limited.

During the posttest, there was also a relatively low turnout of respondents. Only about 14 percent of the pilot NIA members and 26 percent of the pilot CIS members took the test. Moreover, only 24 percent of the control NIS members and 32 percent of the control CIS IA members took the test.

Such a situation may have been caused by the activities in the farm where the farmer members were preoccupied. Based on the turnout of the number of respondents, it could be deduced that some members were eager to learn and understand new ideas and concepts presented to them.

Based on the pretests, the majority of the respondents in both the NIS and the CIS had received informative materials such as Management of the IA, System Management, Financial Management and the Maintenance of the Irrigation System. Although this was the case, about 32 percent of the respondents in the NIS and 25 percent in the CIS claimed that they had never received any informative materials on their activities.

Based on the findings of the pretests and the posttests, there was a pronounced change in the scores achieved for the post-intervention examinations reflected in the overall increase of scores. It would only mean that the level of understanding of the members had increased. It was deduced that the changes in the scores were brought about by the exposure of the IA members to the IEC materials. *However, such an increase in the awareness of the farmers cannot be solely attributed to the IEC materials distributed to the members.*

The materials distributed to the farmers were also evaluated to determine which were more useful to them than others. For both the NIS and the CIS members, the IA bylaws brochure was rated as having helped them the most in getting to know their responsibilities, understanding relationships and

obligations of both the IA and the NIA. It was the mostly appreciated, easy to understand, and it clarified to them the participatory program. About 2,500 copies of the brochure were distributed in the pilot and other areas.

The farmers also revealed that the message presented in the comics was easy to grasp, entertaining and provided stories and information. Altogether 5,000 copies of comics magazines of both the first and the second issues were distributed to the farmers.

Moreover, the farmers commented that the wall news distributed to them was easy to understand. It was the best way to immediately disseminate irrigation news to the farmers. Six hundred copies of the wall news in three issues (200 copies for each issue) were distributed to the farmers.

With regard to the slide tape presentation, the farmers revealed that they had learned their duties and responsibilities as well as the participatory program of the NIA during the presentations. They also commented that the stories were inspiring.

## CHAPTER 5

### **The Social Action Research (Phase II)—Case No. 3<sup>7</sup>**

THE FOLLOWING DISCUSSION gives the details of the various activities undertaken from December 1990 to January 1992 under Social Action Research, highlighting the methodologies and strategies used by the project implementors.

#### **METHODOLOGY**

Before the intervention project was fully implemented, dialogues were conducted among the researchers, farmer members and officers of IAs and the NIA staff. A Provincial Research Coordinating Committee was formed and this met every second Thursday of the month. This committee was composed of the NIA staff; however, the regular participants in these meetings were the presidents and other representatives of IAs in the area covered by this study and the university researchers. Doubts about (vague) policies, plans and other information were thrashed out during the meetings.

A Regional Research Coordinating Committee consisting of the members of the Provincial Research Coordinating Committee and the top officials of the NIA regional office was also formed. This particular committee has the same functions as the earlier mentioned committee except

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<sup>7</sup> This chapter is based on the results and reports of the research conducted by Nieves, J. et al. (1992). The Social Action Research Project (Intervention Plan 2 for Region VI), Western Visayas State University, Philippines.

that it only once a month; but more people and higher officials of the NIA can have a dialogue with the farmers. Upon consultation between the two committees, the following activities were conducted; the members of the IAs involved in the project participated in this dialogue.

## **INTERVENTION ACTIVITIES**

The following are the intervention activities implemented by the Western Visayas State University.

### **Stimulation and Parlor Games**

Community singing was introduced by the researchers to the farmers. The community singing was initiated to break the ice in group gatherings, especially during the meetings. The song was about friendship, cooperation and camaraderie. Thus, in a very simple way, camaraderie and interaction were promoted.

### **Photo Exhibits and Special Awards**

During the launching of the intervention program, a photo exhibit of a "visual essay of the communal and national irrigation systems in Antique and featuring the three IAs under study" was conducted. This was formally launched at the Annavic Plaza Hotel in San Jose, Antique on May 31, 1991. Some 350 farmers, NIA top officials and other guests were present during the opening of the exhibit.

### **Song, Slogan and Logo Contests**

Contests in song, logo, and slogan-making were conducted. Participants in these contests were from the three IAs involved in this study—Hamtic IA, Sibel IA and Belpat IA. Under each IA the farmers regrouped themselves for better results. Prizes for the contests were solicited from donors in Antique.

### ***Song Contest***

For entries to the contest, a song must contain the ambitions and dreams of every farmer. The criteria for the contest were the following:

Message	30%
Melody	20%
Rhythm	20%
Originality	10%
Appropriateness	10%
Audience impact	10%
Total	100%

The results of the contest were as follows:

1. Hamtic IA

Date: August 17, 1991

Winners:

1st prize - Kaisahan VI

2nd prize- Kaisahan II

3rd prize- Kaisahan I

*Note:* Kaisahan is a grouping that is used in Hamtic IA which is a CIS. In the NIS, Turnout Service Area (TSA) is used to signify farmer grouping.

2. Belpat IA

Date: September 14, 1991

Winners:

1st prize - RAMC 20A, 21 and 22

2nd prize- RAMC 18, 19 and 20

3rd prize- Poblacion

3. Sibel IA

Date: December 1, 1991

Winners:

1st prize - RAMC 2

2nd prize- RAMC 3

3rd prize- RAMC 4

***Slogan Contest***

Simultaneously, a slogan contest was also held and this aimed to let the farmers express the spirit or aim of the organization and the farmer members' objectives in life. The slogan can be printed and framed for display in their IA office, to help motivate the officers and the members to realize their aims.

The criteria for the slogan contest were as follows:

Message	40%
Appropriateness	25%
Rhyme	25%
Originality	10%
Total	100%

The results of the contest revealed were follows:

1. Hamtic IA

Date: August 17, 1991

Winners:

1st prize - Kaisahan IV

2nd prize- Kaisahan III

3rd prize- Kaisahan V

2. Belpat IA

Date: September 14, 1991

Winners:

1st prize - Poblacion

2nd prize- Entry no. 2

3rd prize- RAMC 20A, 21, and 22

3. Sibel IA

Date: December 1, 1991

Winners:

1st prize - Entry no. 6

2nd prize- Entry no. 3

3rd prize- Entry no. 5

### ***Logo Contest***

Launched also at the same time with the above activities was the logo contest. This type of activity aimed to let the farmers find an identifying mark for the association. The logo also intended to distinguish the IA from other IAs and to give the farmer members an identity—belongingness.

The criteria for this contest were as follows:

Message	40%
Appropriateness	25%
Aesthetic appeal	25%
Originality	10%
Total	100%

The following were the results of the contest:

1. Hamtic IA

Date: August 17, 1991

Winners:

1st prize - Kaisahan VI

2nd prize- Kaisahan II

3rd prize- Kaisahan I

2. Belpat IA

Date: September 14, 1991

Winners:

1st prize - RAMC 20A, 21 and 22

2nd prize- Poblacion

*Note:* There was no 3rd prize as there were only two entries.

3. Sibel IA

Date: December 1, 1991

Winners:

1st prize - RAMC 1 left and right

2nd prize- Lateral II

3rd prize- RAMC 3



**Lectures and Group Dynamics Exercise**

During the weekly meetings of the farmer members, group dynamic exercises were taught to help promote camaraderie and cooperation among the farmers.

*Sitting in a Circle, Counting Off and Introducing One's Neighbor Instead of Introducing Oneself*

The objective of this activity was to give importance to and know the rest of the members of the organization who may not be able to actively participate in the discussions of the group.

This activity revealed that some farmers appreciate this type of seating arrangement during meetings, which helped enhance communication within the organization. It was revealed that communication would flow naturally and informally.

***Blindfold***

The purpose of this activity was to show the farmers the difficulty of trusting a co-member to lead in certain areas while you are blindfolded. In the context of the organization, this activity taught the members to learn to trust his leaders as well as his co-members. The members were made to understand that trust or faith among the members is a mode to success and progress of the organization. Trust among the members may be expressed in the following farm activities: observing water schedules, maintenance of irrigation canals, and prompt payment of the irrigation service fee.

Different reactions were disclosed by the farmers; some farmers revealed that it was difficult for them to walk blindfolded. They revealed anxiety over the honesty of their leaders. Others expressed full trust in their leaders.

***Lecture on Self-Growth and Group-Growth***

The lecture helped the farmers identify signs of immaturity among the members; these are responsible for curtailing instead of promoting progress in their organization. The following were identified as the weaknesses of the members of the organizations:

- passivity
- lack of camaraderie
- negative outlook over problems
- inability to preserve commitment
- incompetency in terms of performance
- blind acceptance of tradition
- lack of clear goal

The discussion on self- and group-growth focused on the members' capability to perform tasks and duties alone, the ability to promote camaraderie within the organization and the awareness that one's action may be the consequence of another. This discussion also emphasized the concept of having knowledgeable and experienced members paving the way to a more competent organization.

### ***Assets and Liabilities***

In this type of activity, farmers were asked to identify their own strengths and weaknesses. Farmers were requested to distinguish positive traits or their own potentialities that may contribute to the attainment of the IA's goals and objectives. After self-assessment, the farmers were also asked to identify negative and positive characteristics of their co-members.

They were also made to be aware of and realize their own imperfections and negative traits. One would realize that in not all circumstances should someone be held accountable for a dubious result but that on several occasions a member should assess his own self.

### ***Cutouts***

The farmer members were asked to enumerate the visions and missions of each of the IA members. The following were their responses:

- a progressive association
- increase in yield
- camaraderie and cooperation among its members
- competent and responsible officers
- physical progress of the IA (in terms of having their own warehouse)
- physical improvements of the canal (in terms of lined canals)

Such activity was aimed at letting the farmers realize that success and progress of the association could be achieved through cooperation no matter how small their contribution was.

### ***Pledges***

The objective of this activity was to identify the goals of the association and the corresponding mechanics or the process by which they could achieve such goals. In view of this, they have expressed assurance that they would:

- promptly pay the irrigation service fees
- eliminate the illegal checks and heed the rules and regulations agreed upon by the members on the water distribution scheme
- cooperate with the other members during the cleaning and maintenance of the canals
- follow the rules and regulations of the IA
- actively attend to and participate in the different IA activities
- be aware of and recognize the obligations of each member

### ***Building a House***

The purpose of this activity was to make the farmers realize that the association needs to be strengthened to be able to assist them on issues concerning the IA. For this to be achieved, regular communication within the organization should be present. Each member has to have his own contribution for the success and progress of the association. However, for better results, they must be synchronized.

It was also stressed in this activity that members should be consistently present and active in the IA meetings for them to be able to take part in the evaluation and planning for the association.

### ***Chain in a Circle***

This activity aimed to make the farmers realize that unity within the organization is significant to its success and progress. This activity also gave importance to the fact that the organization needs a strong and active leadership with cooperative membership striving to achieve a common goal.

### ***Giving and Receiving Coins***

This activity aimed to let the farmers realize that as members of the organization they must have a give-and-take relationship wherein resources as well as their own abilities were shared for the benefit of his co-members and the organization as a whole.

### ***Special Awards and Incentives***

During the culminating activity of the intervention program in this particular region, a search for the **Best TSA** was made. The TSA must possess the following criteria for it to be considered as the best:

- highest fee collection 30%
- best maintained canal 20%
- best water delivery system 20%

- least number of conflict within the IA 15%
- highest percentage of participation of the members in the activities of the IA during the intervention project (meetings, trainings and contests) 15%

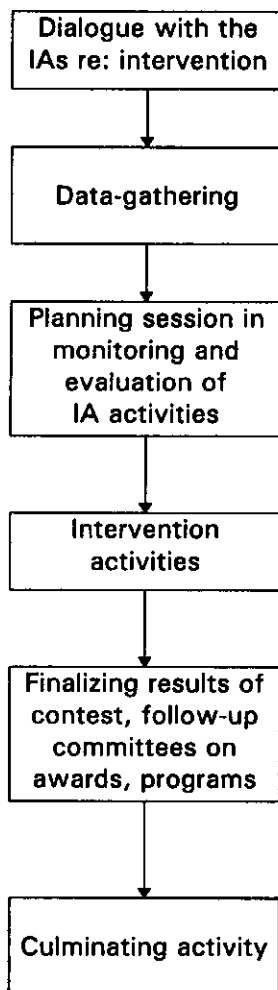
The prizes for the Best TSA in this region were solicited from donors and were awarded in the form of farm tools and equipment. A chronological sequence of the activities of the IA is presented in figure 6.

### **IMPACT OF THE INTERVENTION MADE ON IA AND SYSTEM PERFORMANCE**

The impact of the intervention project in this particular region was assessed in five aspects, namely:

- collection efficiency of the IAs
- extent of attendance of the IA members in the IA meeting
- extent of participation of the IA members in the various maintenance activities such as: (a) desilting, cleaning, patching and reshaping of the main canal, supplementary canal, division box, drainage canal and the manhole, (b) greasing and welding of the steel gate of the main gate, turnout, and the check in canal, and (c) hauling and drying
- water distribution management
- conflict management

*Figure 6. Chronological sequence of the activities undertaken in Region VI.*



### Collection Efficiency

Based on table 11 collection efficiencies of the IAs involved have improved and the increase of the collection efficiencies of the IAs ranged from 0.05 to 35 percent. Specifically, the HMTIC IA has a 35 percent increase in its collection from the previous year, the highest among the rate of increases in the IAs. It also recorded a 185 percent increase from the collections in 1985. This IA also showed an annual average increase of 26 percent, also the highest among the three IAs. Among the three IAs, it is also quite interesting to note that only the BELPAT IA had a modest increase of 0.05 percent from the previous year's collection and an average annual increase of only 10 percent. This very insignificant increase was attributed mainly to the change in leadership within the IA in the middle of 1991.

