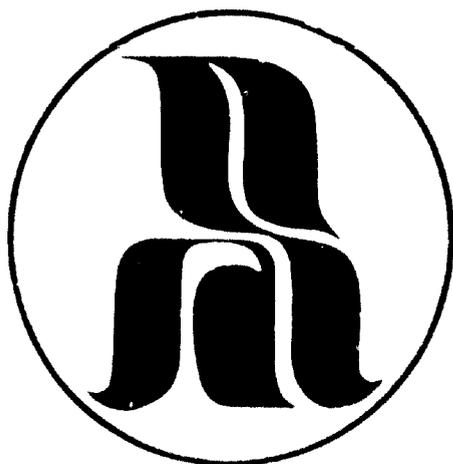
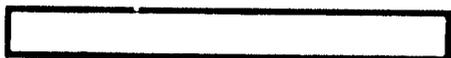


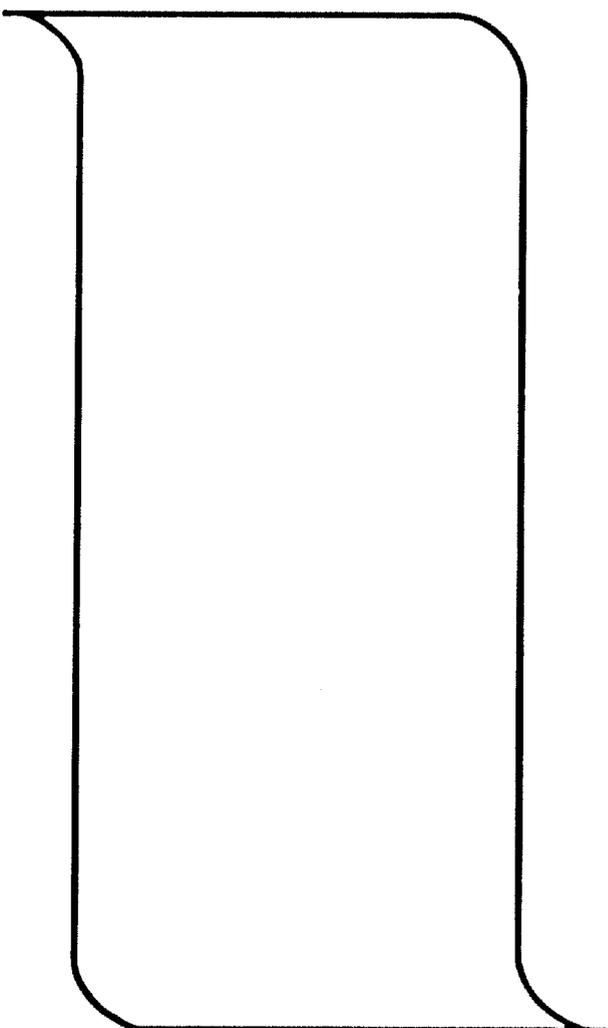
492-T-037



**LIBMANAN/CABUSAO
INTEGRATED AREA
DEVELOPMENT PROJECT**



(LOAN NO. 492-T-037)



**AGRICULTURAL
PROGRESS
REPORT**

REPORT NO.
JUNE 30, 1978

**SUBMITTED BY:
NATIONAL IRRIGATION ADMINISTRATION**

Republika ng Pilipinas
Pambansang Pangasiwaan ng Patubig
(NATIONAL IRRIGATION ADMINISTRATION)
(TANGGAPAN NG TAGAPANGASIWA)
Lungsod ng Quezon

October 30, 1978

The Director
United States Agency for International Development
Ramon Magsaysay Center
1680 Roxas Boulevard
Manila

Attention: Mr. James Baird
General Engineering Officer
USAID, Manila

Re: Libmanan/Cabusao Integrated Area
Development Project (L. n No. 491-T-037)
Agricultural Progress Report as of June 30, 1978

Dear Mr. Baird:

We are pleased to submit for your perusal and evaluation the appended Agricultural Progress Report on the agricultural development and other related activities within the Libmanan/Cabusao Integrated Area Development Project.

We trust that in this report we have sufficiently covered all aspects of project activities in the agricultural sector to supply the necessary information you presently need.

