FARMER-MANAGED GROUNDWATER PUMP IRRIGATION SYSTEMS
The Case of the Guimba-Cuyapo Network[1]

-ABSTRACT-

Vicente S. Flores and Avelino M. Mejia2

The paper will present the experiences and lessons learned by the National Irrigation Administration (NIA) from the installation in the mid-70's of some 35 ground water pump systems and in the conceptualization of feasible and affordable arrangements for the subsequent turnover of the operation and maintenance 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 develop 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 but still improving their productivity. The successes and failures 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 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 charge, 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 reduce O&M costs, and in their incessant desire to transform from government-dependent organizations into self-reliant and financially viable associations of formerly rainfed farmers.

Lastly, the paper will provide insights on how the NIA and the IAs plan to initiate programs towards sustaining the operation of the groundwater pump systems and in improving further the productivity of the farmlands served by the pumps. This is in line with the renewed 5-year vision of the agency for a dynamic and functioning NIA and IAs working in partnership towards accelerating irrigation development and providing efficient level of services.

Paper presented and discussed at the South Asian Regional Workshop on Groundwater FMIS and Sustainable Groundwater Management to be held on 18-24 May 1992, Dhaka, Bangladesh.

2/ Provincial Irrigation Officer, Nueva Ecija Provincial Irrigation Office and Department Manager, Institutional Development Department, National Irrigation Administration, Philippines, respectively.

INTRODUCTION

The Philippines while it's one of the countries strategically located in the humid tropics and is endowed with abundant rainfall annually still suffers from critical water shortages particularly during dry season months. Besides the 2000-mm of rain it annually receives the country is also endowed with rich natural resources which include, among others, an average of 20 typhoons per year about 4 to 5 of which are highly disastrous and usually wreck havoc to human lives, livestock, crops and infrastructures. One of the recent catastrophes which made again the Philippines famous in the world was the eruption about a year ago of Mt. Pinatubo in Central Luzon. Another most recent one was the deluge which hit Ormoc City and caused the death of about 8,000 people.

Rice is the main staple in the Philippines. But, the production of this main 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 variability 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 which such period is considered as the wet season in the country and very minimal, if at all, during the season when there is abundant solar radiation and the climatic condition is very favorable for crop cultivation. Despite the accelerated irrigation development in the country in the preceding two decades, there is still sizable area (about 50%

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 is only on the average of 146%.

The National Irrigation Administration (NIA) is the main government agency responsible for irrigation development in the country. By the end of 1991, some 1.5 million hectares (48% of the 3.13 million ha potential irrigable area) have been provided with irrigation facilities: 0.63 million ha covered by national (agency-managed) irrigation systems; 0.71 million ha communal/farmer-managed schemes; and 0.15 million ha private irrigation systems. In its mandate to accelerate irrigation development, in the mid-seventies the NIA likewise indulged in the exploration of the country's groundwater resources and installed deepwell pumps in areas not served yet 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 deepwells were drilled covering about 10,000 hectares within five provinces in 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 deepwells developed by the Project, 69 were located in Nueva Ecija province. The location of the province of Nueva Ecija is shown in Figure 1 while that of the towns of Guimba and Cuyapo is shown in Figure 2. These two towns 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 deepwell pumps installed by CLGIP.

The CLGIP pump schemes are about 100 m deep. The pumps installed have discharge capacities ranging from 1,000 to 1,600 gpm each of which is capable of irrigating an area of from 40 to 60 hectares. These pumps were fitted with electrically driven motors with sizes ranging from 40 to 100 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 operation and management of the schemes after completion of construction.

The Guimba-Cuyapo Pump Network

Within the towns of Guimba and Cuyapo there are a total 33 deepwells seven (7) of which were drilled under a former UNDP assistance which were rehabilitated by the CLGIP and an additional of 26 installed under CLGIP. Twenty seven (27) 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 (2) 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[a/] per hectare (150 kg of paddy) during the wet season and 5 cavans per hectare during the dry season. The cost of electric power then was ₱0.22 per kw-hr. 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 rate of 3 cavans. In the following dry season (November 1978 to May 1979), the pump O&M cost was determined to be the equivalent cost of 10 cavans (500 kg) per ha.

