

Farmer-Managed Pump Irrigation Systems: A Case Study of Guimba-Cuyapo Network in the Philippines

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ABSTRACT

THE PAPER PRESENTS the experiences gained and the lessons learned by the National Irrigation Administration (NIA), the Philippines, during the installation in the mid-1970s of some 35 groundwater pump systems; and in the conceptualization of feasible and affordable arrangements for the subsequent turnover of the operation and maintenance (O&M) of the schemes to Irrigators' Associations (IAs). It will also discuss the policies of the irrigation agency on pump irrigation systems, as well as the activities and programs undertaken to assist the IAs, in developing their capacities in managing the pump schemes and improving their water delivery systems, cropping pattern and schedules to overcome the high cost of electric power while still improving their productivity. The success and failure in operating the pumps will also be presented including the strategies adopted by both the NIA and IAs to overcome the problems and constraints.

Specific topics will also be included to present the various arrangements forged by the NIA and the IAs relative to the O&M of the pump systems which will embrace rental arrangements, full management takeover by the IAs and eventual ownership of the pump system. Some critical issues and problems encountered such as drawdown effects on the shallow wells used as domestic water supplies in the nearby communities, collection of water charges, shutting down of pump operations, etc., will also be discussed. Highlights of the paper will likewise include the stringent rules and regulations as well as the strategies adopted by some IAs in their quest to instill discipline among the water users particularly in implementing the planned water delivery and cropping schedules and thereby reducing O&M costs, and in their incessant desire to transform from government-dependent organizations into self-reliant and financially viable associations of formerly rain-fed farmers.

Last, the paper will provide insights into the plans of the NIA and the IAs to initiate programs toward sustaining the operation of the groundwater pump systems and in further improving the productivity of the farmlands served by the pumps. This is in line with the renewed five-year vision of the agency for a dynamic and functioning NIA and IAs working in partnership toward accelerating irrigation development and providing an efficient level of service.

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INTRODUCTION

The Philippines, though strategically located in the humid tropics and endowed with abundant rainfall amounting to about 2,000 millimeters (mm) annually, also suffers from critical water shortages, particularly during the dry season months. Further, the Philippines also faces an average of 20 typhoons per year, about 4 to 5 of which are highly disastrous and usually cause havoc to human lives, livestock, crops and infrastructures. One of the recent major catastrophes in the Philippines was the eruption, about a year ago, of Mt. Pinatubo in Central Luzon. The latest was the deluge which hit Ormoc City and caused the death of about 8,000 people.