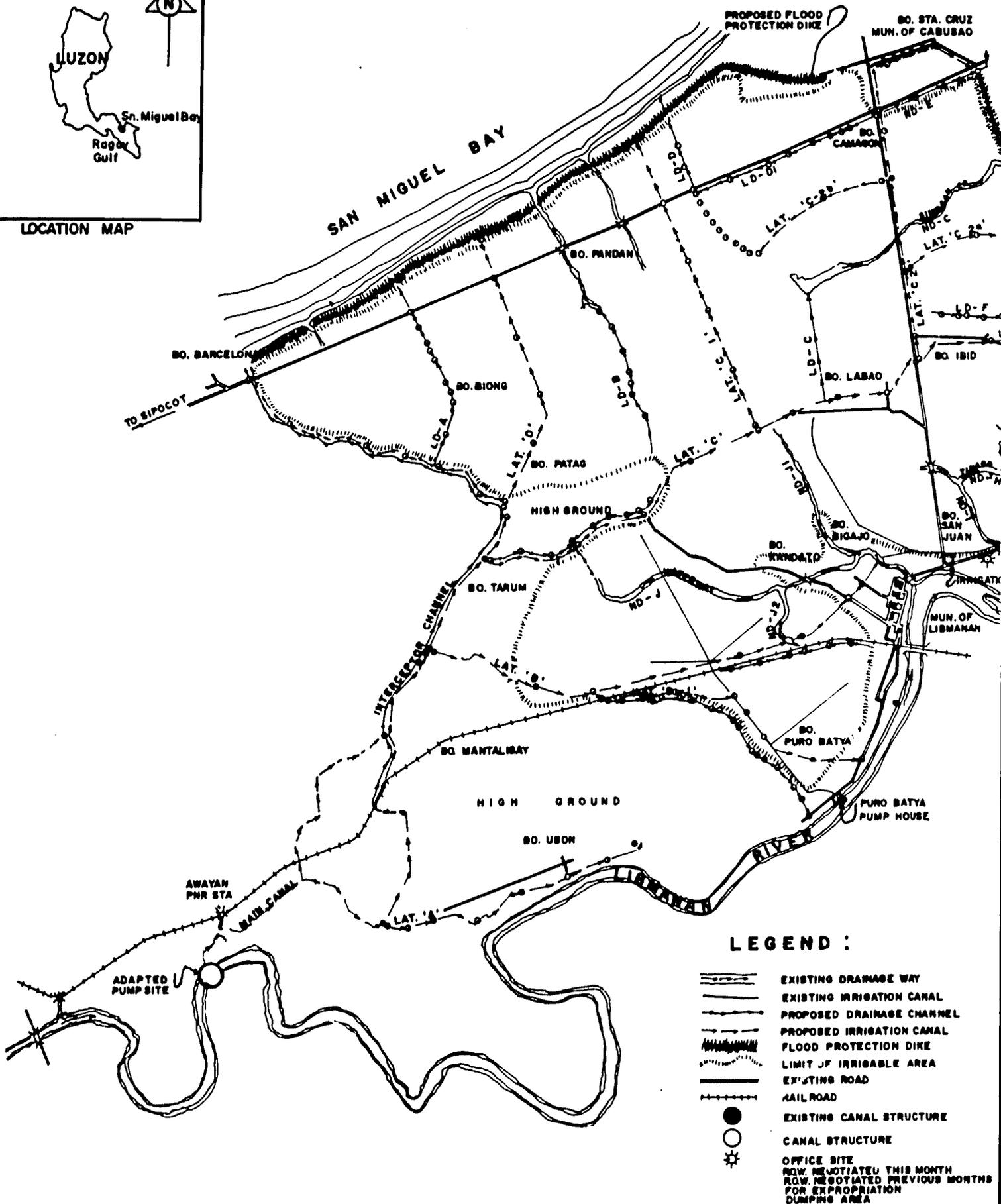
Very truly yours,



CESAR L. TECH
Assistant Administrator

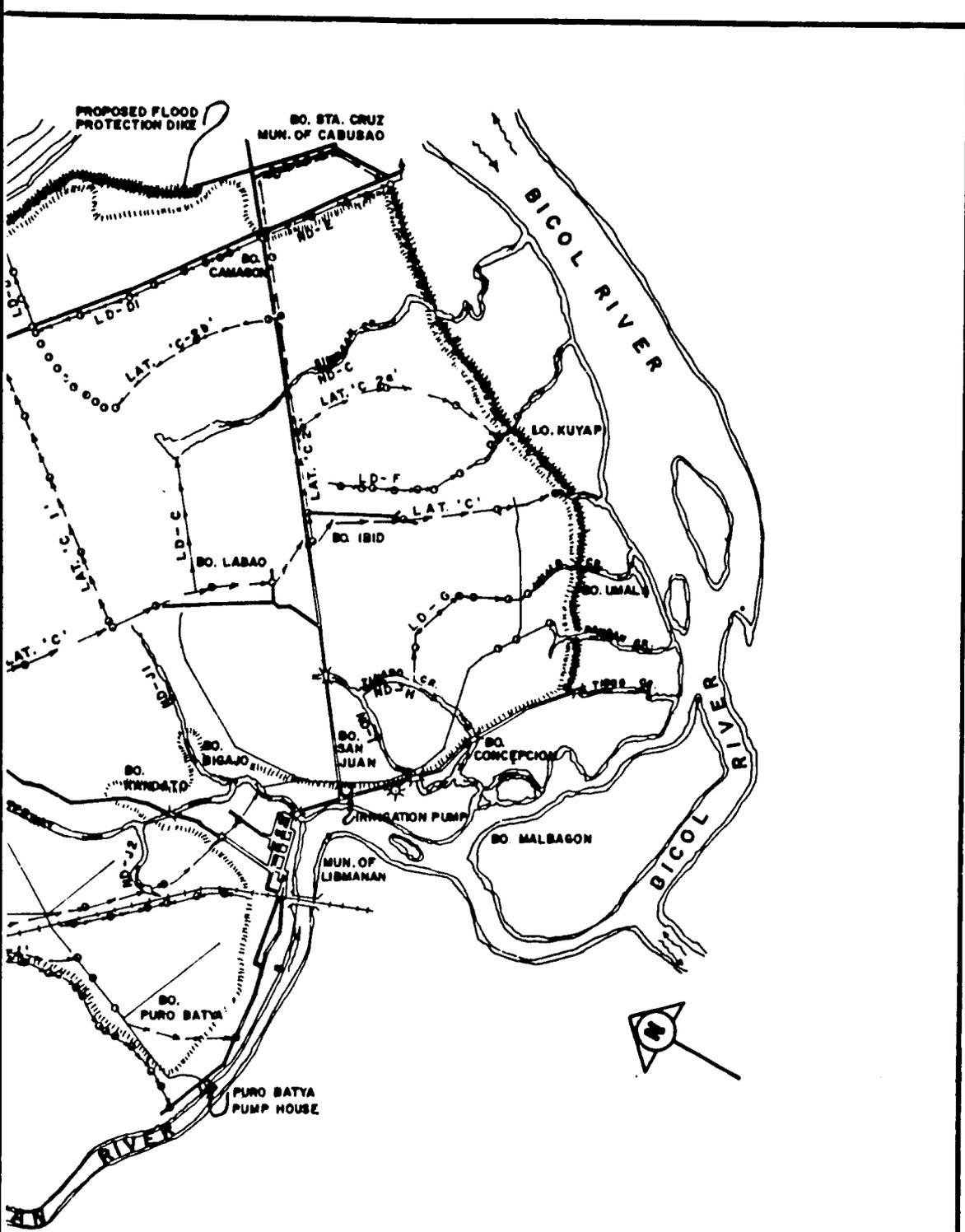


LOCATION MAP

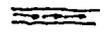
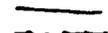
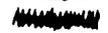
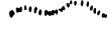
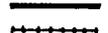


LEGEND :

- EXISTING DRAINAGE WAY
- EXISTING IRRIGATION CANAL
- PROPOSED DRAINAGE CHANNEL
- PROPOSED IRRIGATION CANAL
- FLOOD PROTECTION DIKE
- LIMIT OF IRRIGABLE AREA
- EXISTING ROAD
- RAILROAD
- EXISTING CANAL STRUCTURE
- CANAL STRUCTURE
- OFFICE SITE
- ROW NEGOTIATED THIS MONTH
- ROW NEGOTIATED PREVIOUS MONTHS
- FOR APPROPRIATION
- DUMPING AREA



LEGEND :

-  EXISTING DRAINAGE WAY
-  EXISTING IRRIGATION CANAL
-  PROPOSED DRAINAGE CHANNEL
-  PROPOSED IRRIGATION CANAL
-  FLOOD PROTECTION DIKE
-  LIMIT OF IRRIGABLE AREA
-  EXISTING ROAD
-  RAILROAD
-  EXISTING CANAL STRUCTURE
-  CANAL STRUCTURE
-  OFFICE SITE
-  ROW NEGOTIATED THIS MONTH
-  ROW NEGOTIATED PREVIOUS MONTHS
-  DUMPING AREA

SCALE 1:40,000 MTS.

