

PD-AAV-634

ISN 50526

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**A Short History of the
Farmer Irrigation Participation Project
in Thailand**



WATER MANAGEMENT SYNTHESIS PROJECT

**A SHORT HISTORY OF THE
FARMER IRRIGATION PARTICIPATION PROJECT
IN THAILAND**

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Prepared in cooperation with the United States Agency for International Development, Contract DAN-4127-C-00-2086-00. All reported opinions, conclusions or recommendations are those of the author (contractor) and not those of the funding agency or the United States Government. Mention of commercial products in this publication is solely to provide information. It does not constitute endorsement by USAID over other products not mentioned.



WATER MANAGEMENT SYNTHESIS PROJECT
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in cooperation with the
Consortium for International Development

May 1987

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I. BACKGROUND

Farmer participation and local organizations can be effective methods and mechanisms for improving irrigation system performance. However, involving farmers in effective irrigation organizations is not easy to define, measure, and package in a formula or model for universal application. Farmer participation is a process that should be emphasized throughout the life of an irrigation project. It can be defined by asking: Are things being done to and for farmers, or by them?

Coward (1980), Freeman (1986), and Uphoff (1986) have begun to develop a theory of farmer participation in local irrigation organizations. Farmers will develop or join an organization because they feel they can accomplish things collectively that they cannot individually. Participation in organizations provides both a process and a structure for farmers to carry out the essential tasks of any irrigation system: water allocation and distribution, system maintenance, resource mobilization, and conflict management.

Clapp-Wincek and Isralow (1983) and Steinberg (1983) provide numerous examples of effective and ineffective farmer participation in USAID's irrigation projects around the world. They conclude that farmers should be involved in decision-making for the entire life of the irrigation project. They also urge that project managers build irrigation organizations into irrigation projects.

Effective farmer participation in local irrigation organizations has been attempted in the Philippines (Korten, 1982; Isles et al., 1986), Sri Lanka (Uphoff, 1984), and Indonesia (Morfit, 1983). Though there have been serious problems in implementing such programs, the results indicate that efforts should be continued. To this end, USAID's Command Water Management Project in Pakistan, and Irrigation Management Project in Nepal are beginning to create effective water users' associations to improve irrigation system performance. Future USAID projects in Sri Lanka and Indonesia will continue these organizational efforts.

Participation is not a new strategy for development projects in Thailand. Small farmers were effectively involved in the development of the silkworm industry in Thailand, and participation has been a key element in Thai family planning programs. Additionally, Thailand's Sixth Five-Year Plan explicitly calls for increased local participation in development projects.

Some Thai irrigation projects have stressed effective farmer involvement. The Royal Irrigation Department (RID) attempted to introduce effective farmer participation in the rehabilitation of the Nong Wai Irrigation Project (Asian Development Bank, 1986). However, farmer participation took place after construction began, and there was

inadequate communication between farmers and irrigation officials at the site.

Khon Kaen University personnel are currently attempting to implement a participatory approach to small-scale water resource projects in northeast Thailand. Surarerks (1986) describes the development and management of some indigenous, small-scale irrigation systems in the hills of northern Thailand. Some of these systems are hundreds of years old. These "people's" irrigation systems generally have effective farmers' organizations.

While the Royal Thai Government and RID are committed to an ideology of participation, their experience with effective farmer involvement in RID irrigation systems has not always been successful. Participation and farmers' organizations often exist only on paper. There have been problems in putting a participatory approach to irrigated agriculture into operation.

In 1983, the USAID Mission in Thailand requested that the Water Management Synthesis Project (WMS II) come to Thailand and develop strategies for improved irrigation system management and rehabilitation. Among other findings, the WMS II team concluded that a participatory approach could be of some benefit to Thai irrigation.

An integral part of WMS II is the special studies component. Within this component, interdisciplinary studies examine the interaction between farmers and main system managers. With special studies in mind, WMS II personnel held discussions with RID and USAID/Thailand officials in 1983 and 1984 concerning a potential research and farmer participation project at one of USAID/Thailand's Northeast Small-Scale Irrigation (NESSI) Project sites.

The NESSI Project was designed to improve the operation and maintenance of eight RID irrigation systems in northeast Thailand through physical and institutional rehabilitation. The project focuses on northeast Thailand as this area is least developed.

The NESSI Project was particularly compatible with WMSII's special studies component. NESSI's purpose is "to establish a replicable approach and the necessary institutional capabilities for increasing agricultural incomes for poor farmers in small- to medium-sized irrigated areas of northeast Thailand." The special studies component also sought to examine approaches that would use local institutions as vehicles for change and development.

In late 1983, WMS II personnel developed a preliminary proposal for a farmer participation and organization project in Thailand. In early 1984, a WMS II team travelled to Thailand and met with RID and USAID/Thailand officials and visited selected NESSI irrigation sites. Unfortunately, budgetary problems forced a lengthy delay in beginning any special studies project.

Another problem facing the WMS II team was that USAID/Thailand's program priorities did not include institutional development of

irrigation systems. To be sure, the Thailand mission manages the NESSI Project. The NESSI Project, however, was viewed by some in the mission as merely providing assistance for physically rehabilitating irrigation systems. Some Thai officials in the Bangkok mission, however, were enthused about the idea of a farmer participation project in Thailand, and discreetly pushed the idea within the mission.

In 1985, WMS II personnel from Colorado State University (CSU) had further discussions with Nukool Thongtawee, RID Director of O&M, and Dr. Kanda Paranakian of Kasetsart University. This resulted in a modified research and implementation proposal (which was called the Thailand Irrigation Organization Project) for an organizational initiative at one of the NESSI sites. RID accepted the revised proposal, and in August 1985 the proposal and budget were approved by USAID/Washington and USAID/Thailand.