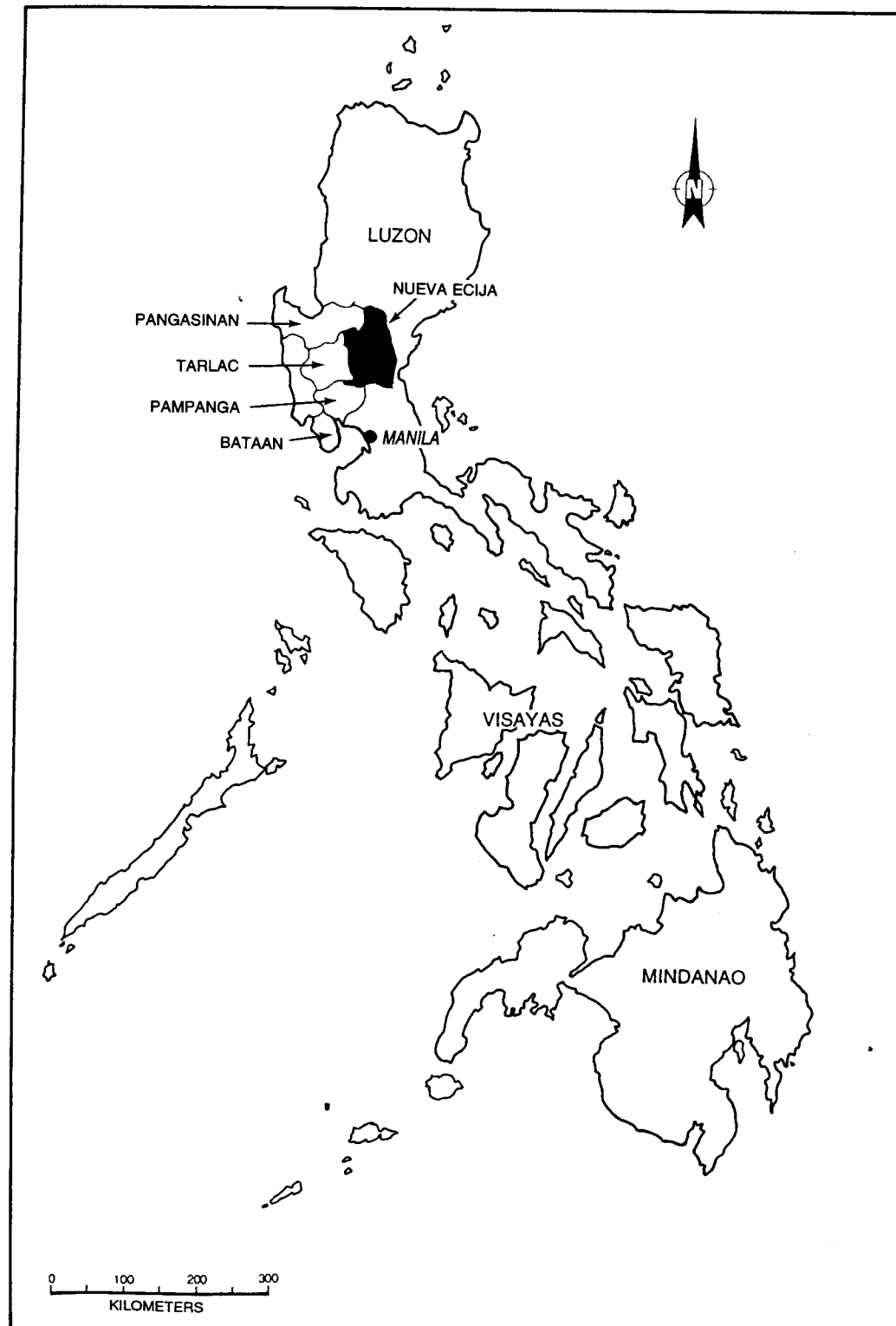
Rice is the staple food in the Philippines. But, the production of this staple and other food crops could hardly meet the demands of the ever-increasing population particularly because of the inept capacity of the Filipino people to cope with the natural disasters and, of course, due to the wide variation in rainfall distribution both in space and time. Almost all of the 2,000 mm average annual rainfall occurs during the months of June to October, considered as the wet season of the country. Very little rain is received during the season when there is abundant solar radiation and very favorable climatic conditions for crop cultivation. Despite accelerated irrigation development during the preceding two decades, there is still a sizable area (about 50 percent of the farmlands identified as suitable for irrigation) that remains to be developed. In some cases, due to the unabated denudation of the country's watersheds, portions of the areas already provided with irrigation facilities could not be supplied with adequate water during the dry season. As a result annual irrigated cropping intensity nationwide averages only 146 percent.

The NIA is the main government agency responsible for irrigation development in the country. By the end of 1991, some 1.5 million hectares (ha), or 48 percent of the 3.13 million ha of potential irrigable area, have been provided with irrigation facilities. Out of this extent 0.63 million ha are covered by national (agency-managed) irrigation systems, 0.71 million ha by communal/farmer-managed schemes and 0.15 million ha by private irrigation systems. In its mandate to accelerate irrigation development in the mid-seventies, the NIA indulged in the exploration of the country's groundwater resources and installed deep well pumps in areas not yet served by gravity irrigation systems. One of the major projects implemented by NIA for this purpose was the Central Luzon Groundwater Irrigation Project (CLGIP) with funding support from the Overseas Economic Cooperation Fund (OECF) of Japan. The project was started in mid-1976 and completed sometime in 1983. Some 215 deep wells were drilled covering about 10,000 ha within five provinces in the Central Luzon Island. This paper will present the project accomplishments and the recent developments in the operation and management of the CLGIP irrigation pumps, installed within the towns of Guimba and Cuyapo in the province of Nueva Ecija.

The CLGIP Pump Systems

The provinces covered by the Central Luzon Groundwater Irrigation Project included Bataan, Tarlac, Pampanga and Nueva Ecija of Region III and Pangasinan of Region I. Out of 215 deep wells developed by the project, 69 were located in Nueva Ecija province. The location of the province of Nueva Ecija is shown in Figure 17.1. The two towns of Guimba and Cuyapo are situated at the northwestern side of the province and are the boundary towns of Nueva Ecija with the provinces of Tarlac and Pangasinan, respectively. Relative to irrigation development, Guimba and Cuyapo have not been recipients of sizable irrigation projects except for the communal or farmer-managed gravity irrigation schemes located along the fringes of small streams and creeks and the deep well pumps installed by CLGIP.

Figure 17.1. Provinces covered by the Central Luzon Groundwater Irrigation Project, the Philippines.