REPUBLIC OF THE PHILIPPINES
 NATIONAL IRRIGATION ADMINISTRATION
 LIBMANAN / CABUSAO
 INTEGRATED AREA DEVELOPMENT PROJECT
 PROVINCE OF CAMARINES SUR

GENERAL LAYOUT

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NO. IX

INTRODUCTION

The salient features of the season's activities in the Institutional and Agricultural Development Component of Libmanan/Cabusao Integrated Area Development Project (L/CIADP) are the following:

On land tenure improvement, a barangay carpet survey in New Poblacion of the municipality of Cabusao identified 9 prospective lessees and 17 amortizing owners cultivating 9.46 and 21.63 hectares, respectively.

On outreach services to effect countryside development, line agencies in the project area conducted a number of individual farm visits, group meetings and mass information campaigns on supervised farming, crop protection, seed certification, soil analysis and fertilizer application. They were also involved in the organization and training of Samahang Nayan and Kilusang Bayan members and in the development of a viable irrigators service cooperative envisioned to operate and maintain the system upon project completion. In this context, multi-disciplinary sessions ranging from orientation, pre-membership, cooperative development and cooperative management were held.

Continuing research trials adapted to the goals of the project which include fertilizer applied research trial and variety demonstration trial were conducted in three locations of the project.

During this period, the lending institutions provided some P 602,882 to support the farming operations of 290 tillers cultivating about 482 hectares.

Marketing of palay was undertaken by private and government-owned outlets. Likewise, processing and storage facilities that include ricemills, warehouses, dryers and threshers were available to the farmers.

During the period under review, the farmers produced some 88,903 cavans of palay from 1,336.48 hectares with a mean yield of 66.52 cavans per hectare.

I. AGRICULTURAL SUPPORTING SERVICES

A. LAND TENURE IMPROVEMENT

During this period, no changes were reported on the tenure status of farmers in project area compared to the previous season (Table 1). However, the barangay carpet survey conducted in New Poblacion of Cabusao identified 9 prospective lessees and 17 amortizing owners cultivating 9.46 and 21.63 hectares, respectively. Likewise, no certificates of land transfer were issued during this period.

Table 1. Tenure Status of Farmers, L/CIADP Area, as of June 30, 1978

| Tenure | Farm Operators | | Landholding | |
|-------------------|----------------|----------|-------------|----------|
| | Number | Per cent | Area (ha) | Per cent |
| Lessees | 564 | 34.7 | 861.56 | 24.3 |
| Amortizing owners | 851 | 52.4 | 1,748.02 | 49.4 |
| Owner operators | 209 | 12.9 | 931.30 | 26.3 |
| Total | 1,624 | | 3,540.88 | |

Source: MAR Team No. 146

B. EXTENSION SERVICES

The extension activities in the project area were undertaken through an integrated approach involving an inter-agency team formed with the Bureau of Agricultural Extension (BAEx), Bureau of Plant Industry (BPI), Ministry of Local Government and Community Development (MLGCD), Ministry of Agrarian Reform (MAR), Bureau of Soils (BS) and the Economic Development Foundation of the Philippines (EDF). These services include information dissemination on rice production technology, home management, rural youth organization and Samahang Nayan and cooperatives development.

1. Personnel and Working Facilities.

The cooperating agencies have a total of 44 extension workers assigned in

the project distributed as follows: BAEx – 10, MAR - 8, PNB - 7, EDF - 7, BPI - 5, MLGCD - 4, ACA - 2 and BS - 1. Some of the services pursued by these personnel involved individual farm visits, group meetings and mass information (Table 2).

Each participating agency maintains also field offices in the project area while L/CIADP has already completed four of the seven Water Management Technologist working quarters programmed for construction throughout the service area.