The Thailand Irrigation Organization Project (more commonly referred to as the Farmer Irrigation Participation Project - FIPP) contains related implementation and research subprojects. While NESSI physically rehabilitated one of their irrigation systems, the WMSII Project proposed to encourage farmers to develop or revitalize local irrigation organizations in that NESSI irrigation system. These would be farmers' organizations, not RID's, and would give farmers the incentive to participate in irrigation improvement activities.

The proposal called for RID to implement the participatory approach, with some help from WMS II. During implementation, WMS II would supervise engineering and social science research at the site. The research results would be given to the RID project implementors. The implementors would use these results to improve their work, and also to document the organizational process for comparison with similar projects in Asia.

The specific objectives of this project were to:

1. Apply and test in a preliminary trial an alternative strategy for organizing farmers' water users' groups on a tank scheduled for rehabilitation.
2. Document the process of organization and evaluate the outcome of implementing the alternative strategy in terms of improved farmer participation in rehabilitation, operations and maintenance, and in improved performance of the tank system.
3. Institutionalize a "learning process" in RID for improving the rehabilitation and management processes through increased farmer participation.
4. Describe and analyze the preliminary experience in terms of its implications for farmer organization and shared responsibility in management.

An important aspect of the project was the limited two-year budget from WMSII. On-site assistance from WMSII personnel was constrained.

The proposal called for one person-month of assistance from WMSII each year, or a two-person team could travel to Thailand for two weeks each year. In practical terms, the budget would allow an engineer and a sociologist to travel to Thailand twice during the life of the project. Therefore, the Thais involved in the project shouldered most of the burden for implementation and research. Most guidance from WMSII would be indirect, not in person.

II. LAM CHAMUAK IRRIGATION PROJECT

In September 1985, Dr. Alan Early of WMSII/CSU went to Thailand to discuss site selection with RID personnel. Dr. Early stressed that an effective farmer participation project should begin before physical improvements were made on an existing system. He preferred a site where organizational activities could take place during all three phases of NESSI's rehabilitation and improvement program: pre-construction, construction, and O&M.

After discussions in Bangkok, Dr. Early travelled to northeast Thailand with RID and NESSI personnel. Two NESSI sites were examined, including one that was considered in 1984. At this site, however, construction was already taking place.

At Lam Chamuak, the last of the seven NESSI sites, construction was still at least a year away. Here was an irrigation system where effective farmer organizations could be formed in the pre-construction phase. Lam Chamuak was the least influenced by the improvement promises made by NESSI. Except for the design, there had been no other NESSI activities in the Lam Chamuak project. After a brief reconnaissance of the system, Dr. Early, RID, and NESSI officials decided to implement the Thailand Irrigation Organization Project at Lam Chamuak.

Lam Chamuak is a five-hour drive from Bangkok, approximately 80 km east of the large city of Korat. It is a surface-water, gravity-flow system that began operating in 1968. A 1500 m earthen dam across the Chamuak River stores water for the system.

A 13.3-km right main canal and 7.4-km left main canal command 5,000-6,000 rai (1 rai = 0.16 ha; 5,000-6,000 rai = 850-1,000 ha) in the wet season. Dry season irrigation is much less, commanding about 1,000-1,500 rai (150-250 ha). The original design called for a command area of 13,500 rai (2,200 ha).

There are 51 turnouts along the two main canals. Each main canal is lined for approximately 5.0 km. There are no control structures on the two main canals.

Lam Chamuak was designed to supplement rainfall for paddy cultivation in the wet season (June-October). Average paddy yields are about 400 kg/rai (2.4 mt/ha). Cucumbers, beans, and pumpkins are also grown in the wet season for home consumption and local sale. Wet season water deliveries begin in June and sometimes continue through November. The amount of wet season water delivery is approximately 2.0 mcm/month.

Water is also delivered during the dry season (January to April), averaging about 0.6 mcm/month. Dry season irrigated agriculture, however, is not very popular. Farmers cultivate cash crops in the dry

season that require very little water, such as cassava and sesame. Sale of cassava generates considerable income for farmers. Additionally, fruit trees (sweet apple, mango, banana, coconut, and jack-fruit) are grown near farm houses for home consumption.

The soils at Lam Chamuak are generally sandy loam with a gray, unconsolidated sub-horizon at varying depths that are semi-permeable to water. Farmers complained that after drying, some Lam Chamuak soils become rock-hard. They refer to such soil as "elephant brains."

There are two different ethnic groups at Lam Chamuak: Thai Korat (old Thai) and Thai Esan (new Thai). The two ethnic groups speak different dialects of the Thai language. The Thai Korat usually cook their food with oil or coconut milk and eat non-glutinous (non-sticky) rice. The Thai Esan practice ancestor worship and eat glutinous (sticky) rice.

Many of the Thai Esan arrived in Lam Chamuak about 40 years ago, and settled in the villages close to the head of the system. The Thai Korat and some Thai Esan are located in the Department of Public Welfare's Land Settlement Scheme in seven villages in the middle and tail of the system. Here houses and roads were well laid and maintained. Each household in this scheme was allotted approximately 23 rai (4.0 ha) of land.

Intermarriage is relatively common. After marriage, members of one ethnic group often move to a different village to live with their spouses from the other ethnic group. There were no conflicts reported between the two ethnic groups.