The CLGIP pump schemes are about 100 m deep. The pumps installed have discharge capacities ranging from 1,000 to 1,600 gallons per minute (gpm) each of which is capable of irrigating an area of 40 to 60 ha. These pumps were fitted with electrically driven motors with sizes ranging from 40 to 100 horsepower (hp). The project provided funds for the costs of well exploration and development, pump units and accessories, electric motor, transmission lines, pump house, and the irrigation facilities and appurtenant structures. In each of the wells fitted with pumps, the farmer-beneficiaries were organized into irrigators' associations (locally known as *Damayang Patubigan*) for their eventual takeover of O&M of the schemes after completion of construction.

The Guimba-Cuyapo Pump Network

Within the towns of Guimba and Cuyapo there are a total 33 deep wells, seven of which were drilled under a former United Nations Development Programme (UNDP) assistance and were rehabilitated by the CLGIP, and an additional 26 installed under CLGIP. Twenty seven of these wells are located in Guimba and the rest (6) are in Cuyapo. Of the 33 deep tubewells formerly complete with pumps and accessories, only 27 covering an aggregate total area of about 1,243 ha are currently existing. The operation of two pumps has been temporarily shut down pending agreements with the farmers on the recent policies and requirements of the NIA on pump operation and management.

During project implementation, CLGIP attempted in 1978 to operate the completed pump systems to irrigate the farmlands of the prospective farmer-beneficiaries. The policy then was that each farmer benefitted by the system will pay to the project an irrigation fee of 3 *cavans*⁶⁰ per hectare (150 kg of rough rice) during the wet season and 5 *cavans* per hectare during the dry season. The cost of electric power then was Peso (P) 0.22 per kilowatt-hour (kw-hr) (US\$1.00 = P 27.5 in 1991). After the first wet season of operation an analysis of the CLGIP's pump operation showed that the average O&M cost was about 6.38 *cavans* (about 320 kg) per hectare which was a little more than double the irrigation fee of 3 *cavans*. In the following dry season (November 1978 to May 1979), O&M cost of the pump was determined to be the equivalent cost of 10 *cavans* (500 kg) per hectare.

The high cost of operating and maintaining the pumps, particularly the cost of electric power, prompted the project management to propose an increase in the irrigation fee rates from the former 3 and 5 *cavans* per hectare for the wet and dry seasons, respectively, to 8 and 12 *cavans* per hectare. This proposal, however, was rejected outright by the majority of the pump beneficiaries. In view of the subsidy the project has been providing for the operation of the pumping systems and to ensure the sustainability of irrigation facilities after the folding up of the project, the NIA authorized to implement the proposal prepared by the project for a management turnover. Under this set-up the irrigators' associations or *Damayang Patubigan* were held responsible for O&M of pumps.

Earlier Pump Turnover Schemes

As mentioned above, the high cost of operating the pumps led the CLGIP to devise alternatives and procedures for the turnover of the pump systems to the farmer-beneficiaries through their

⁶⁰ A *cavan* is a volume measure of rice and/or paddy in the Philippines, which has a weight of about 50kg. Paddy (unmilled rice/rough rice) is locally called *palay*.

irrigators' associations (*Damayang Patubigan*). The turnover schemes were formulated with the following considerations:

- i) To operate the pumps with minimal cost on the part of the NIA.
- ii) To make the farmers totally involved in the management and O&M of their pump systems through their duly organized irrigators' associations/ *Damayang Patubigan*.
- iii) To give the farmers a set of alternatives from which they can select a scheme which they think would best suit their situation.

The earlier turnover schemes proposed and implemented by the project were as follows:

- i) *The P 364,000 Amortization Scheme*. Under this scheme, the *Damayang Patubigan* will amortize to NIA a portion of the cost of constructing the pump system within a maximum period of 35 years without interest. Before the system was finally turned over to the association, a preparatory phase of one year had been adopted. During this transition phase, the project operated and maintained the pump system for two cropping seasons at its own expense while the association collected from the farmer-beneficiaries 3 and 5 *cavans* per hectare respectively for the wet and dry cropping seasons. Over and above the total irrigation fee of 8 *cavans* per hectare per annum which the association remitted to the project, the association was also advised to collect from the water users an amount needed to build its capital once it fully takes over the management of the pump system.
- ii) *The P 60,000 Amortization Scheme*. This second scheme was resorted to by the project after giving due consideration to the following: (i) that the 35 years amortization period was considered too long and beyond the economic life of the pumps; and (ii) quick recovery of its capital investment will be highly favorable to the NIA. The alternative proposal required, however, that the association pays to the NIA an advance payment of P 60,000 in the form of equity/counterpart cost to the construction of the pump system. After the takeover, the association shall be fully responsible for the management of the pump system including collection of the needed fees for payment of electric power and other O&M costs.
- iii) *The Equipment Rental Scheme*. Under this scheme the association was fully responsible for the operation and maintenance of the pump system. The association also had to bear all costs related to the O&M of the system. After each cropping season, the association was required to pay the NIA 2 *cavans* per hectare as rental for the use of the pump and the appurtenant irrigation facilities.