---

a/ A cavan is a volume measure of rice and/or paddy in the Philippines which has an equivalent weight of about 50 kg. Paddy (unmilled rice) is called locally as "palay".

The high cost of operating and maintaining the pumps particularly the cost of electric power prompted the Project Management to propose for an increase in the irrigation fee rates from the former 3 and 5 cavans per ha for the wet and dry seasons, respectively, to 8 and 12 cavans per hectare. This proposal, however, received an outright rejection from majority of the pump beneficiaries. Concerned with the amount of subsidy the Project has been providing for the operation of the pumping systems and the sustainability of the arrangements after the folding up of the Project, the NIA authorized the Project to implement the proposal it earlier prepared on the turn over of the pumps to the Irrigators Associations or Damayang Patubigan for operation and maintenance.

Earlier Pump Turnover Schemes

As mentioned above, the high cost of operating the pumps led the CLGIP to devise alternatives and procedures for the turn over of the pump systems to the farmer-beneficiaries through their Irrigators Associations (Damayang Patubigan). The turnover schemes were formulated with the following considerations:

(a) To operate the pumps with minimal cost on the part of the NIA;

(b) To make the farmers through their duly organized Irrigators Associations/Damayang Patubigan totally involved in the management, operation and maintenance of their pump system; and

(c) To give the farmers a set of alternatives from which they can select a scheme which they think best suits their situation.

The earlier turnover schemes proposed and implemented by the Project were:

1. The ₱364,000 Amortization Scheme: Under this scheme, the Damayang Patubigan will amortize to NIA a portion of 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 ha per annum which the association remitted to the Project, the association was also advised to collect from the water users an amount needed to put up its capital once it fully takes over the management of the pump system.

2. The ₱60,000 Amortization Scheme: This second scheme was resorted to by the Project after giving due considerations 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 NIA. The alternative proposal required, however, that the association pays to NIA as upfront payment the amount of ₱60,000 in the form of equity/counterpart cost to the construction of the pump system. After take over, 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.

3. The Equipment Rental Scheme: Under this scheme the association was fully responsible for the operation and maintenance of the pump system. It was also the association which bore all costs associated with the O&M of the system. After each cropping season, the association was required to pay 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 of which needed part replacements and/or rehabilitation. Another major factor was the constant increases in the electric power rates which if the pumps were continually operated particularly during the dry season the cost of operation will be very much 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 allegedly was no longer the sole franchise holder of the power enterprise. It was contended that it was already the Electric Cooperatives which have the authority for power distribution to consumers and that it was the cooperatives who determined the rates of electric power. Owing to the high cost of electric power and the incessant increases in the cost of production inputs coupled with the insistence of the pump users to plant

wetland paddy, within few years after Project completion in 1983, most of the pumps irrigation systems constructed by CLGIP ceased from operating. The shutting down of the operation of most of the pump systems was also due to the limited financial capability of the NIA to provide subsidy particular so that effective 1980 the Agency had 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 the 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. Lacking the needed manpower with the necessary skills and expertise in groundwater pump irrigation systems, the NEPIO had to grapple initially with variety of situations and issues most of which were complaints from the farmer-beneficiaries on 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 into formulating alternative strategies and approaches to revive the operation of the pumps. The office had based its proposals which were subsequently approved by NIA management for adoption on the following issues and problems identified by studies prior to the turnover of the systems to the NEPIO:

(1) High Cost of Electric Power. While some of the pump systems continue to receive power supply directly from NAPOCOR, the cost of power had increased by almost seven folds from ₱0.22 per kw-hr in 1976 to present rate of ₱1.50 per kw-hr. On the other hand, the systems which are supplied with electricity from lines under the Electric Cooperatives have to pay an initial rate of ₱1.60 per kw-hr and which is now ₱3.40 per kw-hr. At normal operating conditions, farmers within pumps supplied with electricity from NAPOCOR will have to pay from 6-8 cavans per ha during the wet season and from 12-24 cavans/ha during the dry season. For the pumps serviced by the Electric Cooperatives, the rates could range from 10-12 cavans/ha

in wet season and from 28-34 cavans/ha in dry season.