Electricity is provided throughout the area, and some farm houses have television sets. Many modern agricultural technologies are used; i.e., fertilizer, small tractors, and small trucks for transporting produce.

Farm size in the project ranges from about 4 rai (0.67 ha) to 180 rai (29 ha). The average size of farm family holdings is about 20-30 rai (3-5 ha). Land tenancy is rare.

RID established a water users' association (WUA) in Lam Chamuak in 1968. All farmers in the project command area are eligible to join. In 1985, about 500 farmers were reported to be members, and approximately 100 farmers attended the yearly meeting. The association consists of a chairman elected by all members to a two-year term, two vice-chairmen (one for the settlement areas, one for the non-settlement areas) appointed by the chairman, a secretary, a cashier, and a receptionist.

The chairman is supposed to notify the RID tank caretaker when farmers require water, and the tank caretaker is to ask the project water master to release water. The chairman is also supposed to organize maintenance activities and inform association members of irrigation rules and regulations.

Farmers are asked to pay 20 baht (in 1986, 25 baht = \$1.00; 20 baht = \$0.80) to join the association. Farmers receiving water are also asked to contribute 2 baht/rai for association expenses. This money is deposited in the local Thai farmers' bank, and at least two officers are required to be present to make withdrawals. In 1985, the chairman stated that no collection of money had been made recently because he did not have time.

Each turnout along the two main canals is supposed to have a turnout group (TOG) and a leader elected by farmers along that ditch. The TOG leader is supposed to allocate water along the ditch. The number of farmers along each ditch varies from 2 to 24.

III. OCTOBER 1985 LAM CHAMUAK WORKSHOP

In October 1985, Dr. Alan Early and Dr. Robby Laitos of WMSII/CSU went to Lam Chamuak to conduct a two-week, project implementation workshop. Workshop participants were from RID, NESSI, and Kasetsart University. The objectives of this workshop were to (1) conduct a rapid appraisal of the irrigation system to tentatively identify the strengths and weaknesses of the system, (2) search for potential solutions to the system's problems, and (3) identify priority research needs. The workshop also provided the opportunity for all project personnel to meet and plan together for the first time.

During this workshop, interdisciplinary teams conducted a rapid appraisal of Lam Chamuak. The teams identified two major strengths and two major weaknesses. The first major strength was the presence of established irrigation organizations that could be improved and built upon. The existing water users' association and TOGs performed some useful functions including conducting public meetings for information purposes and collecting and distributing money for needed travel expenses.

The second major strength identified was the expressed willingness of Lam Chamuak farmers to participate in system improvements. The Lam Chamuak social structure, including population characteristics and landholding patterns, did not appear likely to hinder improved organizational activities. Farmers' attitudes also appeared conducive to effective participation.

More importantly, the farmers' behavior indicated that effective participation and organizational behavior already existed at Lam Chamuak. In the local communities, farmers work together to construct temples, roads, bridges, and roadside rest areas. The work is often supervised by Buddhist monks, who have taken a lead in development activities. Along some turnouts, farmers have worked together to clean not only the ditches, but occasionally the main canal as well. Some TOG leaders also stated that farmers also cooperate in distributing water.

The Parsons-Team Consultant Task Force (1985) studied Thai irrigation systems. They concluded that Lam Chamuak farmer institutions were stronger than in other NESSI sites and that there was a high rate of farmer participation. The task force stated that farmers had a positive attitude towards participation and "...it should not be difficult to induce them to participate more in irrigation." Other researchers from the Asian Institute of Technology in Bangkok researched the Lam Chamuak area and concluded that active participation is prevalent at Lam Chamuak. The researchers said that Lam Chamuak has the kind of potential that project planners are always looking for.

The rapid appraisal teams also identified at least two serious weaknesses in the system. First, there appeared to be an organizational breakdown in the present farmers' irrigation groups. There were no widely accepted, well-known rules or regulations for system operation and maintenance. The association appeared to have no written, or even informal, rules and regulations for behavior, and its purpose was vague to most farmers. The association had form, but no function. Neither the farmers nor the officers were sure what their roles should be. Most irrigation activities were performed ad hoc. Farmers also complained that the association was too big and unresponsive to their needs. Pengsawang (1982) also reported that the Lam Chamuak water users' association is not functioning properly.

There also appeared to be a lack of communication and knowledge within the farmers' groups, and between the groups and irrigation authorities. Most farmers contacted did not know who the association officers were, and the officers did not know the farmers. The election of officials primarily involved only one or two villages. Irrigation officials also lacked knowledge of farmers and farmers' groups.

Another major weakness identified was the unreliable and inequitable distribution of irrigation water. The teams' observations and farmers' reports indicated that the tail of Lam Chamuak rarely received canal water and suffered as a result. Indeed, the last 4.0 km of the right main canal has never been used and the canal is completely overgrown with vegetation. It is almost impossible to find the tail portions of the main canals. One farmer in the middle of the system called the canals "air canals," as they only carried air, not water.

The farmers also reported that the people owning land close to the canals would often not allow water to pass through their fields to other fields lower in the system. Thus, field-to-field irrigation appeared to contribute to inequitable water distribution.

There were also reports of considerable water theft throughout the system as farmers struggle to obtain water for their fields. A number of short-term conflicts result, and farmers guard their water at night, particularly during times of water scarcity.

Based on these findings of system strengths and weaknesses, the workshop participants developed a farmer participation and organizational strategy for Lam Chamuak based on implementation and research. The core of the implementation strategy was to develop a cadre of ICOs (irrigation community organizers). These "catalyst agents" would be young men and women trained in basic organizational and water management techniques. They would live in Lam Chamuak villages and help farmers build their own effective irrigation organizations. The ICOs would not become leaders of these organizations, but would encourage farmers to develop their own associations and rules. (Such a strategy employing catalyst agents is currently in use in the watershed Mechem Project in northern Thailand.) A specific ICO workplan would be developed in November and December of 1985.