During project implementation, most of the associations had been switching from one arrangement to another as the pumps started to suffer from depreciation and some needed part replacements and/or rehabilitation. Another major factor was the constant increases in the electric power rates. If the pumps were continually operated, particularly during the dry season, the cost of operation would have been beyond the economic paying capacity of the water users. While the NIA endeavored to negotiate with the National Power Corporation (NAPOCOR) for special subsidized rates for the pump systems nationwide, NAPOCOR did not consider the request favorably as it was allegedly no longer the sole monopoly holder of the power enterprise. Instead, Electric Cooperatives wielded authority for power distribution to consumers and determined the rates for electric power as well. Owing to the high cost of electric power, incessant increases in the cost of production and insistence of the pump users to plant wetland rice, most of the pump irrigation systems constructed by CLGIP ceased to operate within a few years after the completion of the project in 1983. Closure of most of the pump systems could also be attributed to the limited financial capability of the NIA to continue subsidies that were effective since 1980, compelling

the agency to survive from its own corporate income. The situation was further aggravated by the very low collection of pump amortization and pump rental payments by the associations.

Revitalization of Groundwater Pump Irrigation Systems

Three years after the completion of CLGIP, the supervision of the management of the pump irrigation systems in the Guimba-Cuyapo area was assigned to the Provincial Irrigation Office of Nueva Ecija (NEPIO). At the time of turnover in 1986, only one pump system was found to be satisfactorily operating. Although NEPIO lacked the needed manpower with the necessary skills and expertise in groundwater pump irrigation systems, initially it had to tackle a variety of situations and issues mostly arising out of the complaints from the farmer beneficiaries who were affected by the failure of the NIA to sustain the operation of their irrigation systems. Patiently but cautiously, the NEPIO looked into the similarities and peculiarities of each of the pump systems and the irrigators' associations before it indulged in the formulation of alternative strategies and approaches to revive the operation of the pumps. The office had based its proposals which were subsequently approved by the NIA management for adoption, on the following issues and problems identified by studies prior to the turnover of the systems to the NEPIO:

- i) *High Cost of Electric Power.* While some of the pump systems continue to receive their power supply directly from NAPOCOR, the cost of power had increased almost sevenfold, from P 0.22 per kw-hr in 1976 to the present rate of P 21.50 per kw-hr. On the other hand, the systems which are supplied with electricity from lines under the Electric Cooperatives had to pay P 1.60 per kw-hr initially while this figure now stands at P 3.40 per kw-hr. Under normal operating conditions, farmers who are supplied with electricity from NAPOCOR will have to pay from 6 to 8 cavans per hectare during the wet season and from 12 to 24 cavans per hectare during the dry season. For the pumps serviced by the Electric Cooperatives, the rates could range from 10 to 12 cavans per hectare in wet season and 28 to 34 cavans per hectare in dry season.
- ii) *Size of Landholding.* The amount of money needed by a farmer to support the basic needs of his family is practically the same regardless of the size of his farmholding. The average farm size associated with the pump systems is below 1.0 ha which could hardly produce enough to meet the farmer's basic needs, let alone the settlement of his obligations. One of the significant factors limiting farmer's production capacity is the exorbitant rates to be paid for electric power.
- iii) *Pump Performance.* The pump efficiency, its life span and the benefits that could be derived out of its operation are the major factors to which the beneficiaries pay attention before accepting a full turnover of pump systems from the NIA for O&M. Somehow, there are cases where farmers have accepted pumps due to lack of experience, without giving any consideration to the above factors. It should be noted that the pump sets including the transformers and other important accessories had already been procured even before CLGIP started. In the circumstance, the project was denied the opportunity to effect designing on the basis of actual field requirements, leading to undesirable economic consequences related to O&M of the pump systems.
- iv) *Social Environment and Farmers' Behavior.* Majority of the farmers within the pump systems were envious of the relatively low irrigation fee rates being paid by farmers served by gravity irrigation systems. They can hardly accept the imbalance in irrigation fee rates. They always alleged that besides being deprived of other government programs they were also being required to shoulder the high cost of production within

pump irrigation systems, of which, they alleged the government was to be the eventual beneficiary.