Table 2. Extension Support Services, Dry Season 1978

| | Number | Farmers Involved | Intensity (hrs) |
|--------------------------------------|--------|------------------|-----------------|
| Individual farm visits ^{1/} | 24,501 | 24,501 | |
| Group meetings | | | |
| Consultations | 10 | 345 | 14 |
| Farmers classes | 46 | 873 | – |
| Project tours | 1 | 60 | 4 |
| Mass information | | | |
| Semi-technical prints | 155 | 155 | |
| Radio broadcast | 19 | | |

^{1/} Some farmers were visited several times.

Sources: BAEx and BPI

2. Cooperative Development Program

During this period, the fieldmen of the Bureau of Cooperatives Development have been concentrating their efforts on the development of organized Samahang Nayan as well as the training of its members. As of this period, there are 22 SNs organized with a membership of 1,386 of whom 352 are insured with the Cooperative Insurance System of the Philippines (CISP). The Kilusang Bayan, a federation of Samahang Nayons, is an area marketing cooperative based at Naga City bu. with members from the project.

3. L/CIADP Manpower Training and Development Program

During this period some 21 personnel of the Institutional and Agricultural Development Division of L/CIADP participated in various in-service trainings. In addition,

Table 3. Samahang Nayon Organized, As of June 30, 1978

| | Organized | Registered | Membership | Insured with CISP |
|------------------------------|-----------|------------|------------|-------------------|
| Samahang Nayon ^{1/} | 22 | 22 | 1,386 | 352 |
| Kilusang Bayan | 1 | 1 | 1,108 | |

^{1/} There are five SNs organized with 431 members not included in the previous report.

the Chief of the division attended a NIA-UP/ADC sponsored seminar on human relations and management the object of which was to develop the management skills of NIA middle level personnel. A seminar on rice production and leadership was also conducted jointly with the Bicol River Basin Development Project (BRBDP) and University of the Philippines at Los Baños (UPLB) with seven personnel from Operation and Maintenance attending.

Table 4. NIA Manpower Training and Development Program, as of June 30, 1978

| Training | Staff Professional Development | | Operation and Maintenance | | Sponsored by |
|------------------------------------|--------------------------------|------------|---------------------------|------------|------------------|
| | Session | Attendance | Session | Attendance | |
| Rice Production and Leadership | 1 | 3 | 1 | 7 | NIA-BRBDP-UPLB |
| In-Service Training | 3 | 39 | - | - | |
| Project Trainers | 1 | 3 | - | - | I & ADD, L/CIADP |
| Agricultural Development Planning | 1 | 2 | - | - | AD, OSP, NIA |
| Human Relations/Management Program | 1 | 1 | - | - | NIA-UP/ADC |

4. Farmers Organization and Training

To implement the major component of agricultural development in the project, the organization of compact farms along rotation areas of some 50 hectares and cultivated by about 20 to 30 farmers are being undertaken. As of to date, some 38 compact farms are already organized comprising 425 farmers. These compact farms are envisioned to function as farm level units of production, channels of marketing and technical services and financial assistance and social foundations for group action.

The Libmanan/Cabusao Irrigators Service Cooperative (LCISC) is envisioned to take over the operation and management of the system when sufficient capabilities have been developed among the farmers. In the organization of the cooperative, intensive farmers trainings were conducted. These include pre-membership cooperative development, farm management and water management. The training activities were undertaken by the Economic Development Foundation in collaboration with L/CIADP and inter-agency personnel.

During this period, NIA has conducted 42 training sessions while the participating agencies accomplished 87 sessions (Table 5). It would be observed that the number of farmers who participated in these trainings exceeds the total farmer population of the project. This is because several farmers attended two or more training sessions.

C. AGRICULTURAL RESEARCHES

To help increase rice production in the project area, L/CIADP is undertaking applied researches in coordination with other agencies designed to develop a package of technology adapted to the project needs.

During this period, studies on Fertilizer Applied Research Trial and Variety Trials for Insect Resistance were conducted.

1. Fertilizer Applied Research Trial (FART)

Twelve treatments were used in this study viz: 0-0-0 (control), 60-0-0, 60-30-0, 60-30-30, 90-0-0, 90-30-0, 90-30-30, 90-60-60, 12-0-0, 120-30-0, 120-30-30 and 120-60-60. Randomized complete block design with 3 replicates were used.