The farmer organizations would be responsible for working with NESSI officials in the pre-construction stage of the Lam Chamuak improvement program. Later, they would participate in decision-making during the construction and O&M phases of the project.

During the search for solutions phase of the workshop, participants identified activities that would be the exclusive responsibility of RID and NESSI, the exclusive responsibility of farmers and their local organizations, and the joint responsibility of RID, NESSI, and the farmers.

The workshop participants also developed some general guidelines for research. One high level RID official stated that Thailand has always lacked written documents on how projects have been implemented. Therefore, he stated, Thailand has never been able to learn from its own experience. Consequently, the research should generate valuable data that project personnel could use as part of a "learning process," such as Korten (1980) describes.

Participants decided that five Thais would be involved in data collection and analysis. Two junior engineers, supervised by a field research engineer, would devote 100 percent of their time to the project. The field research engineer would devote 50 percent of his time to the project. A social science research assistant would live at the site full time, supervised by a senior social science researcher, who would devote 50 percent of her time to the project.

The general workplan developed at this workshop called for the formation of a site coordinating committee, which would meet at Lam Chamuak the first Thursday or Friday of each month. This committee would be a working team of project implementors and researchers, including the regional and provincial RID project administrators, the NESSI project field manager, and sometimes RID's director of O&M.

The original plan also proposed that the site coordinating committee would be supervised by a project advisory committee, which would meet in Bangkok the last of each month. This second committee proved to be a burden for many participants, however. Decision-making was transferred to the site coordinating committee meetings at Lam Chamuak.

IV. ICO RECRUITMENT, TRAINING, AND WORKPLAN

In November 1985, RID's provincial irrigation engineer published announcements of ICO employment opportunities in local Thai newspapers and at the provincial irrigation office. Because the project had to begin in December 1985, the announcements were run for only two weeks. This limited the time that RID and Dr. Kanda Paranakian (senior social science researcher) could spend in selecting potential ICOs.

Despite the short time, 63 candidates submitted applications. Eight ICOs were selected. These were four young RID employees, all males and graduates of vocational schools, and four young female college graduates with no RID background. Officials told the four female ICOs that they would be paid by RID and NESSI, but they would be temporary RID employees.

As RID had never conducted an ICO training program before, they contracted with NIACONSULT in the Philippines for a training consultant. NIACONSULT is associated with the Philippines' National Irrigation Administration. It has years of experience training young men and women how to help farmers organize water users' groups.

On November 16, Ms. Victoria Pineda of NIACONSULT arrived in Thailand. She spent a week in Bangkok with RID training officials and Dr. Kanda developing an ICO training schedule, a course curriculum, and materials. From November 26 to December 7, 1985, RID and NESSI officials, Dr. Kanda, and Ms. Victoria Pineda conducted the ICO training at Lam Chamuak. The first part of the training program covered basic community organization concepts, principles, and processes; fundamental ICO skills required; key issues in developing water users' groups; and the roles and responsibilities of ICOs.

Each ICO was then asked to spend 6 days with Lam Chamuak farmers. The ICOs were to live in a Lam Chamuak village and talk to as many farmers as possible, gathering data about Lam Chamuak irrigation and organizational activities. At the end of the 6 days, the ICOs were to discuss their experiences and consolidate their data.

The final activity in the training workshop was to develop a nine-month ICO workplan for Lam Chamuak. The training staff decided that it would be impractical to make detailed plans more than 9 months in the future. The workplan was a group effort, with much input from the ICOs and the RID training staff. The workplan included activities, people, time frames, and expected outputs. The general thrust of the ICO workplan was to post ICOs at the site, have them discuss with farmers the proposed NESSI improvements at Lam Chamuak, and have them encourage farmers to form effective organizations so that they could become involved in improvement efforts. The ICO workplan was printed on large poster paper and prominently displayed at the Lam Chamuak ICO office.

V. ICO ACTIVITIES IN 1986

A. LIVING ARRANGEMENTS

In December 1985, the eight ICOs were posted at Lam Chamuak. For the first few weeks, the ICOs preferred to live together in one location. Initially, therefore, seven of the eight ICOs lived with the president of the existing WUA. Additionally, the president was protective of the four female ICOs, as it is unusual to have single females working alone in rural Thailand. Later, the ICOs realized that living at the president's house meant that their independence could be questioned.

For the first month, the president accompanied the ICOs to Lam Chamuak villages and farms, introducing the ICOs to the farmers. Most of the time, however, the WUA president did all the talking and the ICOs simply took notes. The ICOs did not have motorcycles and their mobility was limited.

As the ICOs became more familiar with the area, they realized that they should live apart from the WUA president. They needed to meet and establish credibility with the farmers on their own. Therefore, most of the ICOs finally left the president's house to find living quarters with farm families throughout the command area. One ICO stayed at the president's house to be close to his assigned area.

The ICOs reported that they got to know the farmers quite well by living with them, but financial arrangements for living expenses were a problem. There was confusion concerning how much money the ICOs should contribute to household expenses. Also, the ICOs felt that they were imposing on the farmers' hospitality. The female ICOs were particularly uneasy because sometimes the ICOs attended late night TOG meetings. When they returned to the farmer's house, they had to knock on the door and awaken the family to come inside. After 6 months, the ICOs rented separate houses and rooms in Lam Chamuak villages. This arrangement proved satisfactory.