- v) *Functionality of Irrigators' Associations.* Majority of the Irrigators' Associations were found to be passive and with short-term visions. Only a few farmer-leaders were active. Collection of irrigation fees was therefore very low and, in most cases, the total amount collected was insufficient to defray their O&M expenses.
- vi) *Continued NIA Assistance to the IAs.* When the project folded up operations in 1983, only a skeletal force was left behind. Since the terms of these personnel were also co-terminus with the project plantilla, most of them sought transfers to other NIA projects or to other agencies for security of tenure. As a result, the IAs were temporarily denied continued guidance and assistance, particularly, in improving the operation of their respective irrigation systems. One important area of assistance could have been the improvement of the farmers' cropping pattern to include the cultivation of crops other than rice during the dry season to reduce the pumping cost, simultaneously providing incomes equal or even higher than the income derived from mono-cropped rice.
- vii) *Need for Irrigation.* The financially viable systems which continued to operate had active leaders with good foresight and their actions bestowed collective benefits on constituent farmers. Such leaders held the view that "it's better to have a costly water supply to irrigate farms and obtain a good produce than to leave the farms to be served by unpredictable rain water." They further alleged that the operation of pumps will continue without interruption as long as their co-members continue to settle their dues and the NIA or the government continues to provide the necessary guidance and assistance.

The NEPIO Strategies

Armed with sufficient background information from previous research studies and learning from the previous experiences of the former CLGIP, the NEPIO went on to revitalize the operation of the groundwater pump irrigation systems in the Guimba and Cuyapo Network. The office started dialogues with the office bearers and members of the Damayang Patubigan and established initial agreements and probed into the requirements of the associations. One of the important requirements was for the Damayang Patubigan to revitalize its organization; first, by increasing its membership; and second, by improving its rules and regulations relative to the operation of the pumps and the collection of fees.

In carrying out its various tasks, one strategy adopted by the NEPIO was to deputize its cadre of professional irrigation community organizers (ICOs) working in gravity communal irrigation systems, to assist the farmers and the leaders in the pump systems in programming and implementing activities for the strengthening of their respective associations. The major task performed by the ICOs was to work among the individual water users and to explain to them the importance and benefits of having a strong and active association for a sustainable operation of their pump systems. On-site seminars and planning workshops were organized for the farmers and their leaders to come out with their expectations. These forums gave them an opportunity to surface their problems as well as to express their opinions by way of suggestions and recommendations with a view to solving problems. The outcomes of these gatherings were useful to redefine the roles and responsibilities of both the IAs and the NIA toward reviving the operation of the pump systems of those associations willing to abide by the conditions and requirements for

re-operation of their systems. In most cases, these developments led to the revamp of the association's leadership by unanimous action of the farmer-members in re-electing their officers.

In addition to the above activities, the NEPIO provided training in basic leadership development, system management and financial management for the associations which showed a desire and an interest to re-operate their pump systems. The NIA shouldered all the costs for the initial training. But, subsequent training was undertaken by the NIA only at the request of the association and on condition that at least 25 percent of the cost of training will be borne by the latter. This policy of the NIA allows the association to be discreet in the selection of subject matters to be tackled in the training as well as to select participant-farmers at its discretion.

Other activities undertaken by the NEPIO included a joint review with individual associations of their respective cropping calendars (majority of which is the rice-rice pattern), with a view to improving cropping patterns on the following considerations.

- i) Wet season cropping should start in June which marks the onset of the rainy season, in order to maximize the use of rainfall and thereby avoid operating the pumps to supply the water requirements for land soaking and land preparation.
- ii) Land preparation for the dry season cropping should start immediately after the harvest of the wet season crop in order to make use of the residual soil moisture and thereby save on the pumping cost.
- iii) In scheduling/planning the dry season crop, critical well drawdowns (which in most cases start to occur as early as March) should be avoided.
- iv) Harvesting of the dry season crop should not fall within the rainy months in order to ensure good quality of produce, and therefore, better market prices.

One of the major strategies adopted by the farmers to shorten pumping duration in a cropping season is the designation of a contiguous area as their common seedbed/nursery. They supply pump water to this nursery area in advance and simultaneously prepare their seedbeds and sow their seeds. A week before transplanting, water is pumped to supply the requirements for land preparation of the entire pump service area programmed for irrigation for the cropping season.

Recent NIA Policies and Requirements in Reactivating Pump Operation

In the mid-1980s, the dearth of available funds and the mandate of the NIA to survive from its own income almost led the agency to abandon the operation of most of the groundwater pump irrigation systems. Realizing the serious implications this will have on the overall performance of the agency, new stringent policies and requirements were formulated for the reactivation of the operation of schemes. As a result, the pump schemes have been classified as communals and new turnover arrangements have been developed and adopted initially for the Guimba-Cuyapo Network. The two turnover schemes are briefly discussed below:

- i) *Full Turnover/Amortization Scheme.* The management of the pump will be fully turned over to the association after rehabilitation and/or restoration. The association will in turn amortize the total direct cost of rehabilitation of the pump, irrigation facilities and other accessories including the depreciated cost of the well and the pump within a maximum period of 30 years without interest.
- ii) *Amortization cum Rental.* The association will amortize the direct cost of rehabilitating the irrigation facilities. In addition, the association will pay NIA a rental fee of one cavan per hectare per season for the use of the pump.