*Table 11. Collection efficiency of selected IAs in Region VI.*

Year/IA	HMTIC % increase/ decrease	SIBEL % increase/ decrease	BELPAT % increase/ decrease
1986	23.42	61.00	40.30
1987	38.69	12.00	-6.00
1988	13.26	3.50	21.00
1989	12.17	20.00	112.48
1990	-3.00	-16.00	10.00
1991	35.23	31.00	0.05
Average yearly increase	26.41	14.00	10.00

The numerous strategies and schemes implemented in this particular IA had in one way or another assisted in achieving these results. Such strategies are: (a) the lecture on self- and group-growth wherein farmers were made to understand their own task for the growth of the organization, (b) that the farmers also pledged prompt payment of the irrigation fee, and (c) under the intervention project, incentives and awards were given to the IA which had the highest collection efficiency.

Remarkable improvements in the collection efficiencies of the IAs cannot be rightfully claimed by the intervention project; such increase was *principally* due to the various schemes and strategies implemented under the project. There is a need to consider the income of the IAs from other sources.

### *Attendance in Meetings*

The average attendance of the IA personnel during the meetings is shown in table 12. At HAMTIC IA, only the extent of participation of the BOD was assessed. The corresponding attendance of members in the general assembly as well as in the special meetings was also assessed and a 10 percent increase in the participation of the BODs was evident from the tables below.

*Table 12. Attendance in the meetings of IA personnel before and after the intervention plan.*

IA	Average Attendance		% increase
	1990	1991	
1. HAMTIC			
BOD	8.27	19.12	10.30
Gen. assembly	51	55	7.80
Special meeting	26	28	7.70
2. SIBEL			
BOD	6.69	8.54	28.00
TSAL	13	15	15.00
IA collectors	8.54	8.66	1.40
WDD	2.1	3.4	62.00
3. BELPAT			
BOD	6.4	6.4	0.00
TSAL	10.8	11.4	5.20
IA collectors	3.1	4.4	42.00



Moreover, it was revealed that where all personnel in the SIBEL IA were concerned there was an increase in the extent of participation. However, it is noticeable that the water delivery and distribution personnel (WDD) or the water master had recorded the highest rate of increase in terms of attendance in IA meetings. It recorded a 62 percent increase from 2.1 in 1990 to 3.4 in 1991. It was likewise notable that only the IA collectors recorded the lowest improvement in terms of the frequency of attendance in the meetings. Only a modest 1 percent increase was observed in this improvement.

In contrast to the Sibel IA personnel, IA collectors in the BELPAT showed a significant improvement in terms of the frequency of attendance in the IA meetings.

This improvement in the attendance of these personnel may be attributed to the activities implemented during the intervention program. Specifically, this may be attributed to the activities during the lectures and group dynamic exercise, i.e., building a house. The building of the house was used to emphasize the need for a two-way communication in the IA to be able to reach a common goal. It was through this activity that active attendance and participation in the meetings were indirectly given significance.

Moreover, the giving of special awards and incentives to the IA that posted the highest percentage of participation on the activities of their association during the intervention project (meetings, trainings, and contest) also influenced the members' sensibility and consciousness to observe attendance in such activities.

### **Participation in Maintenance Activities**

This particular indicator, includes the following:

- cleaning, desilting, patching and reshaping of canals and ditches;
- greasing and welding of steel gates
- hauling and greasing

The extent of participation of IA members in selected IAs in Region X in maintenance activities is given in table 13. In general, the participation in

Table 13. Extent of participation of IA members in selected IAs in Region X in the structure maintenance activities (in %).

	HAMTIC			SIBEL			BELPAT		
	1989	1990	1991	1989	1990	1991	1989	1990	1991
1. Cleaning, desludging, patching and reshaping of:									
Main canal-BOD	78	84	88	73	79	88	69	79	82
Supp. canal-TSAL/m	75	88	95	83*	84	89	65**	75	80
Division box-BOD		100		73**	79	88	73	82	90
Drainage out-TSAL/m	92	86	92	66	75	86	85	90	91
Manhole - BOD	89								
2. Greasing and welding of the:									
Main gate - TSAL		100	100	78	82	89	68	71	80
Turnout - TSAL		100	100	67*	70	80	56	63	68
Check-in out-TSAL		100	100	79	80	91	63	65	87
3. Hauling and drying TSAL	79	95	98						
Average	83	94	96	74	78	87	68	75	83

\* - Special provisions committee.

\*\* - TSAL and members.

\*\*\* - Special provisions committee and the TSALs and members.

structure maintenance activities by the BODs and the TSALs as well as by the members showed significant improvement. All three IAs recorded an increase in the extent of participation of the mentioned personnel and these ranged from 15 percent to 22 percent in a three-year period.

Before the intervention plan was implemented at the HAMTIC IA, participation of the IA members in the maintenance activities was already quite significant. Upon the conclusion of the intervention plan, however, a 15 percent increase in the extent of participation was attained. Moreover, such modest increment revealed that among the personnel in the IA, the TSA Leaders and members responsible for the cleaning of supplementary canals had significantly improved their participation. Despite such improvements, and a generally maintained structure, it cannot be disclaimed that if the members were given enough incentives in participating in maintenance works, significant improvements would develop.

It has also been found out that the extent of work accomplished by the TSAL as well as by the members and the BOD in structure maintenance had improved. A 13 percent increase was observed with regard to the rate of work accomplished by the IA personnel at the HAMTIC IA. Specifically, only the BOD had the highest rate of increase in terms of work accomplished.

The extent of participation of the personnel in the SIBEL IA was also observed to have improved. In general, a 17 percent increase was evident in the extent of participation of the personnel. The TSAL and members who are engaged in cleaning and desilting of the canals and ditches showed the highest rate of improvement in terms of participation. These members had a 30 percent increase in their rate of participation.

An improvement was also seen in the rate of work accomplished. A 20 percent increase was evident in terms of accomplishing structure maintenance.

It was only at the BELPAT IA that the extent of participation and the work accomplished by the personnel had significantly improved.

Improvements by these personnel and the increment of the work accomplished may be generally attributed to the schemes employed at the IAs under the intervention program. Such strategies as the lectures and the group dynamic exercises had increased the members' level of awareness in terms of participation in the maintenance activities of the IA.

### **Water Distribution Management**

Water distribution management in the IAs was assessed in terms of the extent of the benefited area of the system during the wet and the dry seasons.

Improvements in some of the IAs in terms of increasing benefited areas, can be seen in table 14. Specifically, only the HAMTIC IA was observed to have a significant improvement in both the wet and the dry seasons for a reference period of seven years.

At SIBEL IA, a modest 3 percent was observed as the benefited area increased from 403 ha in 1990 to 418 ha in 1991. However, because of deteriorating structures, i.e., erosions, rusting steel and decaying wooden

*Table 14. Water distribution management reflected in the extent of area (ha) benefited at selected IAs in Region X.*

	1984	1985	1986	1987	1988	1989	1990	1991
1. HAMTIC IA								
wet season	70	70	80	80	80	90	90	97
dry season	70	70	80	80	80	90	90	97
average	70	70	80	80	80	90	85	97
2. SIBEL IA								
wet season				432	431	257	403	418
dry season				432	435	424	407	409
average				432	433	340	405	413
3. BELPAT IA								
wet season				279	166	166	262	275
dry season				225	263	225	229	251
average				252	214	195	245	263

facilities and extreme natural calamities such as droughts and floods, the benefited area had not improved in a reference period of four years.

At the BELPAT IA, however, a modest increase of 7 percent was evident from 1990 to 1991. However, in a reference period of four years, only a 4 percent increase was evident.

These positive trends in the water distribution management show the increasing capability of the IAs to handle supervision of water distribution.

### Conflict Management

As presented in table 15, conflicts within the IA during the period of 8 years, has been declining. The conflicts cited in this study are those which demand the attention and consideration of the Board of Directors.

It is quite evident also from table 15 that only the HAMTIC IA has not registered conflicts that required the attention of the BOD through the years. This was possible since this IA covers only one town with only 96 members who are mostly related to each other by consanguinity or

*Table 15. Number of conflicts recorded in selected IAs in Region VI, before and after intervention.*

	HAMTIC	SIBEL	BELPAT
1984	-	5	-
1985	-	7	-
1986	-	6	-
1987	-	11	2
1988	-	7	4
1989	-	4	3
1990	-	3	3
1991	-	4	2
1992	-	1	-
Total	-	48	14

*Note:* Interventions commenced in the latter part of 1991.

close association. In small organizations and with familiar members, conflicts are easier to handle.

On the other hand, the table also revealed that at the SIBEL IA, conflicts are more pronounced. Altogether 48 conflicts that required the attention of the BODs were registered within a period of 8 years. Although this is the case during the span of the intervention project conflicts within the organization were minimized by 75 percent. It can be viewed therefore, that before intervention, communication within the organization was limited. This particular IA serves two towns in this region with 600 members, requiring much effort and time to disseminate the necessary information to the members.

At the BELPAT IA, in a period of 8 years, only 14 conflicts requiring the attention of the BODs were recorded. Moreover, after the implementation of the schemes under the intervention program, conflicts within the organization have been completely eliminated.

The improvement in conflict management was attributed to lessons imparted to members on self- and group-growth as well as to the intervention components related to group dynamics. Most of the schemes and strategies employed stressed to the members the importance of communication in the organization. These strategies also increased the

members' awareness of the importance of participation in the activities of the IA.

It was evident that the intervention has influenced several changes in the Irrigators' Associations. However, the duration of the intervention is not enough to give all the credit to the action research for the improvement seen.



## CHAPTER 6

### **People's Upliftment through Self-Help—Case No. 4<sup>8</sup>**

THIS CHAPTER DISCUSSES the intervention made by the Central Mindanao University in Region X in collaboration with NIA and IIMI. This is divided into the following sections: methodology, the intervention activities, and the impact of the experiment to the IAs and to the irrigation systems.

#### **METHODOLOGY**

This experiment was anchored on the premise that "the basic necessary condition in institutionalizing any developmental project... is the participation of the target clientele, the government as well as the nongovernment agencies."

The main thrust is to "assist the farmers' IAs to become self-reliant organizations using the community-development process of creating planned social change using the IAs as the channel to institutionalize such approach." The specific objective was to improve the performance of selected irrigation systems in Region X through: (a) accelerating the viability of the selected IAs; (b) developing a mechanism that will improve the O&M of the irrigation facilities; and (c) monitoring and evaluating the intervention process.

#### **Pilot Areas/Radiation Areas**

The Kisolon-San Vicente IA and the Makapima IA were the pilot areas for the intervention. Radiation areas include the IAs of the Pulangi River Irrigation System, the Diclum IA and the San Vicente IA.

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<sup>8</sup> This chapter is based on the results and reports of the research conducted by Cabriles, D. et al. (1992). People's Upliftment through Self-Help. Central Mindanao University, the Philippines.



The Kisolon-San Vicente IA is being served by the Alalum River. It has a potential irrigated area of 600 ha but due to the expansion of Del Monte Philippines, a private-owned pineapple plantation, the service area was reduced to 300 ha. The actual number of farmer members of the IA is 103, 60 percent of whom are owner-cultivators.

The Makapima IA, on the other hand, has a total membership of 310 farmers, 76 percent of whom are owner-cultivators. The Makapima IA is at the tail-end of the Pulangi River Irrigation System and it was originally designed to irrigate some 1,200 ha. However, due to some defects in the system, actual irrigated area for the wet season was only 650 ha and only 600 ha were irrigated during the dry season.

The radiation area, on the other hand, is composed of one NIS and two CIS. All IAs in the Pulangi River Irrigation System except the Makapima IA are included in the radiation area. The Pulangi River Irrigation System (PRIS) has a total service area of 12,000 ha and 4,839 farmer beneficiaries.

The Diclum IA which services an area of 450 ha and has a total membership of 80 is also included within the radiation area. The same is true for the New Ilocos IA with a total membership of 60 farmers and a service area of 150 ha.

Basic data on the experimental group is given in table 16.

*Table 16. Basic data on the experimental group.*

Categories	Experimental			Control	
Name of system	Kisolon CIS	Pulangi River Irrigation system	Pulangi River Irrigation System	Diclum CIS	New Ilocos CIS
Name of IA	Kisolon- San Vicente IA	Makapima IA	(all IAs except Makapima IA)	Diclum IA	New Ilocos IA
Size of Membership					
Potential	103	487	4,839	80	70
Actual	103	310	80	60	
Service Area (ha)	103	1,200	12,000	450	150

## **INTERVENTION ACTIVITIES**

Using the Community Development Program, the intervention project in the Central Mindanao Region was implemented to assist farmer IAs to be self-reliant. In this program, to be able to achieve the goal, it has to undergo initiation, planning, legitimization, and implementation.

### ***Initiation***

It took three and a half months to accomplish this first stage. A general assembly meeting was conducted in each IA during this stage; presentation and discussions of the results of the previous study which was conducted on their IAs and on their action plans were finalized for funding. During the general assembly meeting, the findings in the study conducted by the Central Mindanao University entitled "The Comparative Performance of the National and Communal Irrigation Systems in Region X" were presented. It was from these findings that the action plans were derived.