One ICO, however, was married and wanted to be closer to his family in Korat, about 80 km to the west. When his work prevented him from going to Korat, he became concerned about his family's welfare. This legitimate concern meant that this ICO spent his weekends in Korat. He never established a semi-permanent residence at Lam Chamuak. (Later on, all ICOs agreed that single people make the best ICOs.)

B. ICOs' PRELIMINARY ACTIVITIES

The sequence of ICO activities was outlined systematically in the ICO workplan developed by RID and Victoria Pineda during the ICO training. The first activity was integration into the community. It was felt that the ICOs needed to become a part of the Lam Chamuak community by living and working with farmers.

In reality, the first substantive ICO activity was to conduct a complete enumeration of Lam Chamuak farmers. The RID supervisors of the ICO program stated that they needed to know who was farming in the command area. This knowledge would help them plan the future rehabilitation and improvement program. These officials also hoped that the survey would help the farmers and the ICOs meet and become acquainted with one another.

Some ICOs, however, felt that the survey of water users interfered with their integration into the community. Rather than getting to know villagers well, the ICOs had to briefly meet as many farmers as possible and ask them short questions. Though the ICOs did see all parts of the system, there was no time to become acquainted with the villagers or to fully explain to them what an ICO was.

These initial efforts, therefore, were sometimes confusing and difficult for the ICOs and farmers. The ICOs' role was new and not yet sharply defined. Farmers were skeptical. Though RID informed the local administrative authorities about the ICOs' presence and work, the authorities were unsure why the ICOs' were at Lam Chamuak. Local village leaders often accompanied the ICOs to meet other farmers and explain the ICOs' presence in the village. It took at least 3 months for the initial confusion to end.

The ICOs first major irrigation activity was to help farmers revitalize their existing, but moribund, turnout groups (TOGs). If this proved impractical, the ICOs were to encourage farmers to form new TOGs. TOGs already existed on paper, as did the Lam Chamuak WUA. Over the past 10 or 15 years, however, they ceased to function. Reviving or forming new TOGs was vitally important as these groups would be the vehicle for meaningful farmer participation at Lam Chamuak.

The ICOs' strategy was to meet the farmers along each turnout. The ICOs asked each set of farmers to identify potential leaders for TOGs. The ICOs then asked the potential leaders to organize meetings with the other farmers along the turnout.

This sometimes dreary, but necessary, organizational work was done through the winter and spring of 1986. It was the dry season when only 10-20 percent of Lam Chamuak farmers irrigate. Unfortunately for the ICOs' work, some farmers leave Lam Chamuak in the dry season to seek non-agricultural labor outside the system. Others grow upland crops (cassava) on land they own outside Lam Chamuak, and they are often absent.

The ICOs did not yet know the community and the farmers very well, and took a great deal of time to contact farmers throughout the system. Farmers were scattered in villages and sometimes were not at home or in their fields when the ICOs arrived. The ICOs quickly discovered that they often had to make appointments to see farmers, or had to catch them early in the morning or in the evening. Despite these logistical problems, the ICOs were able to contact farmers on all 51 turnouts along the left and right main canals.

In general, the initial informal TOG meetings were successful. Of 503 TOG members, the ICOs counted 463 members (92 percent) who attended. At the TOG meetings, the ICOs talked with the farmers about NESSI's proposed rehabilitation plan and urged farmers to become effectively involved in the pre-construction, construction, and O&M stages. The ICOs told the farmers that RID and NESSI sincerely wanted their ideas and participation in this project. The TOGs and WUA would be the key link to RID and NESSI. A few times NESSI engineers accompanied ICOs to these meetings to lend credence to the talk of system rehabilitation and improvement.

During these group meetings, the farmers and ICOs discussed irrigation problems, how future group meetings should be held, and the willingness of farmers to participate in the proposed system rehabilitation. Most farmers at these meetings stated that they would cooperate with RID and NESSI to rehabilitate the system. At least initially, the farmers said they would help RID plant grass along new canal banks to prevent erosion, give up portions of their land for construction of farm and main ditches, contribute labor for farm ditch construction, and write any TOG rules and regulations on wooden boards at the turnouts.

ICOs particularly stressed the need for the TOGs to develop new rules for irrigation or to enforce existing rules. It was important that each TOG develop its own rules, so that the groups would truly be farmers' groups, not RID groups. The rules and their enforcement would be the rationale for the TOG. In principle, the TOGs would then deliver to the farmers something they lacked -- predictability and better water control.

Often using their own initiative, farmers in TOGs formulated rules and regulations for water distribution and maintenance. Fines were agreed upon for those breaking the rules. Some TOGs developed rules for membership, requiring everyone who used canal water, whether a farmer or not, to join the TOG. Many TOGs along the right main canal developed a rule that vegetables could no longer be grown along canal banks as that caused soil erosion and increased the sediment in the canals. One TOG insisted upon a 30 baht fine for those breaking the rules; another demanded 50 baht. Farmers then monitored compliance with these rules.

WMSII personnel tried to monitor the organizational effort at Lam Chamuak. Short visits were made to Lam Chamuak in January, March, and June of 1986, usually while the WMSII staff member was on his way to another country in Asia. One WMSII staff member observed a farmers' meeting with ICOs when rules were being debated and developed. After the rules had been accepted, the farmers signed the set of regulations they had worked out with the ICOs. The farmers laughed when they signed the rules. The WMSII staff member asked why they were laughing. Dr. Kanda was present and told him that one of the farmers had said they might have to sell all their buffalo to pay the fines.