In addition to the costs of amortization and rental, as the case may be, the farmers/association will likewise bear the cost of power and other O&M costs. An important agency policy which the association must observe is that at least 90 percent of its current account with the NIA is settled before it could be allowed to operate the pump for the succeeding planting season.

The model agreement between the NIA and the associations under the two turnover schemes are given in Annex 1. Besides the provisions of the agreement there are other requirements of the NEPIO which the association must comply with.

Request for Operation

Before the association could even finalize its plans for a particular season it should first secure a duly approved request for operation from the NEPIO. Approval of the request will be based on the following conditions:

- i) That 90 percent of the current account of the association making the request should have been settled with the NEPIO.
- ii) That the association should have coordinated with the power supplier to get an assurance that the transmission lines are fully maintained and are in proper order.
- iii) That the irrigation canals and the appurtenant structures are properly maintained and the necessary repairs have been undertaken.
- iv) That budget planning is done giving due consideration to the projected amount of fees to be collected from the water users.
- v) That an assurance is obtained from the water users through the association that the agreed cropping calendar will be followed and that the deadline dates for the major farming activities will be strictly observed.
- vi) That the individual farmers included in the season's program have duly accomplished and signed the Agreement on Using Pump Water (sample attached as Annex 2) and strictly abide by the policies, rules and regulations of the association. The duly approved agreements on pump water use should be attached to the Request for Operation.

Current Pump Management and Performance

Presently, there are 19 pump systems covering an aggregate area of 935 ha which have been revitalized. The management of these pumps is shared with the associations under the two turnover schemes discussed earlier. To provide continued supervision and assistance to the associations in the O&M of the pumps, the NEPIO deputed six staff members to work full time in the area, namely: 1 engineer; 2 irrigation technicians; and 1 each of bill collector, lineman and electrician. Depending on the desire of the associations, some of the pump operators who were formerly hired by the NIA became employees of the associations.

Primarily due to the high cost of electric power, some of the associations do not operate their pumps during the wet season when the abundant rainfall could be utilized to grow rice crops. In the wet season of 1990, 14 pumps were operated irrigating an area of 634 ha. During the same season in 1991, only 8 pumps operated irrigating an area of 412 ha. In the dry season of the same years, more pumps were operated; all of them (19) in 1990 and 17 in 1991.

The cost of electric power in operating the pumps during the 1990 wet season amounted to an average of ₱ 177.50 per hectare or an equivalent of 0.71 cavan and about ₱ 674 per hectare (2.70 cavans) in 1991. Operation records for the dry season showed an average power cost of ₱ 2,030 per hectare (8.12 cavans) in 1990 and ₱ 4,055 per hectare (16.22 cavans) in 1991. In

addition to the cost of power, the associations also shouldered other O&M costs which included pump amortization/rental which is in the order of about P 285 per hectare per season. Average irrigated rice yields were determined to be 4.17 tons per hectare with a range of 2.67 to 6.15 tons per hectare during the wet season and 4.78 tons per hectare with a range of 3.15 to 5.28 tons per hectare during the dry season. The lower yields obtained during the wet season were due to the occurrence of strong typhoons when the crops were about to be harvested. On the other hand, the low yields in the dry season were a result of the delayed start of farming activities in some of the command areas of the pumps wherein the well drawdowns could no longer supply the amount of water required by the rice crop. Likewise, the delayed start resulted in harvesting the crops within the early months of the rainy season when the rice fields were again full of water and, therefore, the farmers suffered a lot of grain losses due to shattering and rotting.

Although the current performance of the Guimba-Cuyapo farmer-managed groundwater pump irrigation systems may not yet be satisfactory in view of uplifting the socioeconomic plight of the farmer-beneficiaries to the expected standard, some valuable lessons could be learned for the NEPIO experience. These are as follows:

- i) Despite the marginal net incomes obtained by the water users, their will to produce a good crop is a key factor in assuring the continuation of the operation of pumps.
- ii) There is no substitute to a sincere and a dedicated staff whose primary concern is to provide continuous assistance services to the pump associations to improve operations and to sustain the organizational viability.
- iii) The sustainability of the O&M of irrigation systems, especially of the high cost pump schemes, is primarily anchored on the capability of the association leaders in formulating and implementing appropriate policies, rules and regulations, and in harnessing a binding cooperation and a commitment among their members. This is a major component of the NIA's Farmer Participatory Approach Program.
- iv) The farmers, through their associations, are made to become aware of the real financial difficulties experienced by the irrigation agency, the outcome of which could be the permanent closure of their pumps. Therefore, with the help of the association, the farmers will always find ways and means of exploring and making full use of the available resources so as to avert their pumps ceasing operation.
- v) Provided with initial guidance through seminars and workshops, the pump associations of the Guimba-Cuyapo Network have learned to coordinate and deal with other government and nongovernment agencies to obtain equally important support services such as production credit, low cost production inputs and marketing of their farm produce. Some associations even went to the extent of transforming/converting into cooperatives to avail themselves to agricultural support services.

The NEPIO has worked out continuing assistance programs in coordination with other agencies/institutions. The major objective of these programs is to develop the capability of the associations to manage pump water synchronously with their management of agricultural support services, thus improving the production and income of the water users. Therefore, in due course, these farmer-managed groundwater schemes could become financially viable and self-sustaining rural organizations within the towns of Guimba and Cuyapo in the province of Nueva Ecija.

Annex 1

SAMPLE MEMORANDUM OF AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

This Memorandum of Agreement executed and entered into this _____ day of _____, 19 ____ at _____ by and between:

The NATIONAL IRRIGATION ADMINISTRATION, a government-owned and controlled corporation created under Republic Act No. 3601 as amended by Presidential Decree No. 552 with principal office at Epifanio delos Santos Avenue, Diliman, Quezon City, Philippines, represented in this Agreement by _____ in his capacity as _____, hereinafter referred to as NIA;

and

The _____ IRRIGATORS' ASSOCIATION, Inc., an association organized and registered in accordance with the laws of the Philippines with principal office at _____, represented herein by its President, Mr. _____, hereinafter referred to as the ASSOCIATION;

WITNESSETH that:

WHEREAS, the Association has petitioned the NIA to rehabilitate/upgrade GP _____, an electrically-driven deep well pump presently serving agricultural lands for _____, situated in _____;

WHEREAS, the upgrading/rehabilitation of said groundwater irrigation system will reduce operating cost and improve its efficiency, thereby, redounding to the benefit of the Irrigators' Association;

WHEREAS, the upgrading or rehabilitation of said pump system is in line with the NIA's irrigation and institutional development programs;

NOW, THEREFORE, for and in consideration of the foregoing premises, the parties have mutually agreed as follows:

A. RIGHTS AND OBLIGATIONS OF THE NIA

1. The NIA shall provide the necessary funding for the upgrading and rehabilitation of subject pump system classified as communal irrigation system which shall be repaid by the ASSOCIATION for a period of thirty (30) years without interest. The total chargeable or direct cost includes any or a combination of the following:
 - 1.1 Depreciated cost of the groundwater well.
 - 1.2 Depreciated cost of the pump and prime mover.
 - 1.3 Modification of the pumps from two- to one-stage pump.
 - 1.4 Conversion from electric to diesel engine.
 - 1.5 Installation/repair/renovation of pump house, control and monitoring equipment, security fence and other facilities.
 - 1.6 Concrete lining of main farm ditch and installation/repair of turnouts.
2. The NIA shall afford the ASSOCIATION the full amortization scheme wherein the ASSOCIATION will amortize the total cost of rehabilitation of the pump and irrigation facilities, and the depreciated cost of the well and pump equipment.
3. The NIA shall have the right to enter private properties belonging to members of the ASSOCIATION in pursuing the upgrading and rehabilitation of the pump system and shall not be liable, whatsoever, for damages which the ASSOCIATION may sustain on account of said activities unless there is gross negligence or willful acts done by the NIA staff which cause such damages.
4. The NIA shall provide continuing development assistance services to the ASSOCIATION in terms of capability development trainings (leadership, financial management, operation and maintenance and repairs of pump system, crop production, etc.) as well as provision of agricultural support services through formalized tie-ups with government and private entities.
5. The NIA and the ASSOCIATION shall conduct periodic cost and equity reconciliations to determine the direct and or actual chargeable upgrading/rehabilitation cost.