(2) 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 in the pump systems is below 1.0 ha which could hardly produce enough for the farmer's basic needs much more to settle his obligations particularly to the high cost of pump system operation which is primarily due to the exorbitant cost of electric power.

(3) Pump Performance. The pump efficiency and its years of useful life including the benefits that the farmers could derive out of its operation are being looked into closely by the beneficiaries before they attempt to accept full turnover of the pump from NIA for operation and maintenance. Somehow, due to lack of experience, the farmers were initially adamant to accept the pumps. It is to be noted at this point that the pump sets including the transformers and other important accessories had already been procured even before CLGIP had started. The condition denied the project the opportunity to fit the designs with the actual field requirements, hence, a critical implication on the eventual economy in the O&M of the pump systems.

(4) Social Environment and Farmers' Behaviour. 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 which they alleged that the government was to be the eventual beneficiary.

(5) Functionality of Irrigators Associations. Majority of the Irrigators Associations were found to be passive and with short-term vision. Only few farmer-leaders were active. Collection of irrigation fees were therefore very low and, in most cases, the total amount collected were insufficient to defray their O&M expenses.

(6) Continued NIA Assistance to the IAs. When the project folded up operations in 1983, only a skeletal force was left behind. Since the items of these personnel were also co-terminus with the project plantilla, most of them sought transfer 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 other crops than rice during the dry season to reduce pumping cost and yet provide the farmers income which could equal or even higher than the income they derive from producing rice.

(7) Need for Irrigation. The systems which continued to operate (financially viable) were found to have active leaders with undeniable good foresight and prospects for the collective benefit of their constituent farmers. They were of the consensus that "it's better to have a costly water supply to irrigate their farms and obtain good produce than to have their farms served by unpredictable rain water". They further alleged that they would continue operating the pumps so 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 with dialogues with the officers and members of the Damayang Patubigan and established initial agreements and requirements with the associations. One of the important requirements was for the Damayang Patubigan to revitalize its organization, first; by improving its percentage of 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 the programming and implementation of activities for the strengthening of their respective associations. Most of the work done by the ICOs were on the groundworking of individual water-users and explaining 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 wherein the expectations of the farmers and their leaders were heard and levelled off; giving them opportunity to voice out their problems as well as their suggestion and recommendations in solving their own problems. The outcomes of these gatherings were the redefined roles and responsibilities for both the IA and the NIA towards reviving the operation of the pump systems of those associations who were willing to abide by the conditions and requirements for re-operation of their systems. In most cases, these undertakings led to the revamp of the association's leadership by a unanimous desire of the farmer-members to hold re-election of their officers: president, vice-president, secretary and treasurer.

In addition to the above activities, the NEPIO likewise conducted for the associations with firmed desire and interest to re-operate their pump systems various types of trainings such as Basic Leadership Development, System Management and Financial Management. For the initial trainings the NIA shouldered all the cost. But, for succeeding trainings the association should forward a request to NIA with the condition that the association will shoulder at least 25% of the training cost. This policy of the NIA affords the association to be discreet in the selection of subject matters to be tackled in the training as well as in the selection of its participant-farmers.

Other activities undertaken by the NEPIO included a joint review with individual associations of their respective cropping calendars (majority of which is rice-rice pattern) with the end view of improving same considering the following factors:

(1) Wet season cropping should start in June which is the onset of the rainy season to maximize the use of rainfall and thereby avoid operating the pumps to supply the water requirements for land soaking and land preparation;

(2) Land preparation for the dry season crop 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 pumping cost;

(3) In scheduling/planning the dry season crop critical well drawdowns which in most pumps start to occur as early as March should be avoided; and

(4) 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 80's, the dearth of available funds and the mandate of 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 operation of the schemes. As a result, the pump schemes have been classified as communals and new turnover arrangements were developed and adopted initially for the Guimba-Cuyapo Network. The two turnover schemes are briefly discussed as follows:

a. 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.

b. 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 (1) cavan/ha/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 cost. An important agency policy which the association must observe is that at least 90% of its current account with NIA is settled before it could be allowed to operate the pump for the succeeding planting season.