During the organizational meetings in the dry season, farmers had many questions. When will construction for rehabilitation begin? Can farmers apply for jobs during construction? Will turnouts be enlarged? Will farmers from outside the command area be allowed to pump water from the main canals if they are willing to participate in the system rehabilitation?

Often the ICOs did not have answers to these questions. Their training contained little information regarding the proposed NESSI rehabilitation and improvement plan. Some farmers even complained that ICOs told them that the construction schedule was a secret and could not be revealed to the farmers. Mostly, however, the ICOs told the farmers they did not know the answer to these questions, but said they would try to find out.

Some of the questions were answered at the monthly site coordinating committee meetings at Lam Chamuak. ICOs, Dr. Kanda, the engineering and social science researchers, and RID and NESSI officials attended these meetings to discuss their work and plan any changes in their activities.

However, NESSI officials were sometimes unable to answer specific questions about the construction schedule and plan. Since NESSI did not have its FY1987 budget approved by the Thai Parliament in Bangkok, the NESSI officials were unsure about the exact details of the construction plan and schedule.

C. NEW DESIGN FOR LAM CHAMUAK

NESSI officials told the ICOs that construction would probably begin in 1987. The tentative new design called for enlarging the command area from 6,000 to 13,500 rai. (This was the size of the command area originally planned in the 1960s.) The new design also called for changing the location of many turnouts and increasing the number of turnouts from 51 to 128. The number of farmers served would increase from approximately 500 to 900.

The proposed changes in the turnouts had an immediate impact on the ICOs' activities. Until March 1986, the ICOs helped farmers revitalize the "old" 51 TOGs. Under the new design, many of the old TOGs would merge or split, and entirely new turnouts would be constructed. The ICOs had to return to the farmers, explain the changes, and try to build new TOGs based on the new design.

Two ICOs made a particularly strenuous effort to help farmers form TOGs at the extreme tail of the system. Farmers in this area never received water from the Lam Chamuak tank and were skeptical that water would reach them, even after rehabilitation. Nevertheless, the ICOs persisted at the extreme tail and did, in fact, help farmers build new TOGs.

NESSI wanted to involve farmers in the new design. They suggested to the ICOs that the farmers provide bamboo stakes and accompany NESSI technicians during the new survey, placing stakes where new turnouts

and main ditches would be located. Technicians were then supposed to discuss with farmers the advantages and disadvantages of a particular turnout location and ditch alignment. The ICOs talked with the farmers, and they agreed to this plan.

D. END OF 1986 DRY SEASON: PROBLEMS AND PROSPECTS

TOGS. In May and June, Lam Chamuak farmers began harvesting their dry season crops and preparing the canals and ditches for the wet season irrigation beginning in June and July. The ICOs recognized that some TOGs were better organized than others and spent more time in the areas where there was more conflict and difficulty with organizational work.

The ICOs were not responsible for all of the farmers' motivation to revitalize their TOGs. Much of the farmers' stimulation came from self-interest, as they realized that activities such as main ditch maintenance could be carried out more effectively by a group, than by individuals. In many cases, the ICOs simply guided or channeled the motivation that was already there. ICOs stated that they and the farmers stimulated each other to work harder.

A continuing problem during this period was the farmers' lack of information concerning system rehabilitation and improvement. Some farmers claimed that they had nothing to talk about during TOG meetings because they did not know exactly when construction would begin, how the new design would look, and exactly how farmers could participate in rehabilitation and improvement. These farmers, therefore, took a "wait and see" attitude. Other farmers said that the rules formulated at the TOG meetings might work for the dry season irrigation, but that some people would not observe the new rules when farmers desperately needed water for their wet season paddy crop.

Administration. Several administrative problems bothered the ICOs during the first 6 months of the project. ICOs sometimes received their salaries late. Reimbursements to the ICOs for motorcycle repairs also took much time.

The RID officials supervising the ICOs also had administrative problems. The ICO supervisor at Lam Chamuak had much paperwork and other RID duties. In addition, none of the ICO supervisory staff received training in this new approach, and they were often unable to guide the ICOs' work.

Research. The engineering and social science research components progressed during the dry season. Initially, however, some RID employees mistakenly believed that the social science research assistant at the site was really an evaluator "spying" on their work. These RID officials wanted the social science research assistant to report to them before every site coordinating committee meeting. It took almost 6 months of steady lobbying to convince these officials that the assistant's work was valid research, not evaluation, and that the organizational process needed to be fully documented.

The social science researchers had a dilemma when RID officials asked them to become involved in the implementation of the project. RID officials always asked the senior social science researcher how RID should work with the ICOs and farmers. However, she felt she was working as a researcher, not as an implementor. At times she found it difficult to separate the role of researcher from the role of implementor. Eventually, RID accepted her formal role as a researcher. However, she could not totally avoid advising RID on implementation decisions at the monthly site coordinating committee meetings.

These problems did not prevent the researchers from collecting some important data at Lam Chamuak. For instance, the social science research assistant discovered a large group of farmers outside the command area, who used water from the tank, not the canals, to irrigate their fields during the dry season. These farmers had a tightly-knit organization and irrigated up to 600 rai using the tank water. Local RID officials had not stopped their activities as long as there was sufficient water in the tank. RID and NESSI, however, did not know the extent of this irrigation. When the senior social science researcher presented these findings at the monthly site coordinating committee meeting, RID and NESSI project staff discussed how this irrigation would affect the management of the system.