### ***Planning***

A one week live-in seminar workshop for the IA Board of Directors (BOD) was conducted. In this seminar the Board of Directors, with the assistance of the research teams of this particular region, was able to make an organizational Annual Development Action Plan.

### ***Legitimization***

After the seminar workshop of the IA Board of Directors, a general assembly was again organized. This meeting was attended by the IA BODs, leaders, members, and the local officials or their representatives. In this activity, the proposed program was presented, discussed, validated, legitimized and approved. However, several internal and external farm activities hampered the immediate implementation of this activity.

### ***Implementation***

The implementation of the intervention programs started in May 1991. Several programs were conducted and accomplished by the IAs involved in

this study. According to their action plans, Kisolon-San Vicente IA was able to accomplish 75 percent of its plans while MACKAPIMA IA was able to accomplish 83 percent. Some specific interventions are given below.

### **Institution-Building and Enhancement Activities**

Several activities were implemented in relation to this aspect.

1. Conducted a training program seminar workshop for the following:
  - Pre-membership Seminar on Cooperatives (142 Participants). The following topics and issues were discussed during this seminar: Principles and practices, management of cooperatives, values education I, and the constitution and bylaws of cooperative organizations. This seminar was attended by IA members as well as non-IA members.
  - Continuing Education on Cooperatives (43 participants). The members who attended the pre-membership Seminar on Cooperatives were also the ones who attended this seminar. The following topics were discussed in the seminar: entrepreneurship development, financial management in cooperative organizations and the continuation of the values education for cooperatives.
  - Group Dynamics and Value Education (120 participants).
  - Making of Feasibility Studies (34 participants).
  - Planning and Implementation of the IA Annual Action Development Plans (ADP). The Annual Action Development Plans of each IA included in the pilot areas were initially made by the Board of Directors of the concerned IA during the Cooperative Seminar. These were presented to the IA officers who finalized them..

The plan prepared consisted of the objectives, strategies to achieve the objectives, specific activity for each strategy, the time frame, the persons

involved in the IA as well as the coordinating agencies in each strategy. The following are the one-year plans of the Pilot IAs:

***Kisolon IA***

***Objective No. 1: Improve the farming system***

**Strategies:** Adopt intercrop system (through the distribution of IEC materials, training, and demonstrations), acquire financial assistance through loans, organic fertilizer project (composting, and organic matter utilization), proper use and distribution of water (distribution of IEC materials) and continuous education (information drive, seminar and training).

The persons concerned were the IA members and the agencies involved were the Department of Agriculture, the National Irrigation Administration, the Department of Science and Technology, the Land Bank of the Philippines and the proponent university.

***Objective No. 2: Improve the O&M practices***

**Strategies:** Proper communication to members regarding IA activities concerning the O&M of the system (desilting/slashing, repair minor damages), strict implementation of the rules and regulations (information, education and motivation, strict imposition of penalties) and provision of incentives to outstanding farmers.

The persons involved were the IA members as well as the IA officers. Government agencies involved were the National Irrigation Administration, the Department of Agriculture, and the Department of Science and Technology.

***Objective No. 3: Additional family income through livelihood projects***

**Strategies:** Duck raising/backyard cattle fattening, handicraft making, backyard gardening and fish culture.

The agencies involved were the NIA, the Department of Agriculture, the Department of Agrarian Reform, the Land Bank of the Philippines and the Central Mindanao University.

*Objective No. 4: Social gatherings (Christmas celebration and prayer before meeting) and elimination of schistosomiasis cases*

**Strategies:** Coordinate with health agencies and implement intensive elimination of immediate host.

The agencies involved were the National Irrigation Administration and the Department of Health.

### ***Makapima IA***

*Objective No. 1: Institute income-generating activities for the IA and individual members.*

**Strategies:** Engage in duck raising, organize cooperatives, enter into a Type II contract with the NIA and use high-yielding varieties of rice.

The concerned persons were the IA members themselves and the agencies involved were the Land Bank of the Philippines, the Department of Agriculture and the National Irrigation Administration.

*Objective No. 2: Conduct training on basic leadership and managerial skills.*

**Strategies:** Short-term training courses coordinated with the Central Mindanao University and cross visitation and exchange of experiences with the Kisolon IA.

The persons involved were the IA members, the National Irrigation Administration, and the Central Mindanao University.

*Objective No. 3: Strengthen the turnout service areas (TSAs)*

**Strategies:** Visit, discuss and offer solutions with the members regarding the problems and experiences encountered.

*Objective No. 4: Strict implementation of the cropping calendar as well as the water delivery schedule.*

**Strategies:** Disseminate information about the cropping calendar, O&M policies and sanctions as well as the schedule of water distribution.

*Objective No. 5: Collect more than 85 percent of the current ISF and back accounts.*

**Strategies:** Orient the members on their responsibilities to pay the ISF on time.

*Objective No. 6: Refer to NIA for the repair and rehabilitation of some of the irrigation facilities in the area.*

**Strategies:** Set up a committee to survey, report and submit recommendations to the Board of Directors.

The concerned agency was the National Irrigation Administration.

*Objective No. 7: Inform the members about the incidence and prevention of schistosomiasis.*

**Strategies:** Coordinate with the Department of Health the drive against schistosomiasis. Coordinate with NIA in improving drainage to eliminate stagnant water.

- Concerned agencies were the National Irrigation Administration and the Department of Health.
- Coordinated the validation, legitimization and approval of the ADP.
- Assisted in the implementation and evaluation of the ADP.
- Strengthened the working relationship of the IAs with the other agencies and political units within the area of coverage.
- Assisted in the release of production loans from the LDP to the two IAs.
- Assisted and organized the IA cooperative with one IA (Kisolon-San Vicente) officially registered by the CDA as a full-fledged cooperative; MACKAPIMA registration papers were submitted to the CDA.

- Distributed IEC materials to all IAs and some municipalities in Bukidnon with the following number of materials given quarterly for three quarters.
  - a. Newsletter - 1,500
  - b. Peryodikit - 1,500
  - c. Primers - 2,300
  - d. Comics - 600
- Translated into Cebuano some basic documents of IAs and NIA.

#### **Improvement of Farming Systems**

1. Conducted and coordinated seminars in the Kisolon CIS on the following subjects:
  - Lowland Rice Culture and Management - 55 participants
  - Pests and Diseases of Rice and their Control - 60 participants
  - Soil Analysis and Sampling - 60 participants
  - Organic Fertilizer and Compost Making - 12 participants
2. Assisted in the organization of Cross Farm Visitation for problem-solving and field observations.
3. Initiated the inter-visitations between IAs to gain insights and learn from each other's styles and approaches.
4. Coordinated the artificial insemination of the members' carabaos.

### **Livelihood Training Programs**

1. Making of stuffed toys - 20 participants (Kisolon Only)
2. Soap Making - 29 participants
3. Duckery - 35 participants
4. Backyard Cattle Fattening - 35 participants
5. Meat and Food Processing Workshop - 50 participants

### **Operation and Maintenance**

1. Conducted water measurements and farm productivity studies.
2. Assisted MACKAPIMA in implementing Type II contract with the NIA income-generating contract.
3. Assisted in the strict implementation of the IAs' O&M policies.
4. Assisted Kisolon-San Vicente IA in changing its canal maintenance practices from pahina by sectors to hiring of labor to maintain lateral canals in the systems.
5. Initiated the "pulong-pulong sa Barangay" in MACKAPIMA as a mechanism for interaction and feedback at the turnout level.
6. Recommended the water distribution schedule and cropping calendar to the IAs during the low flow months.

### **Monitoring and Evaluation**

1. Conducted the following:
  - socioeconomic survey of the pilot IAs



- annual evaluation of the IAs
2. Conducted meetings, consultations and field visitations for interactions and feedback.

Figure 7 shows the order of activities implemented.

### **IMPACT OF THE INTERVENTION MADE ON IA AND SYSTEM PERFORMANCE**

The assessment of the impact of the intervention project in this particular region was focused on only the two following indicators:

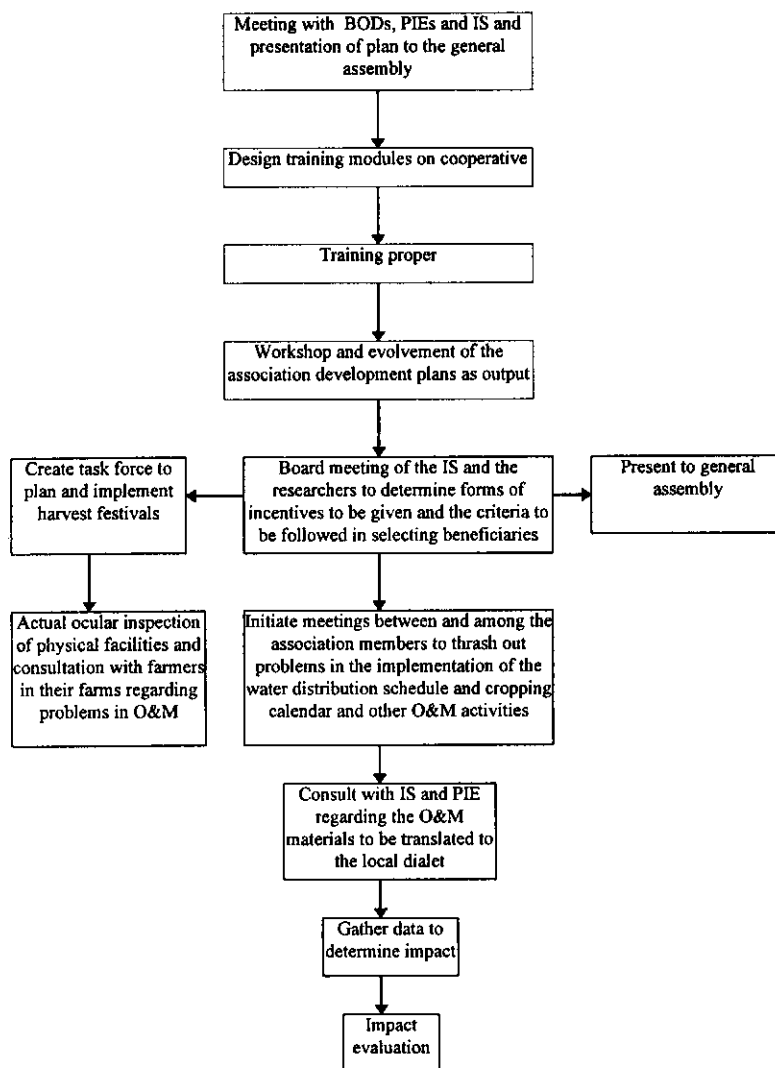
- water factors which include the conveyance efficiency and distribution efficiency
- participation of the members in the maintenance activities of the IA

Moreover, before focusing on the impact of the schemes and strategies implemented, it was also a major concern to examine the factors that promoted or assisted and even those that hindered the achievement of considerably remarkable outcome.

#### **Facilitating Factors**

Because of the promising outcome of the intervention project in both their economic and personal upliftment, local leaders such as the BODs were motivated to support the program.

*Figure 7. Chronological sequence of activities undertaken in Region X.*



IS = Irrigation Superintendent  
 PIE = Provincial Irrigation Engineer

The intervention plan helped guide the IAs concerned to make action plans for a period of one year. These action plans provided guidance to the IAs in achieving certain goals. Upon achieving a goal, a sense of accomplishment and satisfaction was perceived by the members.

The material and nonmaterial support provided by the IA BODs and the local leaders was of great assistance during the course of the intervention plan, especially in trainings.

The support given by the local officials of the government agencies in the region during the legitimization phase also gave encouragement to the farmers. Specifically, this encouragement was demonstrated in the form of attendance of these officials during the presentation of the action plans by the IA. It was quite evident that during the span of the intervention project, the Department of Agriculture in the region was completely supportive of the IA's plans.

Besides the support given by the agriculture agency, the CMU and the NIA also provided technical assistance and trainings to facilitate the implementation of the project. With the distribution of IEC materials and the use of the local radio station, the agencies were able to increase the IA members' awareness of the project.

The members of the IAs were also appreciative that the presence and the intervention of the university and the NIA assisted them in seeking assistance and services in different government agencies such as the Land Bank of the Philippines, the Department of Agriculture, and the Cooperative Development Agency.

Because of the members' increased awareness of the benefits and various opportunities in being organized as a cooperative, the members' aspiration to form a cooperative was beyond doubt.

To be organized as a cooperative, the members had to become aware of the other IAs. This, however, made the members reevaluate their plans and consequently some modifications were made. Such reevaluations and modifications provided an area for competition among the IAs.

The group dynamics and values education conducted stimulated the farmers to be more aware of the other members. Sharing of thoughts, feelings and actions was realized in this activity.

The community-development process which was adopted in conducting the intervention plan proved to have positive effects on the IAs. Such a process motivated the associations in preparing the action plans which eventually guided them in their activities.

### **Constraining Factors**

The following are said to have negative effects on the schemes implemented in the intervention project:

The presence of the Bukidnon Socio-Economic Foundation (BSEDF) negatively affected the farmers and the irrigation agency itself. The BSEDF is a private lending organization which charges a total of 22 percent interest<sup>9</sup> rate on loans applied for by the farmers. These loans are given on an individual basis which hinders the cohesiveness and team-building of the cooperative. The slow processing of papers and the policy that those farmers who still had an outstanding loan could not avail of the loan by the Land Bank of the Philippines forced these farmers to seek financial assistance from the BSEDF.