The model agreement between NIA and the associations under the two turnover schemes are attached as Annex 1. Besides the provision of the agreements there are other requirements of the NEPIO which the association must comply.

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% 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 with the assurance that the transmission lines are fully maintained and in proper order;

(iii) that the irrigation canals and the appurtenant structures are properly maintained; necessary repairs have been undertaken;

(iv) that budget planning is done considering the projected amount of fees to be collected from the water-users;

(v) that an assurance is obtained by the association from the water users that the agreed cropping calendar will be followed and that the deadline dates for the major farming activities strictly observed; and

(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 polices, 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 earlier discussed. To provide continued supervision and assistance to the associations in the O&M of the pumps, the NEPIO deputed six (6) staff 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 NIA became employees of the associations.

Due primarily to the high cost of electric power, some of the associations don't operate their pumps during the wet season when they could avail of the abundant rainfall to grow their paddy crops. In 1990 wet season, 14 pumps went on operation and irrigated an area of 634 ha. In the same season of 1991, only 8 pumps irrigating an area of 412 ha were put in use. In the dry season of 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/ha or an equivalent of 0.71 cavan and about ₱674/ha (2.70 cavans) in 1991. Operations records for the dry season showed an average power cost of ₱2,030/ha (8.12 cavans) in 1990 and ₱4,055/ha (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 ₱285/ha per season. Average irrigated paddy yields were determined to be 4.17 tons/ha with a range of 2.67 to 6.15 tons/ha during the wet season and 4.78 tons/ha with a range of 3.15 to 5.28 tons/ha 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 pumps wherein the well drawdowns could no longer supply the amount of water required by the paddy crops. Likewise, the delayed start resulted to harvesting the crops within the early months of the rainy season when the paddy fields were again full of water and, therefore, the farmers suffered a lot of grain losses due to shattering and rotting.

While, generally, the current performance of the Guimba-Cuyapo Farmer-Managed Groundwater Pump Irrigation Systems may not yet be satisfactorily gratifying within the point of view of totally uplifting the socio-economic plight of the farmer-beneficiaries, some valuable lessons could be gleaned for the NEPIO experience. These are:

1. Despite the marginal net incomes being obtained by the water users their will to produce a good crop is a key factor for the continuance of the operation of the pumps.

2. There's no substitute to having a sincere and dedicated staff whose primary concern is to provide continuous assistance services to the pump associations improve their operations and sustain the organizational viability of their organizations.