Table 5. Farmers Training Classes Held, Dry Season, 1978

| Trainings | NIA | | | | Other Agencies | | | | Total | |
|--------------------------------|-------------|---------|-------------|---------|----------------|---------|-------------|---------|---------|------------|
| | Sessions | | Attendance | | Sessions | | Attendance | | Session | Attendance |
| | This Period | To Date | This Period | To Date | This Period | To Date | This Period | To Date | | |
| Project Orientation | 19 | 19 | 657 | 657 | — | — | — | — | 19 | 657 |
| Pre-membership | — | — | — | — | 10 | 10 | 550 | 550 | 10 | 550 |
| Cooperative Development | — | — | — | — | 7 | 7 | 280 | 280 | 7 | 280 |
| Farm Management ^{1/} | — | 8 | — | 318 | 12 | 30 | 386 | 601 | 38 | 919 |
| Refresher Course ^{2/} | — | — | — | — | 3 | 7 | 126 | 126 | 3 | 126 |
| Water Management | 7 | 11 | 233 | 371 | — | 12 | — | 110 | 22 | 481 |
| Leadership | — | 4 | — | 143 | — | 25 | — | 375 | 29 | 518 |
| Management | — | — | — | — | 1 | 1 | 30 | 30 | 1 | 30 |

^{1/} Includes Farm Operation Methods previously reported and farmers classes.

^{2/} Includes reorganization of Barangay Rat and Plant Pest Control

Sources: All participating agencies

Results of the study shows no significant difference among the treatments. However, significant difference were observed among replicates at 5% level. Treatments 120-60-60, 120-30-30 and 90-0-0 gave the highest mean yield of 5.12, 4.99 and 4.71 tons per hectare, respectively. The coefficient of variation is 6.79%.

2. Variety Test for Insect Resistance

Wet season trial on 11 varieties showed promising results as to insect resistance and grain yield per hectare. However, slight infestation of whorl maggots was observed during the early growth stage of the plants. Table 6 shows the grain yield and yield components of the different varieties tested.

Table 6. Grain Yield and Yield Components of 11 Varieties

| Varieties | Ave. Plant Height (cm) | Ave. No. of Productive Tillers | Maturity Days | Grain Yield (tons/ha) |
|--------------------|------------------------|--------------------------------|---------------|-----------------------|
| IR-32 | 94.5 | 14.0 | 123 | 6.04 |
| IR-38 | 97.0 | 14.2 | 110 | 6.33 |
| UPL-RI-1 | 94.0 | 12.5 | 123 | 6.39 |
| IR-42 | 135.0 | 17.7 | 123 | 7.38 |
| IR-2071 625 1252 | 86.5 | 19.0 | 100 | 4.82 |
| S 516 2070 414 3 9 | 102.5 | 18.5 | 115 | 4.83 |
| IR 2863 38 16 2 | 97.5 | 14.7 | 120 | 6.51 |
| 1561 228 3 3 2 | 83.5 | 19.7 | 110 | 5.58 |
| 2071 105 9 1 | 98.7 | 13.2 | 105 | 6.57 |
| 2070 412 5 6 | 101.2 | 14.5 | 115 | 6.38 |
| 2071 586 6 3 | 95.4 | 14.2 | 123 | 6.25 |

D. SEASONAL CREDIT

The sources of financing for the Masagana 99 program include the Rural Bank of Libmanan, the Agricultural Credit Administration (ACA) and Philippine National Bank branches based at Naga City. Of the P602,882 granted to 290 farmers during the period, about 78 per cent was provided by the Rural Bank of Libmanan while the rest was extended by ACA and PNB. Total repayment for loans granted during this season was P30,649, all for loans provided by the rural bank. As for the P6,759,491

credit previously granted only P 515,117 or 7.62 per cent has been settled so far. Because of this low turnover, the Rural Banks of San Fernando, Sipocot and Canaman were discouraged to extend credit during this period.

Despite this disheartening performance on loan repayments, some 1,175 farmers are expected to avail themselves of the supervised financing scheme. Programmed to be financed in the next season is 2,002 ha. requiring some P 2,299,180. Of this amount, about 80 per cent would be shouldered by the PNB and the rest by the Rural Bank of Libmanan.