B. RIGHTS AND OBLIGATIONS OF THE ASSOCIATION

1. The ASSOCIATION shall be responsible for securing and complying with all the legal requirements relating to the upgrading/rehabilitation of the pump system such as water permit, legal fees or charges and other similar requirements.
2. The ASSOCIATION shall undertake the negotiation for the acquisition, by whatever mode, of private properties affected by the upgrading/rehabilitation of the pump system.
3. The ASSOCIATION shall contribute as its counterpart in the upgrading/rehabilitation cost the total value of which shall be at least ___ % of the total chargeable cost.
4. The ASSOCIATION shall amortize annually/seasonally to NIA the amount of P_____ until fully paid in consideration of the expenditures incurred for the upgrading of the pump system.
5. The amount of amortization/installment shall be equivalent to the money value based on official government price of P _____ /kg multiplied by the total area benefitted,

- provided that the resulting period of payment does not exceed thirty (30) years. If the computed repayment period exceeds thirty (30) years, the installment payments shall be correspondingly increased so that the same shall be within a period of 30 years from the completion of the pump project rehabilitation.
6. The ASSOCIATION's first installment on the payment to the NIA shall be due immediately after the cropping season following the upgrading/ rehabilitation; but the ASSOCIATION on written request may be granted by NIA a grace period of one season, provided that the entire amount shall be paid within 30 years from the completion of the upgrading/rehabilitation work.
7. Delayed amortization/installment payments shall be subject to an interest of 1/2 of 1% per month on the amount due. for this purpose, a delay of more than 15 days shall be considered as one month while delays of fifteen days or less shall be disregarded.
8. Upon the turnover of the upgraded/rehabilitated system the ASSOCIATION shall operate, maintain and administer the system in accordance with the By-Laws and rules and regulations which the ASSOCIATION shall promulgate with the concurrence of NIA.
9. The ASSOCIATION shall make available to the NIA for training all members and officers responsible for the operation, maintenance and management of the pump irrigation system.
10. The ASSOCIATION shall bear the cost of power bills, services of pump operators and cost of repair and other incidental expenses.
11. During the period of its operation, the ASSOCIATION will charge its members a reasonable rate of irrigation fee to cover all costs of pump operation, amortization payable to NIA, repair and other incidental expenses.

C. TERMINATION OF AGREEMENT

This agreement may be terminated at any time during its effectivity upon a three-month written notice served by the NIA to the ASSOCIATION on any of the following grounds:

- a. Refusal or failure of the ASSOCIATION to settle its scheduled payments;
- b. Failure of the ASSOCIATION to pay its power bills;
- c. Willful neglect of the pump system; and
- d. Violation of any of the provisions of this agreement.

D. SPECIAL CONDITIONS

1. All contracts not entered into by NIA or the ASSOCIATION in relation to this shall be considered as revoked and any payments made thereto shall be considered as rental for the season(s) for which the pump is put into operation.
2. The NIA reserves the right to supervise the activities and operation of the pump system until such time as the consideration of this agreement has been fully paid by the ASSOCIATION.

- 3. The ASSOCIATION shall submit itself to NIA supervisors as a safeguard that the provision of this agreement shall be faithfully observed and the interest of the members protected.
- 4. In the exercise of its supervisory functions, the NIA may audit the books of account and records of the ASSOCIATION and may issue necessary guidelines which will be understood to form part of this agreement.
- 5. In case of pump breakdown, the ASSOCIATION shall shoulder the cost of repair if the amount involved is P 10,000 and less. The NIA shall spend for the repair cost in excess of P 10,000 provided however that the amount shouldered by NIA shall be added to the chargeable cost to be amortized by the ASSOCIATION.

IN WITNESS WHEREOF, the parties to this agreement hereunto signed this instrument this _____ day of _____ 19__ .

NATIONAL IRRIGATION
ADMINISTRATION

_____ IRRIGATORS'
ASSOCIATION

by: _____

by: _____

Annex 2

AGREEMENT ON THE USE OF WATER FROM PUMP NO _____.

I, _____, member of _____ Damayang Patubigan of _____, Nueva Ecija, hereby agree to be included as one of the water users of the said pump system this _____ cropping season and abide by the rules and regulations promulgated by the Nueva Ecija Provincial Irrigation Office which are as follows:

1. That I agree that my farm lot containing an area of _____ hectares be included in the irrigation program of this cropping season;
2. That I agree to follow the Cropping calendar prepared by the NEPIO and the _____ Damayang Patubigan which will start on _____ and will end on _____
3. That I agree to plant early maturing rice varieties so that I could contribute in reducing the cost of electric power;
4. That I promise to pay through the Damayang Patubigan immediately after harvest whatever amount levied against my farm which may include the cost of electric power and pump amortization/rental regardless of whether the pump water has been used or not; and
5. That I authorized the Damayang Patubigan to collect from me the amount due at the time of harvest.

In witness hereof, I hereunto set my signature on this _____ day of _____, 19__.

Signed: _____

ATTESTED BY: _____

Association President

CONCURRED BY:

VICENTE S. FLORES
Provincial Irrigation Officer