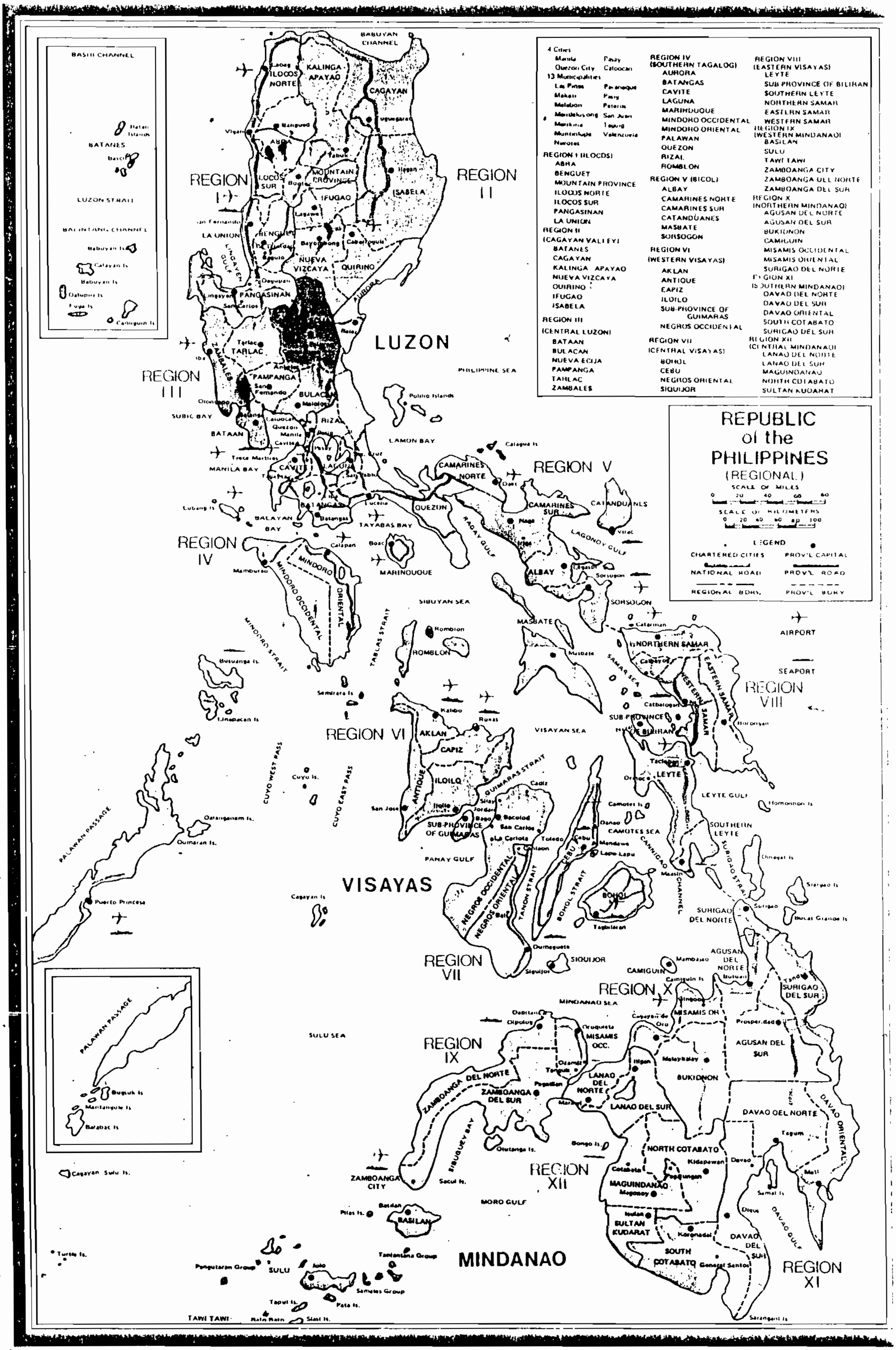
3. The sustainability of the O&M of irrigation systems most especially the high-cost pump schemes is primarily anchored on the capability of the association leaders in formulating and implementing appropriate policies, rules and regulations, and in harnessing a binding cooperation and commitment among their members. Such is a major component of NIA's Farmers Participatory Approach Program.