E. WET SEASON, 1986

By the beginning of wet season in 1986, farmers had participated in several maintenance activities. The ICOs stimulated the TOG leaders to mobilize labor to remove sediment and weeds in the main canals and farm ditches. Where labor was short, the president of the WUA helped mobilize labor from other villages.

Every TOG member helped to clean the main canal until it was finished. All the left main canal TOGs were divided into two groups: head and tail. All head farmers cleaned the head of the main canal and all tail farmers cleaned the tail of the main canal. The workers included male and female farmers, landowners, tenants, relatives of landowners, and hired laborers.

Some farmers complained, however, when a TOG with a small number of members had to maintain the same length of main canal as a TOG with more members. The TOG with fewer members might take 4 days to complete their work, while the TOG with more members finished in 2 or 3 hours.

Some TOGs were strict in requiring all farmers along a turnout to provide labor for maintenance. Leaders from these TOGs kept meticulous records of who contributed labor. Those farmers who were not present and could not provide an adequate excuse were fined. The social science research assistant observed many examples of TOGs actually enforcing their rules and fining farmers.

TOG 21 on the right main canal, for instance, stressed strict rule enforcement. The TOG leader called a meeting of the farmers along the turnout and set a maintenance schedule. He also reminded the members of the rules and regulations they had all agreed to in the

April TOG meeting with the ICO. At that meeting, the TOG members decided that those farmers who only worked half a day would be considered absent. After the first maintenance activity in June, 14 members were either fined 30 baht/day for not participating, or they had to agree to provide double labor for the next maintenance activity.

In other TOGs there were no punishments for those who did not participate in system maintenance. In these TOGs, some members hired labor to do the work for them.

Some TOGs developed strict water allocation procedures with a rotational water delivery system along the farm ditches. Farmers from these TOGs made large wooden signs outlining the TOG's allocation rules, and posted the signs along the main canal next to the turnout.

Farmers received water by different methods. Some received water directly from the main canal, while others received water from the farm turnout. Still other farmers pumped or siphoned water out of canals or natural ponds. Some farmers who badly needed water placed checks in the main canals at night to raise the water level at the turnouts.

By the end of August, some of the TOGs who rotated their water deliveries along the main or farm ditches abandoned this procedure. Sometimes it was because the TOG leader was not able to enforce the rules and regulations or because the farmers were accustomed to a more "laissez faire" system of water delivery. In other TOGs, the members were no longer interested in a fixed water delivery schedule because they wanted to finish transplanting as soon as possible. This usually caused some conflict in the rush to receive water. Other TOGs, however, continued their rotational water delivery and members cooperated with one another because the TOG leaders were respected.

In the beginning of the 1986 wet season, NESSI technicians worked with farmers to lay stakes to mark the proposed new turnouts and ditches. NESSI technicians would tell ICOs that they would be at a certain place at a certain time to lay out the stakes, and the ICOs would inform the farmers. Sometimes, however, the NESSI technicians arrived late, which frustrated the farmers and ICOs.

Despite misunderstandings, NESSI technicians said that Lam Chamuak farmers showed great willingness to participate in laying the stakes. The technicians compared the Lam Chamuak farmers favorably with farmers from other NESSI sites where farmers did not want to become involved.

ICOs had also organized TOGs at the extreme tail of the system, where farmers had never received Lam Chamuak water. Farmers at the tail also prepared stakes and waited for technicians to arrive. By August 1986, however, NESSI realized that continued budgetary problems might prevent rehabilitating the system all the way to the extreme tail. This meant that these farmers would still not receive water from the Lam Chamuak tank. These farmers were originally told that water would reach them after the rehabilitation and improvement program. Now the extreme tail farmers began complaining, "My stakes are rotting while I wait!" The ICOs were particularly sensitive about this

situation as they had originally helped these farmers organize TOGs in the expectation that water would arrive. The ICOs felt that the farmers would lose faith in their effort if water could not be delivered to these farmers.

Where rehabilitation and improvement will take place, there are formal, yet time-consuming, government procedures for considering farmers' suggested changes. According to government procedures, the NESSI field staff at Lam Chamuak cannot make any immediate change in the design based on farmers' suggestions. They first investigate if the farmer's request is technically feasible. If it is, they present a case for the change to the modifying design committee at RID headquarters in Bangkok. This process takes much time.

At one farmer's field along the right main canal, NESSI technicians staked the position for a proposed change in the main ditch. The new main ditch will be on high ground, and farmers below the proposed ditch were afraid that seepage from the ditch would harm their fields. They talked to NESSI technicians, but the farmer who made this request was still waiting for an answer. Both farmers and NESSI officials are committed in principle to incorporating farmers' suggestions into the new design, and they are searching for a more efficient administrative mechanism to actually incorporate these suggestions.

Despite these problems, laying the stakes brought main system managers and farmers together through the TOGs. A dialogue in the field between farmers and NESSI/RID was begun.

During the summer, ICOs and RID officials also discussed the possibility of holding a TOG training session for the Lam Chamuak farmer leaders. Officials felt that such training would provide the farmers with a better understanding of the irrigation system and group work. Therefore, RID conducted a review and training session for TOG leaders from August 25-28, 1986. RID officials presented lectures on the background of the Lam Chamuak rehabilitation and improvement program, and on irrigation and water allocation. TOG leaders presented their organizational experiences over the past nine months. The ICOs then presented some suggested changes in design to RID officials on behalf of the farmers. NESSI and RID officials said they would seriously consider these suggestions.

F. END OF THE FIRST YEAR

By September 1986, the ICO workplan developed with Victoria Pineda was finished. Though RID wanted to keep the ICOs at Lam Chamuak as a team, arrangements had already been made to send the four, full-time RID ICOs back to their former positions, and one ICO left the program to take another job.