The implementation of the intervention plan was also affected in certain cases by the uncooperative attitude of the members in terms of attending the associations' meetings. This is evident in MACKAPIMA where the pressing farm activities and the distance from their residence to the meeting place adversely affect their attendance. There were also instances where the officers themselves were not cooperative and open to the program, and were obstructing the implementation of the project.

The excessive complexity of the process of acquiring loans from the Land Bank and the registration of the cooperative with the Cooperative Development Authority resulted in the delay of the program.

There was a deficiency in the potential market where they could sell their produce. This reality may be aggravated by the fact that there are no good roads, particularly in the CIS to facilitate marketing of their produce.

Because of the fact that most of the IA members are tenant farmers, they were not allowed to cultivate perennial crops, thus obstructing their membership in the cooperative.

Implementation of some of the activities in the associations, particularly in the MACKAPIMA IA was hampered by the following circumstances:

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<sup>9</sup> The 22 percent interest rate is divided as follows:  
18 percent for the principal loan annually,  
2 percent for service fee per cropping, and  
2 percent for capital buildup per cropping.

- Weak leadership, particularly that of the president. This came about as the result of the members' opinion of the president, thus preventing harmony and camaraderie within the organization.
- Most meetings of the IAs were often postponed due to low attendance of the members caused by several ongoing farm activities.

The support of the NIA field personnel in the intervention program was limited. Although the lack of support cannot be considered institutional, the rather numerous activities of the IDO limits his/her capability in supervising and coordinating the activities of the IA. It can also be presumed that the fast turnover of NIA field personnel results in considerable time for adjustments every time this happens so that much valuable time is lost.

Lack of understanding and cooperation among the farmers regarding water operation and management and the refusal of the NIA to repair a damaged check after it had been destroyed twice resulted in conflicts among the members and this affected the other activities of the IA.

There is no camaraderie within the organization, particularly in the MACKAPIMA IA. This situation hinders the smooth flow of the activities in the IA.

It cannot be denied that the officers play a vital role in the association. The success of the intervention project and the IA depend much on the competence and ability of the leaders. In the IAs under the pilot areas, it was observed that farmer leaders in the MACKAPIMA IA were less committed to the associations as compared to the leaders of the Kisolon-San Vicente IA. This may be due to the fact that the leaders from the Kisolon most of whom are community leaders have better or higher educational attainments. However, such differences do not justify the farmers in the MACKAPIMA IA having the right not to be less-committed to the association.

The above information revealed the factors that positively or negatively directly affected the intervention program. The next section gives a picture of how the implemented schemes had affected some indicators in the performance of the IA.

### **Water Factors**

The impact of the intervention program in the water factors was assessed using the following indicators:

- Conveyance efficiency refers to the amount of water distributed from the source and the amount of water that reaches the place of use. Based on the conveyance efficiencies, before and after the intervention program, an increase was found in the conveyance efficiencies of the systems involved. The increases of this particular indicator ranges from 6 percent to 24 percent. Such increases were due to the low water supply where the farmers tended to conserve as much water as possible by cleaning the canal from growing grasses, floating debris and bush, including patching any form of leakages along the canal embankments and in the turnouts.
- Distribution efficiency refers to the amount of water received by the system as a whole. It is quite evident from the study that only Kisolon CIS had an increase in this indicator. A 4 percent and a 5 percent decrease were evident at the Lateral F and K of the Pulangi River Irrigation System and a modest 2 percent increase was seen at the Kisolon CIS. Despite a decrease in the two laterals efficiency was still high which could be attributed to the status of the water users' organization and the size of the system. Moreover, the increase in the distribution efficiency at the Kisolon CIS may be because it has better organized IA members. Specifically, they have higher values and more cooperatives compared to the other two IAs covered by the PRIS. The operation and maintenance of the system were more effectively enforced and there were minimal illegal checks.

### **Participation of Members in the Maintenance Activities**

Based on evaluations, improvements in the participation of members in the maintenance activities of the pilot groups were evident in both the NIS and CIS. Specifically, most of the improvements were seen in the organization and management of the system. This includes improvements in the attendance in meetings and participation in training programs and in irrigation system maintenance.



## CHAPTER 7

### **Process Documentation Research—Case No. 5**

#### **INTRODUCTION**

THE INTERNATIONAL IRRIGATION Management Institute designed and implemented a process documentation research (PDR) in three selected national irrigation systems in the three regions covered by the Accelerated Agricultural Production Program as part of its research program. The actual process documentation research, however, was carried out by: a) the Ateneo de Naga University; b) the Central Philippine University; and c) the Xavier University from July 1989 to July 1990. The methodology was formulated primarily on the basis of the Institute of Philippine Culture's wide range of experience in this area of research. The Institute of Philippine Culture also provided the initial technical assistance and trained the three project leaders, one assistant project leader and eight process documenters.

#### **Action Research and Process Documentation**

Research is a process of systematic observation and data collection. Through systematic analysis of information, research leads to verifiable data and comprehensive understanding of some situation or event, for example, the farmers' refusal to pay irrigation service fees; research also looks for patterns and relationships that may not be obvious to the naked eye.

Action research is a special type of research, which basically involves "learning through action." One explicitly accepts that there is a lack of knowledge about certain implementation issues and this is where research proves very valuable. The researcher joins with the irrigation staff implementing a program and closely monitors and refines the program as implementation progresses. Thus, the staff promptly obtains needed information and can immediately make appropriate changes.



Action research in irrigation, therefore, should develop better ways of managing systems; not simply studying and understanding irrigation systems. The special characteristic of action research is that the researcher works closely with the program staff and provides regular feedback so that mid-course adjustments can be made in the program.

Process documentation is a form of action research that IIMI, NIA and collaborating research institutions (universities) used during the first year of the FIOP implementation. It involves many of the methods employed by participant observation, although process documentation and participant observation may have different objectives. Filipino researchers pioneered process documentation research in the 1970s while studying farmers' participation in NIA irrigation systems (Illo and Volante 1984; Jopillo 1985; Laitos 1989; de los Reyes 1989; Veneracion 1989). Process documentation provides a systematic recording of field-level activities, interactions, and concerns of farmers and agency personnel implementing an irrigation development program. It is a means for understanding the process of field activities so that implementation can be improved.

Process documentation is not a tool for solving an agency's site-specific problems. It is not a traditional monitoring device for measuring a project's progress. Process documentation may even be unnecessary in a project when most development tasks are finished and new field-level techniques and guidelines are being institutionalized.

Process documentation is a tool for developing a systematic view of field experiences. It is a way to gather detailed, timely data about field-level project implementation.

## **DEVELOPMENT OF PROCESS DOCUMENTATION WITHIN NIA**

In 1976, NIA began implementing the participatory approach in two pilot sites in small communal irrigation systems. Two years later, NIA and social science researchers met in a workshop to discuss the experiences and results of these initial efforts.

Social science researchers had already conducted a baseline survey and interim monitoring study of the two sites, using a traditional pretest-posttest design. This impact study, however, did not provide NIA vital information about the new approach—the specific decisions taken at each participatory

activity and farmers' roles in the participatory process. NIA needed a research tool that would focus on the *process* of the project as it evolved.

NIA officials soon realized that they were not testing a known approach, but developing a new one. In fact, the two pilot sites were not merely experimental tests of the participatory process, but actually served as learning laboratories where the participatory approach was being developed. If NIA was to learn about implementing this new approach, the research should not focus on outcomes, but on the *process*. Process documentation was the research method developed to study the process.

Process documentation, therefore, was not developed as an end in itself. It was developed as a tool, a social science method, to help organizations learn from their own experiences.

NIA also used process documentation to address certain deficiencies in traditional development planning. Usually, a planning document controls project implementation since it assumes that the implementing agency knows how to employ a new strategy. Irrigation development in the real world, however, faces uncertainty such as changing economic and political environments and unpredictable costs. Where knowledge is severely limited, traditional development planning usually proceeds as if knowledge were nearly perfect.

Development planners using the "learning process," however, candidly admit that their knowledge is imperfect and instead focus on a process by which programs and organizations are developed concurrently (Korten 1980). Development programs, therefore, are not designed or implemented but they emerge from a learning process. Practitioners of the learning process realize they do not know everything in advance, but they must learn and adjust as the development program evolves.

Process documentation proved useful to NIA because the agency adopted the learning process approach. NIA did not want field-level information filtered and cleansed before reaching them. They possess a learning orientation and actively seek accurate and timely information concerning field implementation.

Formally introduced in the late 1970s in one of the two original pilot irrigation sites, process documentation was later expanded to cover other sites as NIA implemented the participatory approach in other regions.

**Research Methods: Participant Observation**

Process documentation focuses on the actual processes that take place in development, rather than the outcomes, as it systematically and dispassionately helps agencies examine their own field-level experiences. As an action-research method, therefore, it relies very heavily on participant observation techniques, which stress social processes.

Through participant observation, a researcher not only observes irrigation behavior, but also experiences it. While a participant observer may be studying conveyance losses, s/he also observes it and may even help maintain the earthen canal along with farmers and officials. In fact, the participant observer not only asks farmers how their local organizations work but s/he actually attends their meetings.

In both participant observation and process documentation, trained researchers live in a particular social setting, such as an irrigation system, for an extended period of time. In an agricultural setting, the research may continue for at least one or two cropping seasons and while the participant observer experiences life in the community, s/he gathers relevant data.

Using participant observation, the researcher usually gathers information by observing the actions of others, without using questionnaires. The data gathered are used to describe the system and the researcher rarely uses quantitative measures.

While studying an irrigation system (or its associated community) the participant observer tries not to affect or alter that system. The observer tries to preserve the natural social behavior so that a true picture of the irrigation system emerges. Usually, however, the observer either unintentionally modifies or changes the system by virtue of his or her presence, or the system influences him or her.

Participant observation accomplishes at least three purposes. It is a way to: (1) capture and observe farmer behavior and actions as they actually happen, similar to a "video-tape" of the activities happening within an irrigation system (not just as if it were one photograph), (2) obtain a more thorough description of social life in the irrigation system, and (3) explore and discover things about the irrigation systems that were previously unknown.

When using participant observation techniques, the researcher must choose whether to work systematically or unsystematically. With systematic participant observation, the researcher develops categories for the data (for

instance: water distribution, system maintenance, conflict management) and then collects the data based on the predetermined categories. In systematic participant observation, the researcher does not observe the irrigation system randomly; s/he studies the system with certain important categories in mind. Most process documentation uses systematic participant observation.

In unsystematic participant observation, the researcher does not commit himself or herself to a particular design until s/he knows something about the social environment. If s/he first develops predetermined categories, something important and unique to this particular irrigation system could be missed. For instance, perhaps a system's operation and maintenance are severely constrained by an administrative problem in the capital city. If this constraint was not included as a predetermined category, there is a chance the researcher would miss investigating this important aspect of the irrigation system.

### **Research Methods: Process Documentation**

Process documentation uses many participant observation tactics and strategies, not for arcane research purposes, but as a tool for providing village-level implementation data to the implementors. Process documentation's explicit utilitarian bias sets it apart from other research methods. It does not value research per se since research is valuable only insofar as it can help project implementation.

Process documentation provides a "window" for implementors to objectively view field-level experiences and processes. It is also able to answer frequently asked questions, such as: What types of activities and tasks were undertaken? How were they carried out? What issues and problems emerged from these activities? What were the constraints and how were they managed?

Process documenters first need to be fully trained in participant observation methods. They are then required to reside in the community within the service area of the irrigation system and obtain data through observation and questions. They attend and observe project-specific activities and village irrigation activities. They also use interviews to clarify, refine and check the accuracy of their observations. However, they must remain passive observers and should refrain from intervening in the irrigation activities of either the farmers or the agency personnel. In this regard, they

are different from participant observers, who might actually participate in irrigation activities. The process documenter will usually record his or her observations by taking notes although it is impossible and impractical for him or her to take notes on everything. It is more important that s/he consider the purpose of the study, and then carefully observe the significant aspects of the irrigation system which are defined by the purpose.

The most useful tool for a process documenter is a field diary. The documenter uses a field diary to record his or her observations and thoughts in an orderly fashion. Recording observations and impressions enables a researcher to pick up clues about how the system is operating. Without the diary, the researcher might forget important details about the irrigation system.

A field diary should help the investigator understand the irrigation system's physical and social setting. It should describe who, what, why, where, when and how. *Who* refers to the people or system being studied. *What* concerns the information gathered. *Why, where, when, and how* provide important details about the observation.

There is no special format in writing a field diary but entries should be written daily in chronological order so that information is not forgotten or changed because of forgetfulness. Information in diaries can be written into notebooks or recorded on tapes. The critical concern is that observations are recorded in a diary regularly.

Diary content should be organized into two categories: observations and impressions. Observations should be objective; the documenter should only write down what s/he actually saw or heard. Observations include descriptions of the physical (climate, geographic area, resources), demographic (concentration, movement, and general characteristics of the people) and organizational (the different social levels in the system, the communication network, and the degree of complexity in the social system) settings.

The researcher also observes individuals, small groups, clans, families, ethnic groups, villages, and government organizations. Observations can be made of situations and human actions, including actions between farmers, between farmers and government agencies, and among different government agencies.