Table 7. Farmers Served, Area Financed and Amount of Loans Granted, Dry Season, 1978

| | Farmers | Area (ha.) | Amount (pesos) | Percent |
|---------------------------------|---------|---------------|-------------------|---------|
| Rural Bank of Libmanan | 250 | 390.98 | 469,180 | 77.8 |
| Agricultural Credit | | | | |
| Administration | 28 | 66.60 | 106,102 | 17.6 |
| Philippine National Bank | 12 | 24.50 | 27,600 | 4.6 |
| Total | 290 | 482.08 | 602,882 | |

Sources: Rural Bank of Libmanan, Inc., ACA and PNB branches at Naga City

Table 8. Status of Loan Repayment by Lending Institutions, as of June 30, 1978

| Lending Institutions | Loan (pesos) | | Repayment (pesos) | | Per cent | |
|-------------------------|--------------|----------------|-------------------|----------------|-----------|----------------|
| | Previous | This Period | Previous* | This Period | Previous* | This Period |
| Rural Banks | | | | | | |
| Libmanan | 2,372,065 | 469,180 | 247,781 | 30,649 | 10.4 | 6.5 |
| San Fernando | 38,360 | -- | 20,027 | -- | 52.2 | -- |
| Sipocot | 73,801 | -- | 44,186 | -- | 59.8 | -- |
| Canaman | 1,680,615 | -- | 52,426 | -- | 3.1 | -- |
| ACA | 1,188,670 | 106,102 | 9,201 | -- | 0.8 | -- |
| PNB | 1,405,980 | 27,600 | 141,496 | -- | 10.1 | -- |
| Total | 6,759,491 | 602,882 | 515,117 | 30,649 | 7.6 | 5.1 |

* Cumulative

Sources: Credit institutions indicated

E. MARKETING AND PROCESSING FACILITIES

1. Marketing Facilities

Rice harvests in the project area are marketed either to two National Grains Authority or to 79 privately owned buying stations located in the service area. These buying stations, including 139 wholesalers and 77 retailers, all licensed by the NGA, provide a ready market for palay harvests. This contributed to a situation where the price of rice remained within the reach of the masses as supply never disappeared from the market in previous months. The government, through the NGA, maintains a price support for rice at farm level of P 1.10 per kilo with 14 per cent moisture content.

Table 9. Buying Stations and Assembly Points, as of
June 30, 1978

| | Total | Units | |
|-----------------|-------|-------|---------|
| | | NGA | Private |
| Buying Stations | 81 | 2 | 79 |
| Wholesalers | 139 | -- | 139 |
| Retailers | 77 | -- | 77 |

Source: National Grains Authority

2. Processing and Storage Facilities

Storage requirement for the present rice production in the project area is deemed adequately met with 10 warehouses established in the municipality of Libmanan. These storage units have a total capacity of about 64,929 cavans. As the project is gradually developed agriculturally, however, there is a need for more warehousing facilities. Some 54 ricemills, 4 dryers and 13 threshers are also presently available to provide the processing needs of farmers.

Table 10. Processing and Storage Facilities, as of
June 30, 1978

| | Units | Processing Capacity (cav/12 hrs) | Storage Capacity (cav) |
|------------|-------|--|------------------------------|
| Ricemills | | | |
| Cono | 10 | 1,682 | -- |
| Kiskisan | 44 | 2,098 | -- |
| Warehouses | 10 | -- | 64,929 |
| Dryers | 4 | 220 | -- |
| Threshers | 13 | 1,015 | -- |

Source: National Grains Authority

II. AGRICULTURAL PRODUCTION

A. LAND UTILIZATION

1. Volume of Production

The total area planted to rice during the season under review was 1,427.58 hectares. About 301.9 ha were irrigated of which 226, ha. were served by Handong Pump Irrigation System and 75.9 ha by privately owned pumps. The area harvested as of the end of the report period was 1,336.48 with a total production of 88,903 cavans. There was no report on production for the remaining 91.1 ha rainfed. Irrigated farms produced an average of 86.1 cavans per ha while rainfed farms yielded 60.8 cavans.