NESSI asked the remaining three female ICOs to become part of a "mobile team." NESSI officials were having trouble organizing farmers in the other NESSI sites. These officials hoped that by posting the remaining ICOs at the other sites for two-week assignments, they could help farmers organize viable irrigation groups.

During the fall of 1986, the mobile team travelled to the other NESSI sites to work with officials and farmers. The stays at each site, however, were very brief. By December, both NESSI and the ICOs concluded that two weeks was too short a time to begin an organizational process. At the end of two weeks, farmers were just beginning to understand who the ICOs were and what their role was. In addition, the ICOs stated that they preferred to be posted at Lam Chamuak because they had already started an organizational process and structure there and they were better acquainted with Lam Chamuak farmers.

Throughout the latter part of 1986, documentation of the Lam Chamuak work continued. Dr. Kanda supervised the full-time social science research assistant at Lam Chamuak. This researcher interviewed sample farmers and key informants and kept a field diary of his observations. Dr. Kanda provided the minutes of the monthly site coordinating meetings and monthly reports of ICO and researchers' activities to RID and USAID/Thailand. Engineering and agronomic data were also systematically collected by the engineering field staff.

In December 1986, WMSII and RID sponsored a review and planning workshop for all Lam Chamuak participants. (See the WMS II publication, **Proceedings of the Review and Planning Workshop for the Thailand Irrigation Organization Project**, for a complete description of this workshop.) RID and NESSI officials, ICOs, Lam Chamuak farmer leaders, researchers, and WMSII personnel met for two weeks to review the 1986 work and plan for 1987. There was general agreement that the process should continue at Lam Chamuak, particularly as construction was scheduled to begin in the spring of 1987. All participants felt that involving farmers in the construction activities was important.

Despite the problems, RID officials were pleased with the first year's work and wished to extend the ICO effort to two nearby irrigation systems in need of rehabilitation and improvement. The ICOs wanted to continue their work, but said they needed to develop a new workplan for 1987. The farmer leaders attending the workshop praised the work of the ICOs and said they should return to Lam Chamuak.

On the final day of the workshop, senior Thai government officials and representatives from USAID/Thailand came to Lam Chamuak. After attending a briefing on the history and current status of the ICOs' work, all participants went to the field and met with a small group of farmers. At the conclusion of this one-day, senior officials' workshop, the Deputy Director General of RID stated that he was impressed with the Lam Chamuak effort, and he would make this a pilot project for RID.

VI. CONCLUSIONS

Effective farmer involvement must contain both a process (participation) and a structure (farmer organizations). Both of these elements are present at Lam Chamuak, though in rudimentary form. Farmer participation and farmer organizations need to be improved. Within the TOGs, not all "free riders" have been controlled. At some locations in the system, farmers are still skeptical regarding the benefits of farmer organizations. Much work remains to be done.

Farmer participation activities in 1986 were only a part of the first of three "improvement" stages at Lam Chamuak: pre-construction, construction, and operations and maintenance. Though there were some disappointments and problems in the participatory approach at Lam Chamuak, the first phase was successful. In general, RID/NESSI, farmers, and ICOs are pleased with the results.

Participants, however, were frustrated that the approach was not been implemented more systematically after September 1986. At some locations in Lam Chamuak, wet season irrigation in 1986 was carried out more smoothly and equitably than in the past, due to the ICOs work with farmers and RID. At other locations, however, problems still remain.

There were some notable successes during 1986. Most importantly, the participatory process was started. Farmers told the project researchers that they like this approach as the ICOs did not try to become their "bosses." ICOs were able to act as catalyst agents or bridges between farmers and RID. Farmers often proved to be "ahead" of ICOs in their organizational work. ICOs admitted that this stimulated them to work even harder with the farmers.

Some effective TOGs were formed at Lam Chamuak. The TOGs established their own rules and regulations, and the rules were enforced by the farmers themselves. Some rules need to be improved, however.

The interaction between farmers and local RID personnel also improved. The NESSI site engineer said that Lam Chamuak is easier to manage than other NESSI projects because of the organizational work. Even the district O&M officer (formerly called the water master) at Lam Chamuak said that in the past, the farmers at the tail of the system never greeted him when he came to the village, but now they do.

Some significant problems, however, also became apparent. There are a number of administrative and budgetary problems within the ICO program. Per diem, salaries, motorcycle repairs, and the like, were nagging problems to the ICOs that took along time to be resolved.

There are also more general problems with administering the program. The ICOs did not know if their participatory strategy would extend through the construction and O&M activities. They wanted to know if there is a future for them as ICOs within RID.

In addition, the ICOs' workplan needs adjustment and coordination with NESSI activities needs to be improved. Determining how fast or how slowly these organizational activities can be done is part of the learning process to develop a Thai farmer organizational strategy.

Another constraint was the minimal outside help that RID received to implement this project. They asked researchers to help them, but the research team tried to remain objective and neutral and avoided direct involvement with implementation. A few important USAID/Thailand personnel are keenly interested in Lam Chamuak, but budgetary restrictions and USAID's development strategy for Thailand preclude their involvement. WMSII provided some support for implementation (hiring NIACONSULT for the ICO training), but its financial and manpower support was not extensive. RID, new to the participatory process, had to rely on its own best judgment, with occasional help from university researchers and WMSII staff during short visits.

There does seem to be great potential for improved system performance at Lam Chamuak, particularly if farmers are actively involved in all stages of improvement. With some degree of continuity in the program, both farmers and RID officials can benefit from this participatory approach.

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