Observations can also focus on the process documentation itself. This involves evaluating how the research is being implemented, how thinking

about the problem is progressing, and how data collection and analysis are being conducted. Again the interactions of the people are observed.

The subjective impressions of the documenter make up the second category in a field diary. Impressions should be clearly differentiated from observations. If, for instance, the researcher observes a bitter argument between two farmers about water distribution in a canal, s/he should write down what was actually seen and then write down his or her own impressions of the event. Impressions are important because they help the researcher evaluate and give meaning to the observations. Thus, impressions should be recorded on all observations. As a result of recording impressions, new ideas may emerge and a better understanding of the irrigation system may occur.

Process documentation is also expressly designed so that the results and findings can be used by the project implementors. These findings should also be reported regularly to program implementors for their information and guidance in making timely program adjustments.

The results of the process documentation are best prepared on a monthly basis and regularly reported to the project implementors. Copies of the monthly draft reports should first be shown to agency field personnel for their review and comments.

The monthly report should not judge or evaluate the ways in which the project is being accomplished, but rather it should provide a descriptive or narrative picture of field activities of various project participants. Thus, the monthly process documentation report should not contain a section that evaluates the project's progress or a section that recommends steps to be taken in project management. The report should describe what is happening in the field, including "why" and the "how" without making assessments.

The process documenters, therefore, must consciously avoid evaluative terms. S/he must produce a "no judgment" report. To remain an effective tool for learning, process documentation must never be used to evaluate project/system staff performance.

Although the process documenter's field notes may be in the form of a diary or chronology of events, the report for project managers should not be a diary or chronology of events. To assist project implementors, the reports should stress relevant groupings or topics.

### **ADVANTAGES AND DISADVANTAGES OF PROCESS DOCUMENTATION RESEARCH**

In the use of the Process Documentation Research during project implementation, there are a number of advantages and disadvantages. These are given below:

#### **Advantages of Process Documentation Research**

- Process documentation can be particularly useful when a government agency is experimenting with new or different development processes. A traditional pretest/posttest evaluation can help implementors determine a project's impact, but it cannot describe the actual processes that take place to produce that impact. Process documentation can provide implementors detailed information on those new processes by focusing on the "how" and "why" of the development project. Therefore, it has a specific utilitarian value for implementors. If properly conducted, it provides a detailed description of how a development program has been implemented.
- A process documenter can gain a deep, complete and detailed understanding of an irrigation system. Intensive (versus extensive) research in process documentation can produce rich qualitative information about the system's strengths and weaknesses.
- The process documenter studies an irrigation system in its natural setting; there is nothing artificial about the study or the results. Process documentation puts the researcher and the implementing agency in close touch with the irrigation system and increases the understanding of irrigation activities. The documenter does not merely ask farmers and officials about their irrigation behavior; s/he actually observes the behavior. Because the field data are so closely tied to the observations, the internal validity (are we measuring

what we really want to measure?) of process documentation can be very high. The accuracy of the data can be increased if observations were used instead of speculations.

- The irrigation system's natural setting and unique social environment should not be a stumbling block to understanding the system. With other analytical techniques, the social setting of an irrigation system may not be understood sufficiently to make conclusions about people's actions. But with process documentation, the social context is the door to intensive research.
- The documenter can check the accuracy of people's statements. S/he can observe what has happened and compare it with what people say and what actually happened. For example, if many irrigators claim that their irrigation system is plagued by extremely poor maintenance, the documenter can observe if that is true. One can then determine if people's actions correspond to these spoken descriptions.
- The researcher can discover important implementation issues and variables that were not known at the beginning of the project. Process documentation gives the researcher the chance to discover what irrigation behaviors are important, and what are not.
- The documenter gets the opportunity to know people so that s/he can freely discuss sensitive issues with them. If a conflict or family feud is affecting the irrigation system, that is a complicated and sensitive subject and process documentation is a good method for studying those conflicts.

#### **Disadvantages or Difficulties of Process Documentation Research**

- The documenter does not know whether the results are representative of irrigation systems in other parts of the region, the country or the world. Because s/he can only view the system from his or her own perspective, and cannot be everywhere at the same time, the documenter runs the risk of his or her results not being



accurately repeated. Since the research in process documentation is intensive, a very good description of an irrigation system can be obtained, but only of one particular irrigation system. This means that the external validity (ability to generalize other systems) of process documentation may not be adequate since there is no random sampling, the "sample" is small (only one irrigation system) and the observations within the system can be biased.

- It is probable that the process documenter affects the irrigation system simply by living in it and observing it. There is no way he could possibly know if the people in the system would act differently if s/he were not present. His or her mere presence could have disturbed the normal character of the irrigation system and people may not have acted the way they normally do. Observer influence on the irrigation system is a prime source of bias and unreliable data.
- The way people act in an irrigation system may not present a true picture of what is important in the system. Society may force people to behave in a certain way, even though behavior may not correspond to people's true attitudes and feelings. A group of farmers may cooperate with one another once a year to clean a field channel, but they may dislike each other intensely because they belong to different ethnic groups. Process documentation is not a good technique for studying people whose feelings and actions are severely affected by the society. Moreover, since the process documenter must define his or her role in some specific way, it is likely that s/he will not be able to penetrate or understand some parts of the social environment.
- The relationship between the process documenter and the project staff can lead to misunderstandings. Although process documentation is not meant to evaluate agency personnel, some people could mistakenly think of the researchers as "spies." If such an attitude exists, process documentation could be rendered useless. It is, therefore, all the more essential that process documentation must never be used to evaluate staff performance and no sanctions should be invoked due to process documentation reports.

- Process documentation can easily become too unsystematic—composed only of the documenter's impressions and anecdotes. An extremely unsystematic process documentation does not give precise descriptive accounts of large populations, and any conclusion drawn can only suggest explanations.
- The process documenters may have a tendency to collect too much data. This could result in massive monthly reports, 50 pages or more, that no one has the time or the interest to read. The burden is on the process documenter trainers to stress the importance of concise, monthly reports that agency personnel will read. Organizing the reports under irrigation topics, rather than a straight narrative report will assist the reader.
- Since the observations are only from the perspective of the documenter, all the observations are filtered through his or her eyes and mind. The biases each researcher takes into the field can influence interpretations of the data observed. In addition, the documenter could become too deeply involved so that his or her ability to be objective is affected.
- Although a degree in the social sciences is not a prerequisite, the process documenter should truly be a "social scientist," in the best sense of that term, and not simply a casual observer and documenter of human behavior. Without comprehensive and extensive training, it could be difficult to employ agency personnel as process documenters.
- Process documentation can be both time- and energy-consuming, and very expensive. It takes time and patience. By its very nature, it is not possible to undertake it in one or two months and this adds to the cost. Agency personnel should be prepared for the time and money involved.
- Simply "doing" process documentation will not necessarily help an irrigation agency, especially if its staff is not receptive to the study. There must be audiences within the agency who have the skills,

interest, and authority to put it to good use. To ensure that process documentation is not simply an exercise in futility, the researcher and agency personnel must make sure that people in the agency are prepared to act on the initial observations.

## **FIOP AND PROCESS DOCUMENTATION RESEARCH**

When the NIA staff began discussing FIOP, they planned a specific process documentation research component. However, fearing potential bias if NIA conducted its own research, the agency asked IIMI to implement the overall research program.

NIA first selected three FIOP irrigation systems each one of which is located in the three major geographical regions of the Philippines—Luzon, Visayas, and Mindanao. These three systems would be the process documentation study sites and within each system, NIA then selected irrigated areas to be organized into Irrigators' Associations.

Later with NIA's concurrence, IIMI then contracted three Philippine universities (the Ateneo de Naga University, the Central Philippines University, the Xavier University) in these regions to conduct the process documentation research. Although two of the three universities had previous process documentation experience, IIMI hired the Institute of Philippine Culture (IPC) at the Ateneo de Manila University to train the process documentation teams. IPC was one of the original implementors of process documentation in the 1970s.

After training, four process documentation teams (a large irrigation system in the Visayas used two teams) were stationed in the three irrigation systems, focusing on four areas to be organized into Irrigators' Associations. The researchers lived in these sites for an entire year, from August 1989 to July 1990.

During the period, the process documentation teams coordinated their activities and findings with NIA authorities which took place at three levels as given below.

### **At the Irrigation System Level**

The research team first initiated a review session process with the NIA's system personnel including the Irrigation Superintendent. This session aimed to validate the monthly draft reports and assure field personnel that they were accurate. This review session was instrumental in (a) creating awareness among office personnel (especially the Irrigation Superintendent) about FIOP implementation problems and issues; (b) helping office personnel formulate strategies and procedures to solve problems and improve FIOP; and (c) enhancing a harmonious relationship between NIA systems office personnel and the research team.

### **At the NIA Regional Office Level**

The research team also facilitated the creation of a working committee. Following the system-level review sessions, the regional core group composed of the Regional Irrigation Manager, Chief of Operation and Maintenance, Chief of the Institutional Development Division and representation of the PDR team, IIMI and NIA Central Office met to discuss monthly PDR results and findings. Discussions focus usually on FIOP implementation and field-related problems which were not solved during the meetings at the system level. The regional core group also used the PDR as a tool in developing and formulating policies and guidelines to further improve the FIOP implementation.

### **At the NIA Central Office Level**

Monthly PDR reports were discussed at the Research Advisory Committee meeting;<sup>10</sup> small committee meetings were composed of IIMI, IPC and USAID advisers to address key issues arising at the field level in the FIOP implementation such as its organizing process and management.

The FIOP process documentation research was affected by three unique circumstances. First, although FIOP began in January 1989, bureaucratic

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<sup>10</sup> At the initial stage, a small committee with members from IIMI, IPC and USAID addressed key issues in FIOP implementation such as the program organizing process and management.

delays forced the postponement of the start of process documentation to August 1989, a lapse of seven months. The researchers, therefore, were unable to actually observe and document the first seven months of FIOP. Instead, they had to conduct a "retrospective process analysis" and rely on interviews of farmers and NIA officials to reconstruct the crucial early phases of FIOP.

Second, despite the process documentation training, the first two or three months of process documentation reports were mere diaries or chronologies of events. Although useful, these reports were too lengthy and impractical for busy project implementors. Moreover, the reports focused almost exclusively on FIOP's organizing process and institutional aspects and failed to describe the relationship between FIOP and irrigation activities. While the monthly process documentation reports gradually changed in length and content, it was not until the sixth or seventh month that NIA, IIMI, the universities and the researchers firmly established the three major topics that each report should cover:

- the FIOP organizing process
- field-level management of FIOP by NIA
- impact of FIOPs on systems O&M

Following this development, succeeding process documentation reports became consistently shorter and more relevant than the first few months' reports.

Third, the FIOP process documentation differed significantly from the original process documentation research that NIA used in the 1970s. In the earlier research, NIA was implementing new processes and strategies in only one or two pilot irrigation systems in the Philippines. Thus, NIA could use the process documentation findings to make relatively easy program adjustments in the one or two pilot systems.

Under the FIOP, NIA was simultaneously implementing new processes and strategies in scores of irrigation systems throughout the Philippines. It was, therefore, difficult to enact immediate program changes in a large number of systems.

In the earlier process documentation, the research was used not as an experimental test, but as a true learning laboratory. Because NIA

implemented FIOP in a number of systems simultaneously, the process documentation research was more of a pragmatic management and implementation tool than a learning laboratory.

## VALIDATION PROCESS

Process Documentation Research (PDR) is a qualitative research method using trained people to observe and question but not to interfere.

As discussed earlier in previous pages, Process Documentation Research has its limitations. Moreover, the number of process documentation sites in FIOP was very small—only 4 sites in 3 selected irrigation systems—while the program covered more than 50 systems nationwide. Because of this, it was very difficult to generalize PDR findings.

To overcome these limitations, a *validation process* was formulated. The methodologies included: 1) a series of validation workshops in the three process documentation regions involving a cross section of FIOP participants from PDR, non-PDR and non-FIOP systems; 2) a questionnaire survey involving non-process documentation regions; and 3) a review of available records.

### Validation Workshops

Because irrigation research activities of the Accelerated Agricultural Production Program (AAPP) were confined to only three regions, first there was a need to check whether the findings in the three PDR-covered national irrigation systems were similar to the experiences in systems not covered by the research in the three regions. For instance, NIA wanted to know if there were differences between planned activities of FIOP implementation and actual activities that took place in the field. Hence, in October 1990, several validation workshops were conducted in the three regions covered by the AAPP where the 12 monthly reports were consolidated and presented for validation.

The objectives of the validation workshops were: (1) to find out whether the PDR findings were applicable to non-PDR areas; (2) to know the status of FIOP implementation on both PDR and non-PDR areas and systems; (3)

to identify issues and problems, strong as well as weak aspects, of the FIOP emerging from PDR and non-PDR areas and systems; and (4) to come up with plans for PDR and non-PDR areas. Besides the objectives, the workshops also provided the opportunity for the FIOs and NIA field staff to interact with senior officials of the NIA Central Office.

A minimum of two participants from a cross section of IA members, Farmer Irrigators' Organizers (FIOs), Turnout Service Area Leaders (TSAL), Institutional Development Officers (IDOs), Farmer Irrigators' Organizing Supervisors (FIOS) and Irrigation Superintendents (IS) were selected from systems in both PDR and non-PDR areas. NIA Regional as well as Central Office staff and those concerned in the regional universities undertaking the Process Documentation Research were also invited.