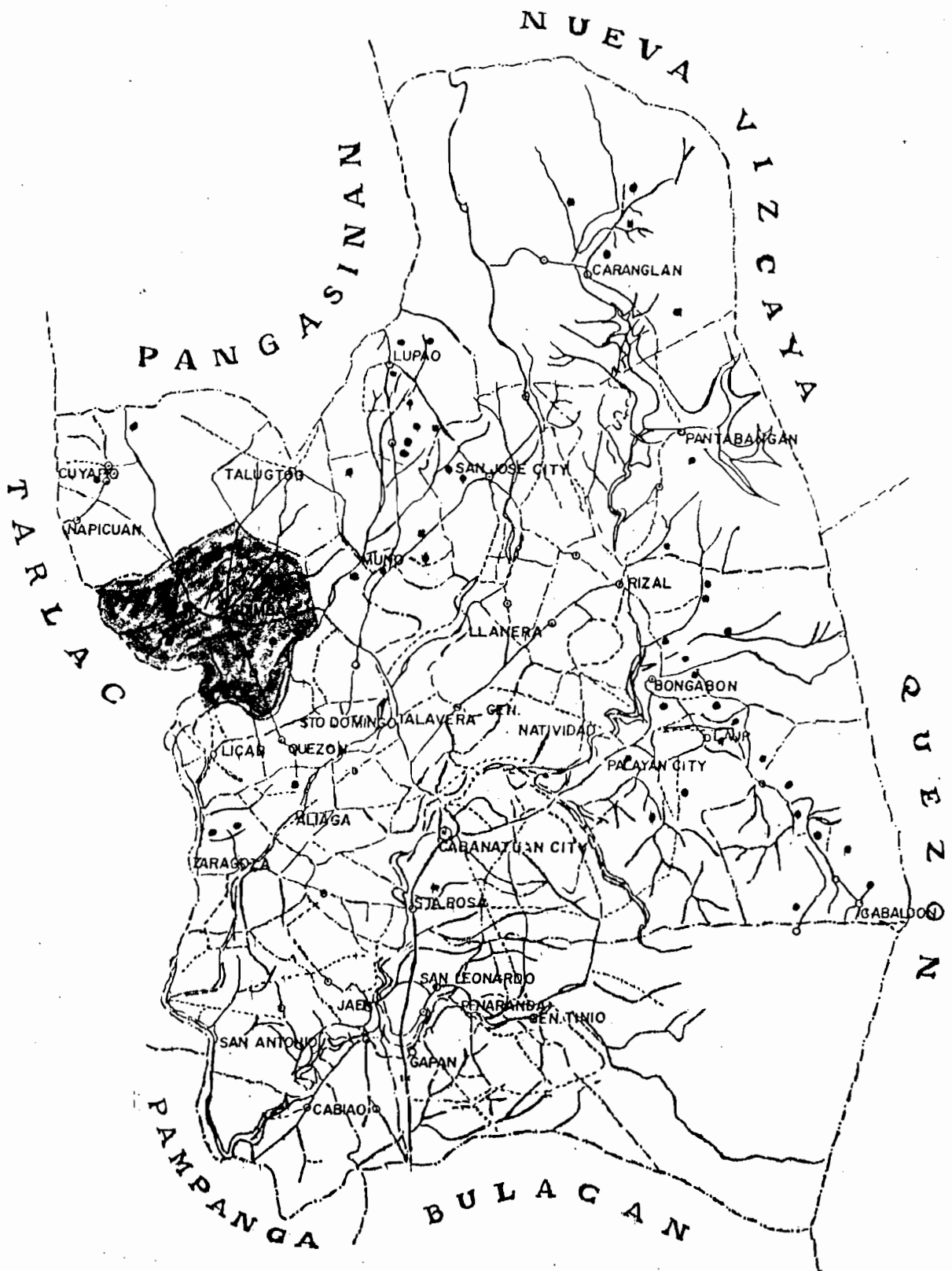
4. The farmers through their associations once made to become aware of the real financial difficulties being experience by the irrigation agency the consequence of which could be permanent closure of the pumps, will always find ways and means of exploring and making full use of their available resources so as to avert their pumps ceasing from operation.

5. 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 non-government agencies for their availment of equally important support services such as production credit, low-cost production inputs and marketing of their farm produce. Some associations even went to extent of transforming/converting into cooperatives to avail of other agricultural support services.

With the continuing assistance programs being worked out by the NEPIO in coordination with other agencies/institutions for developing the capability of the associations in managing pump water synchronously with their management of agricultural support services with the end view of improving collectively the production and income of the water users, in due time, these farmer-managed groundwater schemes could become one of the financially viable and self-sustaining rural organizations within the towns of Guimba and Cuyapo in the province of Nueva Ecija.