After conducting the series of validation workshops, IIMI and the Research Advisory Committee (RAC) decided to conduct a questionnaire survey to further validate the PDR as well as the validation workshop findings. This was deemed necessary since the FIOP was a nationwide activity covering 12 regions.

### **Validation Questionnaire Survey**

It is difficult to conduct validation workshops on a nationwide basis since it is costly and time-consuming. Moreover, despite the merits of the workshop method of validation, it has some weaknesses as well. For example, lower-level officials of NIA may not feel free to critically evaluate the role of higher-level officials in a workshop situation. Because of these, and especially because it has been determined to cover a wider area, it was decided to conduct a questionnaire survey. To optimize the use of available resources, the survey was conducted in a random sample of five non-AAPP regions including the Upper Pampanga River Integrated Irrigation System (UPRIIS) not covered by PDR, and from the five regions, five systems were randomly selected. Systematic sampling was done to select target groups or respondents from the selected systems.

In the selection of the five national irrigation systems, it was subjected to the criteria set by the researchers such that 1) the systems should not be from the AAPP regions, 2) the systems should have been implementing NIA's FIOP since 1989, and 3) the systems must have an Irrigators' Association undertaking the operation and maintenance or having a Type III contract

with NIA. The national irrigation systems drawn as samples were the following: 1) Lower Agno RIS, Pangasinan, Region I ; 2) Zone 2, District IV, UPRIIS, Nueva Ecija, Region III; 3) BSTG-MP, Tacloban City, Region VII; 4) Labangan RIS, Zamboanga, Region IX; and 5) Banga RIS, South Cotabato, Region XI.

Different questionnaires were prepared for different categories of FIOP actors or participants such as the IA members, Turnout Service Area Leaders (TSALs), IA Leaders, Farmer Irrigators' Organizers, Institutional Development Officers, Farmer Irrigators' Organizing Supervisors (FIOS), the Irrigation Superintendents and the Regional Institutional Development Division staff. The subjects for validation were derived from the findings of the process documentation research (PDR) and validation workshop findings. Therefore, the questionnaires used were prepared based on the findings from process documentation research (PDR) and validation workshops. Eight sets of questionnaires were prepared for the different categories of FIOP actors/or implementors for the staff of both the National Irrigation Administration and the Irrigators' Association. Four sets were prepared for the Regional Institutional Development Division staff (RIDDD) and for the irrigation systems' office staff such as the Irrigation Superintendent, Institutional Development Officer and Farmers Irrigators' Organizing Supervisor or Watermaster. The other four sets were prepared for the IA members, TSALs, Irrigators' Association leaders (IA leaders), and Farmer Irrigators' Organizers (FIOs).

Both primary and secondary data were collected for this study. Secondary data were acquired from the NIA offices and personnel while primary data were gathered through a structured questionnaire administered in the selected irrigation systems.

The questionnaire consisted of five main parts: 1) FIOP organizing process, 2) operations and maintenance, 3) FIOP's relationship to O&M, 4) FIOP management, and 5) the "personal profile." The different parts of the questionnaire represent the different organizing phases and activities of FIOP.

In Part I of the questionnaire which is the FIOP organizing process, the following questions were emphasized: a) Who did the activity?; b) How was the activity conducted?; c) When and for how long was the activity conducted?; d) What are the problems and issues in conducting the activity? and e) What are the suggested recommendations on the problems and issues raised?



Questions in Part II focused on the different O&M-related activities: (a) water distribution; (b) system maintenance; (c) ISF collection; (d) minor repair; (e) NIA-IA meetings, and (f) IA training programs conducted by NIA. As in the first part of the questionnaire, the questions were structured by asking the four W questions and how the activities were conducted and by identifying the problems and issues encountered in conducting the different activities in O&M.

In Part III which dealt with the FIOP's relationship to O&M, the questions were structured to learn the impact of FIOP on the IAs and on the implementation of different O&M-related activities as previously mentioned. The questions focused on the changes and improvements of FIOP and the IAs as well as on O&M such that the following became clear: (a) Has FIOP improved the water distribution, ISF collection and system maintenance? (b) Did IA training programs bring about some significant changes and improvements in the associations' leadership style and to the IAs as a whole? (c) Did minor repairs improve water distribution and how many farmers participated in the minor repairs? and (d) Did FIOP improve the attendance at NIA-IA meetings?

In Part IV of the questionnaire, which is about the FIOP management, the questions were about the organizational, administrative and financial aspects of FIOP implementation. Some of the questions raised were as follows: (a) Who undertook the management of FIOP implementation from the NIA central office to field offices? (b) Whom did the FIO supervise? (c) Who conducted the different training programs? When were the training activities conducted? What type of training was conducted and how was it conducted? and (d) Did the delay in release of funds for minor repairs affect FIOP implementation?

The final part (Part V), dealt with the personal profile of the respondents. This covered the socioeconomic statuses of the respondents.

The questionnaire was administered by trained interviewers from respective irrigation systems using the respondents' own dialect. The interviewers were graduates of social science, agriculture or other related courses with skills in interviewing. The number of interviewers hired depended on the number of respondents in the particular system.

Questionnaires for both the NIA and IA respondents were pretested in the BUSPAN River Irrigation System in Bulacan. The questionnaire survey lasted three months and covered five national irrigation systems (NIS) selected through systematic random sampling. Proponents of this study

requested from the NIA regional office the list of IA members, TSA leaders, IA leaders and FIOs of the national irrigation system selected. Through systematic random sampling, farmer respondents of different categories were selected and their list was sent back to the respective NIA regional offices to request their attendance in a scheduled interview.

Gathering of data was first made at the Upper Pampanga River Integrated Irrigation System (UPRIIS) in Nueva Ecija. Through the help of NIA personnel, three groups were organized and distributed to the different hydrological boundaries of the irrigation system: upstream, midstream and downstream. Before each group diverged to their assigned place, questionnaires for NIA personnel were left for them to acknowledge.

The same procedure was also followed at Lower Agno, BSTG-MP, Banga and Labangan River Irrigation Systems.

Data collected were analyzed through the use of simple descriptive statistics, mainly: frequency counts, ranking and percentages. These results were easily communicated to non-researchers.

### **FARMER IRRIGATORS' ORGANIZATION PROGRAM (FIOP)**

In 1980, NIA piloted the Irrigation Community Organization Program (ICOP) in large National Irrigation Systems (NIS). The ICOP concept was similar to the participatory approach applied in the Communal Irrigation Systems (CIS). However, circumstances in NIS differ from those in CIS because those in the first category are beset with problems of high O&M costs and low irrigation service fee (ISF) collection rates. Despite these problems, however, ICOP pilot projects yielded significant results, including: (a) organization of cohesive IAs capable of system maintenance; (b) reduced O&M cost through reduction of personnel; (c) farmers' partial or full management of the irrigation system; (d) equitable water distribution; and (e) effective resolution of internal conflicts.

With these positive results, the program was expanded nationwide but first mostly to "marginal" systems. Since then, this program has been adopted and has become part of NIA's program in implementing all national (large) irrigation system projects (ICOP Status Report 1983).

During ICOP, NIA was able to test a new approach in organizing water users associations—the FIOP. At present, this is the basic strategy being

used by NIA in organizing water users in all NIS. The FIOP can be considered an innovation in NIA's organizing efforts because it differs from traditional approaches which used nonfarmers as organizers. FIOP used farmers as organizers and this approach was adopted by NIA on the following assumptions:

- Cost reduction in organizing could be achieved without sacrificing project effectiveness.
- The use of farmers as organizers directly develops the organizing capabilities among members of the irrigation community.
- Selecting farmer organizers who are trusted and respected by the majority of farmers in the irrigation community has advantages over using external organizers because organizing, contact building and leader identification are easier due to their knowledge of and experience with the local irrigation community.
- The project hastens development of farmers' self-reliance in organizational activities due to increased level of local organizing manpower and a much-reduced deployment area.
- FIOP also upholds the NIA's participatory approach to irrigation development (FIOP Project Proposal 1983).

In July 1987, NIA's previous institutional effort to expand FIOP was continued with the USAID-supported Accelerated Agricultural Production Program (AAPP) and the World Bank-assisted IOSP. This program was intended not only to increase the adequacy and reliability of water delivery to the farm level but also to promote organizing efforts through the use of farmers as organizers (Ehera and Laitos 1988).

### **AAPP-FIOP Strategy and Objectives**

AAPP's overall program strategy was to build a core of sustainable and stable irrigation systems, to generate income and to support IAs on a continuing

basis. With this core set of viable systems, the irrigation agency (NIA) would have the capability to move those systems to higher levels of efficiency, increased productivity and financial sustainability.

Specifically, the objectives of the program in the large irrigation systems included the following: (a) organize IAs through the use of farmers as organizers; (b) support farmer organizers by making minor repairs of irrigation facilities as the entry point for irrigation organizing work; (c) strengthen the capacity of local irrigation organizations in planning, repairing, operating and maintaining their irrigation systems; and (d) enhance NIA's capacity to support IAs in carrying out their O&M responsibilities.

### ***Key Features of FIOP***

FIOP has four key features:

- Local farmers are identified, selected, trained and employed as farmer organizers who become an indigenous force in the irrigation organization.
- The farmer organizer will organize his fellow farmers within a unit/division in an irrigation community to simplify the relations between the irrigation agency and FIO in managing irrigation water.
- The professional organizer will assist farmer organizers in institutional and water management tasks.
- The farmer organizer and the irrigation organizations will actively participate in any decision making and in long-term systems O&M.

### **FINDINGS OF THE THREE RESEARCH METHODOLOGIES ON THE ORGANIZING PROCESS AND MANAGEMENT OF THE FIOP**

The three research methodologies: a) process documentation research; b) validation workshops; and c) validation questionnaire surveys were used to

examine the organizing process and management of FIOP implemented by NIA nationwide. These methodologies have their own limitations. But it was found out, however, that the three are complementary to one another.

The first, which is Process Documentation Research (PDR), with its review mechanisms of monthly reports at irrigation system, regional and central office levels, disclosed an in-depth process of FIOP in a continuous fashion. However, due to the very small sample size, IIMI researchers were not quite certain as to what extent the PDR findings would be applicable to the vast areas covered by the FIOP outside the PDR sites. Hence, the researchers designed a validation process to address the validity of PDR findings in areas it did not cover, and based on this validation, to explore to what extent one could *generalize* recommendations. This was important since FIOP cover all the regions of the country and NIA was looking for a *review* of the program covering all the areas where it was implemented.

Consequently, three validation workshops were conducted in the three regions covered by AAPP, involving representatives from PDR as well as from non-PDR areas. Finally, questionnaire surveys were carried out in five other regions. In contrast to the PDR, which focused on observing human behavior, the workshops and questionnaire surveys depended on the expressions and perceptions of the respondents. However, the area covered and the number of respondents were much higher than those of the PDR. Despite this fact, it was found that most of the findings from the different methodologies were more or less the same.

Based on the results of the three research methods employed, it can be concluded that the methods are complementary to one another. The PDR has been conducted over a period of one year and provided an in-depth understanding of the FIOP process on-site. The PDR proved to be beneficial as a mechanism for obtaining continuous feedback. The NIA, IIMI and university researchers worked as a team in reviewing PDR findings at monthly meetings held at the regional level. Prior to these meetings, the "issues" contained in the reports were discussed with NIA officials at the irrigation system level.

The workshops and the questionnaire survey, on the other hand, were useful in "validating" the PDR findings. Because of the large sample size and the area covered, the analyst could get a better picture of the FIOP country-wide. The issues validated through workshops and questionnaire surveys originated from the PDR. Thus, the validation process was "guided" by the

PDR results and was confined to the key issues which emerged from the PDR activity. Hence, the validation was a quick process.

### **Synthesis of Findings: FIOP Organizing Process**

#### ***Pre-Organization Phase***

During the pre-deployment training of FIOs, a few of them were frequently absent and they sent proxies.

It was found out that the average area covered by FIO is 175 ha, with an average of three turnout service areas (TSAs) per FIO.

#### ***TSA Organization***

It was revealed that during the core group and committee formation, attendance was moderate with an average of 46.5 percent of the total membership per IA. The study showed that in some areas inadequate attendance was also a problem in the formation of TSA groups. The procedure used to form turnout service area groups (TSAGs) was through mere hand-raising.

#### ***IA Organization and Registration***

In the IA organization and registration, inadequate attendance, lack of farmers' knowledge in drafting the bylaws and Articles of Incorporation and insufficient time given to accomplish the drafting and revision of these documents were evident.

The IA formation was not realized as early as desired due to delayed activities previous to this particular activity and as a result, registration of the IA with the Securities and Exchange Commission (SEC) was also delayed.

#### ***NIA-IA Contract Formalization***

As of August 1990, most of the irrigation associations covered by the study had not yet entered into an O&M contract with NIA due to delayed SEC

registration. However, the IAs were involved in ISF collection and maintenance activities even without the O&M contract with NIA.

### ***O&M and Water Distribution***

The study revealed that the basic problem confronting the farmers is the insufficiency of water supply for irrigation and this has caused inequitable water distribution in the NIS covered by the study. Inasmuch as they are encountering insufficient water supply, farmers follow *rotational* water distribution. To carry this out, some IAs created monitoring teams. These teams implement the water distribution plan and cropping calendar.

Maintenance activities were undertaken by the farmers in certain areas even without O&M contracts. This is through voluntary group work.

The minor repair works planned as a major component of AAPP were not implemented in time due to bureaucratic red tape which caused delay in the release of funds. Maintenance activities were undertaken by the farmers even without O&M contracts. This is being done through group work without any compensation.

Even without Type II contract the IAs covered by the study were involved in ISF collection.

In systems covered by the study, the IAs collect irrigation service fee (ISF) either in cash or in *palay* (unhusked rice). All the sample systems showed they have low ISF collections mainly because of: (a) delinquent payers, and (b) unsatisfactory services by NIA. In spite of this, the study showed that in some areas in Regions V and X farmers have helped NIA in ISF collection even without signing a contract. NIA and the IAs have created collection teams in order to increase ISF collection and FIOs assisted the irrigation agency in ISF collection campaigns.

From all three sources of research findings, it was found that throughout the implementation of various activities under the FIOP organizing process, several postponements of meetings were reported which caused undue delays in organizing activities, e.g., core group and committee formation, TSA formation, etc.

In conducting the job enrichment training (JET), Basic Leaders' Development Course (BLDC), Irrigators' Association Leadership Installation Course (IALIC) and Financial Management System Training (FMST) poor attendance of farmers was reported and some of them were sending proxies. BLDC/IALIC training programs were found to be fora for the finalization of

the constitution, bylaws and Articles of Incorporation, TSA consolidation and IA formation. However, as of July 1990, the System Management Workshop/Training had not yet been conducted in both process documentation and non-process documentation areas. But in some systems covered by the validation questionnaire survey, SMW/T had been already conducted.

FIO supervision was assigned to the Water Resource Facilities Technicians (WRFT). However, in the actual exercise of roles/functions, it was found that the IDO's role in institutional aspects (specifically in the supervision of FIOs) was more visible than that of the FIOS (WRFT). This is in conformity with the findings of the survey conducted by Laitos (1990) based on interviews with eighteen Irrigation Superintendents.

## LESSONS

Just as in any other endeavor, some circumstances occurred in the process of the FIOP implementation that served as learning points for project implementors. The following are some of the valuable items of information revealed by the PDR and the validation process.

- The collateral interview, (the interview with other farmers within the area) and the involvement of other farmers in the FIO selection process proved to be a laudable effort in determining potential FIOs.
- Inadequate time allotted to FIO selection barred the NIA field personnel from considering more qualified FIO candidates.
- There is a need for some flexibility in the selection process and consultation with the farmers in the area.
- The training conducted consisted of topics that were beyond the ordinary way of doing things.



**Establishment of TSA**

The substance of the program was laying the foundation for an IA through farmers' involvement. The basic unit of the association was the turnout service area (TSA) which served as the center of the organizing activities. In establishing this TSA, the farmers were involved in the planning and decision making of activities pertinent to their area. It is the responsibility of the Farmer Irrigators' Organizers to organize the farmers into TSA groups to facilitate the implementation and monitoring of FIOP activities. With the assistance of the FIO supervisor and the irrigators' organization workers, the FIOs started on their groundworking. These groundworking activities involved the following concerns:

- attendance at TSA meetings
- introduction of FIOP
- identification of potential leaders to form the core group

The farmer irrigators' organizers had to undertake a number of activities relevant to the TSA organization which included community integration, social investigation and core group formation. And during the groundworking, there were several observations, some of which are listed below:

- Enhanced groundworking activities answered most of the farmers' queries on the details of FIOP.
- Despite intense efforts of FIOs in convincing the farmers to attend TSA meetings, only a low percentage of farmers showed up.
- Acquisition of knowledge on FIOP was a way by which the FIOs could respond readily to farmers' queries and this helped them gain more self-confidence.
- Active involvement of NIA in interacting with farmers and monitoring IA activities.

- The system-level NIA office provides an environment for the TSA to develop.
- For an effective IA to develop, the TSA leaders need to have sufficient time for FIOP.
- The type of farmers selected to be organizers was one of the important factors for an effective process of organizing.
- With the introduction of the FIOP, the value of cooperativeness or *bayanihan* spirit was renewed in the farming community.

### **IA as a Legal Entity and NIA-IA Contracting**

A very important incentive that an IA could avail of under NIA's participatory approach in general and under the FIOP in particular, was the opportunity for it to undertake negotiations about O&M with NIA. The farmers register their association with the Securities and Exchange Commission so that it would have a legal status. Subsequently, the IA enters into a contract with NIA, under either a Type I, II or III. This contract serves as evidence of the association regarding the type of services that NIA offers them. The IA registration with SEC took quite a long time, thus affecting other IA activities (such as the implementation of minor repairs). There should be a clear and concise IA-SEC registration process with the SEC office, and NIA Central Office, Regional Office and Irrigation Systems Office. The easiest and fastest way of sending an application and follow-up procedure on the SEC registration process should have been identified.

### **Operation and Maintenance**

The program does not deal only with the institutional aspect of the IA but also with the O&M of the irrigation system. The FIOP provided a forum also for the farmers to help ventilate their negative reactions towards NIA. With the farmers' organization, a communication line was shortened, resulting in a more effective exchange of ideas. When problems arise within the TSA, the farmers would just approach the farmer irrigators' organizers

for assistance who, in turn, would relay the problems to NIA's institutional workers. The experiences in the study areas revealed the following important points, among others:

- In some cases, the farmers mentioned NIA's inefficient services or irrigation problems as an excuse for not joining the association. It showed that there were some farmers who did not understand their responsibilities in the maintenance of the irrigation facilities vis-a-vis NIA's job.
- Problems or conflicts arising from the operation of the irrigation system were lessened with the open communication between the system office and the farmers. The participation of farmers in the operation of the irrigation systems made them more responsive to the existing problems which were easily communicated to the NIA personnel.
- Closer coordination of the system office and the IA during the implementation resulted in increased farmers' participation. The constant presence of NIA in the operation of the system encouraged farmers to join the IA, particularly during the implementation of minor repairs. This proved that once farmers saw that the agency was doing its share of work, they, too, would undertake their responsibilities.
- Farmers' participation is encouraged through the provision of incentives (particularly during good/increased status of ISF collection), efficient water delivery and strong organizational development. These factors induced farmers to actively participate in the FIOP activities since they came to know of the consequences of active participation.
- Farmers, especially the leaders, should be given more training in the technical aspects of the systems operation, their maintenance and effective irrigation practices. They should be educated on the proper use of the irrigation facilities. In this manner, many of the O&M tasks could be undertaken effectively by the farmers who are directly benefited by the system, minimizing the burden of NIA

and addressing the issue of participatory approach. Farmers would be greatly involved in the water delivery system and could also act on problems immediately.

### ***FIOP Management***

At the irrigation system level, the planning, implementation, supervision, monitoring and evaluation of the FIOP fall under the jurisdiction of the System Project Implementation Unit led by the Irrigation Superintendent. The office monitors the day-to-day implementation of FIOP activities and conducts monthly supervision meetings as well as field visits to oversee project implementation. The NIA Regional Office needs to take on a more active role in the programs implementation in order to gather relevant feedback on the impact of the FIOP rather than limiting its role to only overall supervision. The common constraint experienced by projects such as the Accelerated Agricultural Production Project and the Farmer Irrigator's Organization Program was the fact that they are subject to delays in the bureaucracy (such as delays in the release of funds for operations). Consequently, implementation was adversely affected since the project could not function without funds for support activities. For instance, the delay in the implementation of minor repairs in the TSAs showed that the FIOP was bound by procedural difficulties. Some of these are beyond the control of NIA. And, in general, the program worked to enhance the good relationship between NIA and IA.

The FIOP has been implemented by NIA under the irrigation component of the USAID-financed Agricultural Production Project (AAPP). The AAPP was completed at the end of 1991. Hence, the expansion and internalization of the FIO process and its sustainability are the challenges faced by the Institutional Development Program (IDP) of NIA at present.

## CHAPTER 8

### Summary and Lessons Learned

AGRICULTURAL DEVELOPMENT in the Philippines has been most evident in the recent past. For the period covering the last 25 years (1968-1993), a growth rate of 25 percent was observed in rice production. The Philippines is one of the most progressive Asian countries in implementing innovations in irrigation management. In both government-managed and farmer-managed systems, the Philippine experience offers important lessons to other countries planning to implement similar innovations. For instance, involvement of farmers in all facets of irrigation development has been an integral component of the National Irrigation Administration's (NIA) management approach. It has been recognized, however, that there is still considerable room for improvement in the overall performance of irrigation systems. Hence, NIA has assumed an active role in management improvement of existing systems. In the Philippines, unlike in many other Asian countries, there is still tremendous potential for increasing the area under irrigation. Unlike in the past, however, new constructions would involve heavy investment costs.

The involvement of the IAs in the management of irrigation systems in the Philippines started in the 1970s when NIA was confronted with the problem of inadequate funding to support and sustain efficient operation.

In response to this challenge, in the late 1970s NIA launched its Institutional Development Program (or the participatory approach) which was aimed at the formation, development and sustenance of functional, cohesive and viable IAs capable of managing either partially or fully the O&M of irrigation systems.

Under NIA's Communal Irrigation Development Program, the agency constructs irrigation systems with the active participation of the farmer beneficiaries and upon completion of this phase, the systems are turned over to IAs, subject to a cost-recovery arrangement. With the successful

experience in the communal (small) systems, NIA applied the participatory management strategy to large-scale national irrigation systems as well.

With NIA's efforts toward institutional development and turnover of irrigation systems, donor-assisted irrigation projects in the recent past have included the development of IAs and irrigation management transfer as major components in project implementation.

The Accelerated Agricultural Production Program (AAPP) in the Philippines was formulated in 1987 by the United States Agency for International Development (USAID), the Department of Agriculture of the Philippines (DA) and the National Irrigation Administration (NIA), the major purpose of which was to increase the profitability and productivity of agricultural production.

Under the AAPP, NIA was tasked to implement the irrigation component of the program. This component was started by the agency in January 1987 to support the national government's mission on agricultural development. The grant-in-aid project funded by USAID, covered 30 national irrigation systems with a total service area of 92,952 ha and 473 communal irrigation systems with a total service area of 54,756 ha. Only three regions in the country were covered by the project. These are: Region V (Bicol), Region VI (Western Visayas) and Region X (Central Mindanao).

Under research, a cooperative agreement was reached between NIA, IIMI and USAID. The agreement required IIMI to provide principal technical assistance to NIA for special studies and for the research element of the irrigation component of the AAPP. It also aimed to strengthen NIA's capacity to *conduct and manage research* carried out through subcontracts with research institutions, and to *interpret and use* research results.

Specifically, the research component of the AAPP was designed:

- to evaluate, refine and improve NIA's present package of *management innovations*
- to identify, develop, field-test and evaluate new management innovations to strengthen (a) IAs, (b) NIA's ability to work with IAs, and (c) NIA's ability to improve and sustain the performance of irrigation systems cost-effectively
- in support of the first two, to assist NIA to strengthen its capacity to conduct and manage applied research and special studies

The agreement between the agencies facilitated a diagnostic research during 1989-1991. This was conducted in collaboration with nine universities in the three AAPP regions with adequate exposure on irrigation management research. These are: in Region V - Bicol University (BU), Ateneo de Naga University, Camarines Sur State Agricultural College (CSSAC); in Region VI - University of the Philippines in the Visayas (UPV), West Visayas State University (WVSU), Central Philippine University (CPU), Panay State Polytechnic College (PSPC), and in Region 10 - Central Mindanao University (CMU), and the Xavier University (XU).

The themes of the researches made were the following:

- performance of irrigation systems with special reference to IAs
- management of Provincial Irrigation Offices (PIOs)
- impact of training conducted by NIA
- design and management interactions
- Farmer Irrigators' Organizer Program
- irrigation service fee collection

The studies conducted were regarded as Phase I of the research activities of the concerned agencies under the Accelerated Agricultural Production Project. Based on the findings and recommendations of these studies, it was found that the performance of the IAs in terms of participation in activities expected by the IAs is very much limited to some; it does not cover most of the activities. This was brought about by the fact that only a few members were committed to the organization.

Through a series of planning workshops and meetings held at both the national and regional levels action plans were developed jointly by the NIA, IIMI and the universities or collaborating research institutions to improve and strengthen IAs.

Proposals for intervention chosen were those which could be applied and tested in a short period of time. The following were the interventions made by the respective universities in collaboration with IIMI and NIA.

### **The Bicol University**

The general objective of the action research was to pilot-test strategies that would assist in improving and sustaining the performance of IAs as well as the irrigation systems. Specifically, the objective was to increase IA participation in irrigation-related activities, to enhance NIA's responsiveness to institutional requirements, and to improve IA managerial and water management skills through training of farmers by farmers.

The experimental sites which were chosen by the IA leaders were: BRISDAFIA (Barit River Irrigation System Division A Farmer Irrigators' Association) and LAPSEFIA (La Purisima, Sta Eulalia Farmer Irrigators' Association). Control groups were also chosen to thoroughly identify the impact or effect of the intervention program on the performance of the IA and the NIS. These are LAYMANSFIA and BULRISCOFIA.

The intervention program in this particular region consisted of the following activities: small group formation, value clarification training, self-assessment of the performance of the farmer-leaders, distribution of the IEC materials and mobilization of O&M personnel in institutional work.

1. ***Small Group Formation.*** As part of the intervention program, the organization structure of the IA was modified and smaller groups were organized below the TSA level based on water and task distribution.
2. ***Value Clarification Training (VCT).*** The objective of this type of intervention was to provide the farmers with the necessary information to enhance and eventually develop farmers' cooperation in the program. This was based on the findings that farmer's knowledge and awareness regarding the IA were very much limited.
3. ***Self-Assessment of the Performance of the Farmer Leaders.*** The performance of the farmer leaders was assessed through the value clarification training and a self-assessment questionnaire was given to the leaders. Assessment was done in the following categories: water management, maintenance, crop management, planning, financial aspects and benefits.