Filename : PAPER.DHX
AMM : 10 APR '92


REPUBLIC
of the
PHILIPPINES
(REGIONAL)
SCALE OF MILES
SCALE OF KILOMETERS
LEGEND
CHARTERED CITIES
PROV'L CAPITAL
NATIONAL ROAD
PROV'L ROAD
REGIONAL BDRY.
PROV'L BDRY
AIRPORT
SEAPORT
LUZON
VISAYAS
MINDANAO
REGION I
REGION II
REGION III
REGION IV
REGION V
REGION VI
REGION VII
REGION VIII
REGION IX
REGION X
REGION XI
REGION XII
BABUYAN CHANNEL
BASHI CHANNEL
LUZON STRAIT
PHILIPPINE SEA
SIBUYAN SEA
VISAYAN SEA
SULU SEA
MINDANAO SEA
MORO GULF
PANAY GULF
LEYTE GULF
DAVAO GULF
MANILA BAY
LAMON BAY
TAYABAS BAY
SUBIC BAY
LINGAYEN GULF
RAGAY GULF
LAGONOY GULF
TABLAS STRAIT
MINDORO STRAIT
TANON STRAIT
BOHOL STRAIT
SURIGAO STRAIT
CANIGAO CHANNEL
SAMAR SEA
GUIMARAS STRAIT
CUYO WEST PASS
CUYO EAST PASS
PALAWAN PASSAGE
SIBUGUEY BAY
CAMOTES SEA
ILOCOS NORTE
KALINGA-APAYAO
CAGAYAN
ABRA
ILOCOS SUR
MOUNTAIN PROVINCE
IFUGAO
ISABELA
LA UNION
BENGUET
NUEVA VIZCAYA
QUIRINO
PANGASINAN
AURORA
TARLAC
ZAMBALES
PAMPANGA
BULACAN
BATAAN
RIZAL
CAVITE
LAGUNA
BATANGAS
QUEZON
MARINDUQUE
MINDORO OCCIDENTAL
MINDORO ORIENTAL
ROMBLON
CAMARINES NORTE
CAMARINES SUR
CATANDUANES
ALBAY
SORSOGON
MASBATE
NORTHERN SAMAR
WESTERN SAMAR
EASTERN SAMAR
LEYTE
SOUTHERN LEYTE
AKLAN
CAPIZ
ANTIQUE
ILOILO
NEGROS OCCIDENTAL
NEGROS ORIENTAL
CEBU
BOHOL
SIQUIJOR
SURIGAO DEL NORTE
SURIGAO DEL SUR
AGUSAN DEL NORTE
AGUSAN DEL SUR
CAMIGUIN
MISAMIS OCC.
MISAMIS OR.
ZAMBOANGA DEL NORTE
ZAMBOANGA DEL SUR
LANAO DEL NORTE
LANAO DEL SUR
BUKIDNON
DAVAO DEL NORTE
DAVAO ORIENTAL
DAVAO DEL SUR
NORTH COTABATO
MAGUINDANAO
SULTAN KUDARAT
SOUTH COTABATO
ZAMBOANGA CITY
BASILAN
SULU
TAWI TAWI


NUEVA VIZCAYA
PANGASINAN
TARLAC
PAMPANGA
BULACAN
QUEZON
CARANGLAN
LUPAO
PANTABANGAN
CUYAPO
TALUGTOG
SAN JOSE CITY
NAPICUAN
MUNOZ
RIZAL
LLANERA
BONGABON
STO DOMINGO
TALAVERA
GEN. NATIVIDAD
LICAB
QUEZON
PALAYAN CITY
ALIAGA
CABANATUAN CITY
ZARAGOZA
STA ROSA
GABALDON
SAN LEONARDO
JAEN
PENARANDA
GEN. TINIO
SAN ANTONIO
GAPAN
CABIAO

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 deepwell 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 many sustain on account of said activities unless there is gross negligence or willful act 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 ₱_____ 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 ₱____/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 form 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 for 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 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 guidelines 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 ₱10,000 and less. The NIA shall spend for the repair cost in excess of ₱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

by: _____

_____ IRRIGATORS ASSOCIATION

by: _____

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. And, 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