4. ***Distribution of IEC Materials.*** Information, education and communication materials in the form of comics magazines using the Bicol dialect were distributed. These materials contained stories and information that feature values from IA members and water users which they hope will be learnt by the farmers.
5. ***Mobilization of O&M Personnel in Institutional Work.*** The Water Resource Facilitator Technician (WRFT) and the Ditchtenders (DTs) served as the direct links between the NIA and the IAs. Hence, there is a need to provide these agency personnel with the necessary knowledge and realization of the need to strengthen the bond between the NIA and the association.

After the implementation and from the outcome of the statistical analysis, the intervention made brought essential modifications in the management of water, planning of organizational activities, agricultural development and financial aspects. These modifications were also evident in linkage and maintenance activities although in a less-significant manner.

### **The University of the Philippines in the Visayas**

In the first phase of the intervention research of the Accelerated Agricultural Production Program (AAPP), the University of the Philippines in the Visayas evaluated the performance of the NIA's Provincial Irrigation Office (PIO) services to the communal irrigation systems in Western Visayas. In this study, it was found that communication between the IA members and officials was limited. Specifically, it was found out that "dialogues between them on matters concerning IA activities were possible only during monthly/annual meetings. In some cases, meetings were held when there was a perceived need to hold one." Lack of information about the IA activities resulted in misunderstandings which would eventually lead to negative attitudes between and among IA officials and members. It was also found that the attendance of farmers during trainings conducted by the NIA during the period covering 1985 - 1989 was not satisfactory.

The University of the Philippines in the Visayas produced and disseminated IEC materials to increase the knowledge of the farmer leaders

as well as of the members in order to improve their attitudes and behavior toward their work.

The pilot areas in this project were the Sibel-Belpat IA in Antique representing the NIS and the Camambugan (Iloilo) and Hamtic (Antique) representing the CIS. Among the CIS, however, the Camambugan IA in Dingle Iloilo was chosen to be the pilot area. This IA covers an area of 76 ha with a total number of 63 beneficiaries, all of whom are active members.

Control groups were also chosen to thoroughly identify the impact or effects of the intervention program on the performance of the IAs in the pilot areas. The control groups were the Pasbigtaba Cooperatives Inc. in Dumangas, Iloilo and the Anilao CIS in Anilao, Iloilo.

The materials produced and distributed included the following:

- Brochures or leaflets containing information on the IA bylaws and other legal documents (i.e., contracts Type I and II, Articles of Incorporation and Memorandum of Agreement) and IA-related activities. The participatory approach program was also included and was presented in story form.
- Comics magazines containing articles or events on successful IAs based on actual experiences and exercises of the organization.
- Wall newspaper containing updated information/reports on ongoing activities of the IAs, status of the ISF dues, amortization payments and others.
- Slide tape presentation (STP) containing information on the use of technology for the maintenance of the CIS.
- Bulletin boards are hung in strategic places. The boards contain minutes of previous IA meetings, NIA policies and other pertinent information.

Before and after the distribution of these IEC materials, a questionnaire survey was conducted. Based on the findings on the pretests and the post-tests, "there was a pronounced change in the scores achieved for the post-intervention examinations reflected in the overall increase of scores." This would only mean that the level of understanding of the members had

improved. It was deduced that the changes in the scores was brought about by the exposure of the IA members to IEC materials. *However, such increase in the awareness of the farmers cannot be attributed solely to the IEC materials distributed to the members.*

### **The West Visayas State University**

The IAs involved in the intervention project are the following: Hamtic IA, Belpat IA and the Sibel IA. The following were the intervention activities implemented by the Western Visayas State University:

1. ***Stimulation and Parlor Games.*** Community singing was introduced by the researchers to the farmers. The community singing was initiated to break the ice in group gatherings especially during meetings. The songs were about friendship, cooperation and camaraderie. Thus, in a very simple way, camaraderie and interaction were promoted.
2. ***Photo Exhibits and Special Awards.*** During the launching of the intervention program, a photo exhibit showing a "visual essay of the communal and National Irrigation Systems in Antique featuring the three IAs under study" was held.
3. ***Song, Slogan and Logo Contests.*** Contests in song, logo and slogan-making were conducted. Participants in these contests were from the three IAs involved in the study: Hamtic IA, Sibel IA and Belpat IA.
4. ***Lectures and Group Dynamics Exercise.*** During the weekly meetings of the farmer members, group dynamic exercises were taught to promote camaraderie and cooperation among the farmers.

The findings revealed that the collection efficiencies of the IAs involved had improved. Participation in structure maintenance activities by the BODs and the TSALs as well as the members also showed significant improvement.

A positive trend in the water distribution management was also evident and it showed an increasing capability of the IA to handle the supervision of the water distribution.

### **The Central Mindanao University**

The fourth intervention research was done by the Central Mindanao University with the collaboration of NIA and IIMI. The main thrust was to "assist the IAs to become self-reliant organizations using the community development process of creating planned social changes using their association as the channel to institutionalize such approach."

The pilot areas were the Kisolon-San Vicente IA and the Makapima IA. Radiation areas included the IAs of the Pulangi River Irrigation System, the Diclum IA and the San Vicente IA.

Using the Community Development Program, the intervention project in the Central Mindanao Region was implemented to assist farmer irrigator's association to become self-reliant. In this program, to be able to achieve this goal, it has to undergo four stages:

1. **Initiation.** General assembly meeting was held during this stage. The findings of the study of CMU under Phase I of the research component of IIMI was presented and discussed.
2. **Planning.** An organizational annual action plan was discussed by the collaborators with the IA Board of Directors.
3. **Legitimization.** The formulated organizational action plan was presented, discussed, validated, legitimized and approved by the IA members, IA leaders and IA Board Members.
4. **Implementation.** The implementation of the intervention programs started in May 1991.

The intervention research was implemented on the following aspects:

- Institution building and enhancement activities. Several training programs and workshop seminars were conducted. These included a seminar workshop on cooperatives, group dynamics and value education, making of feasibility studies and the planning and

implementation of the IA Annual Action Development Plans (ADP).

- Coordinated the validation, legitimization and approval of the ADP.
- Assisted in the implementation and the evaluation of the ADP.
- Strengthened the working relationship of the IAs with the other agencies and political units within the area of coverage.
- Assisted in the release of production loans from the LDP to the two IAs.
- Assisted and organized the IA cooperative with one IA (Kisolon-San Vicente) officially registered with the CDA as a full-fledged cooperative, with MACKAPIMA registration papers submitted to the CDA.
- Distributed IEC materials to all IAs and some municipalities in Bukidnon.
- Translated into Cebuano some basic documents of IAs and NIA.

Assessment of the impact of the intervention project in this particular region was focused on a few indicators such as the following:

- Water factors which included conveyance efficiency and distribution efficiency. Based on these it was found that there was an increase in the conveyance efficiencies of the systems involved. Such increases were due to low water supply in which the farmers tended to conserve water as much as possible by cleaning the canal from growing grasses, floating debris and bush including patching any form of leakages along the canal embankments and in the turnouts.
- Distribution efficiency refers to the amount of water received by the system as a whole. The findings reveal an increase in the distribution efficiency at the Kisolon CIS because it has a better

organized membership. Specifically, they have higher values and are more cooperative compared to the other two IAs of the PRIS. The O&M of the system were more effectively enforced and there was a minimal case of illegal checks.

### **Process Documentation Research**

The International Irrigation Management Institute designed and managed a process documentation research activity (PDR) in three selected national irrigation systems in the three regions covered by the AAPP. The actual process documentation research, however was carried out by: a) the Ateneo de Naga University; b) the Central Philippine University; and c) the Xavier University from July 1989 to July 1990. The methodology was formulated primarily on the basis of the Institute of Philippine Culture's wide range of experiences in this area of research. The Institute of Philippine Culture also provided the initial technical assistance and training to the three project leaders, one assistant project leader and eight process documenters.

Process documentation is a form of action research that IIMI, NIA and collaborating research institutions (universities) used during the first year of the FIOP implementation. It involves many of the methods employed in participant observation, although process documentation and participant observation may have different objectives. Process documentation provides a systematic recording of field-level activities, interactions, and concerns of farmers and agency personnel implementing an irrigation development program. In 1976, NIA began implementing the participatory approach in two pilot sites in small communal irrigation systems. Two years later in 1978, NIA and social science researchers met in a workshop to discuss the experiences and results of these initial efforts.

It was found, however, that it did not provide NIA vital information about the new approach—the specific decisions taken at each participatory activity, and farmers' roles in the participatory process.

Formally introduced in the late 1970s in one of the two original pilot irrigation sites, process documentation was later expanded to cover other sites as NIA implemented the participatory approach in other regions.

Participant observation accomplishes at least three purposes. It is a way to: (a) capture and observe farmer behavior and actions as they actually happen, similar to a "video-tape" of the activities happening within an

irrigation system, (not just as if it were one photograph), (b) obtain a more thorough description of social life in the irrigation systems, and (c) explore and discover things about the irrigation system that were previously unknown.

### ***FIOP and Process Documentation Research***

When the NIA staff began discussing FIOP, they planned a specific process documentation research component. However, fearing potential bias if NIA conducted its own research, the agency asked IIMI to implement the overall research program.

NIA first selected three FIOP irrigation systems, each of which is located in one of the three major geographical regions of the Philippines—Luzon, Visayas, and Mindanao. These three systems would be the process documentation study sites within each system; NIA then selected irrigated areas to be organized into IAs.

Later, with NIA's concurrence, IIMI contracted three Philippine universities (the Ateneo de Naga University, the Central Philippines University, the Xavier University) in these regions to conduct the process documentation research.

After training, four process documentation teams (a large irrigation system in the Visayas used two teams) were stationed in the three irrigation systems, focusing on four areas to be organized into IAs. The researchers lived in these sites for an entire year, from August 1989 to July 1990.

During the period, the process documentation teams coordinated their activities and findings with NIA authorities and these took place at three levels: at the irrigation system level, the NIA Regional Office level and at the NIA Central Office level.

The FIOP process documentation research was affected by three unique circumstances. First, although FIOP began in January 1989, bureaucratic delays forced the postponement of the start of process documentation to August 1989, a lapse of seven months. The researchers, therefore, were unable to actually observe and document the first seven months of FIOP. Instead, they had to conduct a "retrospective process analysis" and rely on interviews of farmers and NIA officials to reconstruct the crucial early phases of FIOP.

Second, despite the process documentation training, the first two or three months of process documentation reports were mere diaries or chronologies

of events. Although useful, these reports were too lengthy and impractical for the busy project implementors. It was not until the sixth or seventh month that NIA, IIMI, the universities and the researchers firmly established the three major topics that each report should cover:

- the FIOP organizing process
- field-level management of FIOP by NIA
- impact of FIOP on systems O&M

Following this development, succeeding process documentation reports were consistently shorter and more relevant than the reports of the first few months. Third, the FIOP process documentation differed significantly from the original process documentation research that NIA used in the 1970s. In the earlier research, NIA was implementing new processes and strategies in only one or two pilot irrigation systems in the Philippines. Thus, NIA could use the process documentation findings to make relatively easy program adjustments in one or both pilot systems.

Under FIOP, NIA was implementing new processes and strategies in scores of irrigation systems simultaneously throughout the Philippines. It was, therefore, difficult to enact immediate program changes in a large number of systems.

### ***Validation Process***

Process Documentation Research (PDR) is a qualitative research method using trained people to observe and question but not to interfere. Findings under the PDR were difficult to generalize because PDR sites in FIOP were very small. Hence, a validation process was formulated. Several validation workshops were conducted in the three regions covered by the AAPP. These were conducted to find out whether the PDR findings are applicable to non-PDR areas, to know the status of the FIOP implementation on both PDR and non-PDR areas and systems to identify issues and problems, strong as well as weak aspects, of the FIOP emerging from PDR and non-PDR areas and systems, and to come up with plans in PDR and non-PDR areas. Besides the objectives, the workshops also provided the opportunity for the FIOs and NIA field staff to interact with senior officials of the NIA Central Office.



Similarly, a validation questionnaire survey was conducted to further validate the PDR as well as the workshop findings. Questionnaire surveys were conducted in non-AAPP regions.

### ***Findings***

The three research methodologies a) process documentation research, b) validation workshops, and c) validation questionnaire surveys were found to be complementary to each other.

Based on the results of the three research methods employed, it can be concluded that the methods are complementary to each other. The PDR has been conducted over a period of one year and has provided an in-depth understanding of the FIOP process on site. The PDR proved to be beneficial as a mechanism for obtaining continuous feedback. The NIA, the university researchers and IIMI worked as a team in reviewing PDR findings at monthly meetings held at the regional level. Prior to these meetings, the "issues" contained in the reports were discussed with NIA officials at the irrigation system level.

The workshops and the questionnaire survey, on the other hand, were useful in "validating" the PDR findings. Because of the large sample size and the area covered, the analyst could get a better picture of the FIOP country-wide. The issues validated through workshops and questionnaire surveys originated from the PDR. Thus, the validation process was "guided" by the PDR results and was confined to the key issues which emerged from the PDR activity. Hence, the validation was a quick and effective process.



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