Table 11. Area Planted to Rice and Total Production, Dry Season, 1978

| | Area Planted (ha) | Area Harvested (ha) | Production (cav) | Yield/ha (cav) |
|-----------|-------------------------|---------------------------|---------------------|-------------------|
| Rainfed | 1,125.68 | 1,034.58 | 62,912 | 60.8 |
| Irrigated | 301.90 | 301.90 | 25,991 | 86.1 |
| Total | 1,427.58 | 1,336.48 | 88,903 | 66.5 |

Sources: Credit institutions and BAEx Technicians

The 1,336.48 ha were cultivated by some 881 farmers whose farming operations were supervised by either BAEx Farm Management Technicians or bank technicians. Some 484.48 ha which were supported with credit produced 39,473 cavans or 81.5 cavans per ha. The rest, 852 ha, which did not receive credit support yielded 49,430 cavans with a mean yield of 58.0 cavans per ha.

2. Costs and Return of Palay Production per Hectare

The cost of production per hectare in irrigated and rainfed farms, as gathered from a farm management survey conducted in the project, was ₱ 1,218 and ₱ 950,

respectively. The total variable cost for irrigated farms was P 785 per hectare and P 483 for rainfed areas. Fixed costs amounted to P 433 and P 467 per hectare for irrigated and rainfed farms, respectively.

In irrigated farms, the average production of 86.1 cavans per ha valued at P4,735 would generate a net return above all costs of P3,517. Considering only the variable costs, the expected benefit would amount to P3,950. On the other hand, rainfed areas with a mean yield of 60.1 cavans per ha valued at P3,334 gives a net return above total costs of P2,394.

Table 12. Production of Farms Supervised with and without Credit Support Dry Season 1978

| | Farmers | Area Planted (ha) | Area Harvested (ha) | Total Yield (cav) | Cav/ha |
|--|---------|-------------------------|---------------------------|-------------------------|--------|
| Supervised and with credit support | 342 | 575.58 | 484.48 | 39,473 | 81.5 |
| Supervised and without credit support | 539 | 852.00 | 852.00 | 49,430 | 58.0 |
| Total | 881 | 1,427.58 | 1,336.48 | 88,903 | 66.5 |

Note; There were 91.1 ha cultivated by 40 farmers supervised by technicians and granted credit but there was no report on production.

Sources: Credit institutions and BAEx technicians

Table 13. Cost of Agro-chemicals Used per Hectare, Dry Season 1978

| | Quantity | | Value (pesos) | | All Farms |
|-----------------------|-----------|---------|---------------|---------|--------------|
| | Irrigated | Rainfed | Irrigated | Rainfed | |
| Fertilizer, bags | 1.92 | 0.35 | 133.39 | 40.59 | 83.48 |
| Insecticide, qtz/bags | 0.79/0.04 | 0.28 | 34.54 | 25.73 | 29.80 |
| Weedicide, qtz/bags | 0.61/0.02 | 0.35 | 18.68 | 14.07 | 16.20 |
| Total | | | 186.61 | 80.39 | 129.48 |

Table 14. Cost of Palay Production per Hectare by Type of Farm, Dry Season 1978

| | Amount (pesos) | | | Per cent |
|-----------------------|----------------|---------|-----------|----------|
| | Irrigated | Rainfed | All Farms | |
| Variable costs | | | | |
| Seeds | 29.35 | 12.20 | 20.12 | 1.9 |
| Fertilizers | 133.39 | 40.59 | 83.48 | 7.8 |
| Insecticides | 34.54 | 25.73 | 29.80 | 2.8 |
| Weedicides | 18.68 | 14.07 | 16.20 | 1.5 |
| Labor | 428.86 | 303.02 | 361.17 | 33.8 |
| Fuel and oil | 65.83 | 40.40 | 52.16 | 4.9 |
| Food for laborers | 62.95 | 44.26 | 52.90 | 4.9 |
| Transportation | 5.95 | 2.97 | 4.35 | 0.4 |
| Interest on loans | 5.56 | — | 5.56 | 0.5 |
| Sub-Total | 785.11 | 483.24 | 625.74 | 58.6 |
| Fixed costs | | | | |
| Land rental | 215.17 | 99.86 | 146.78 | 13.7 |
| Interest on capital | 72.95 | 157.21 | 114.22 | 10.7 |
| Taxes | 2.77 | — | 2.77 | 0.2 |
| Depreciation | 142.13 | 209.60 | 178.42 | 16.7 |
| Sub-total | 433.02 | 466.67 | 442.19 | 41.4 |
| Grand total | 1,218.13 | 949.91 | 1,067.93 | 100.0 |

Source: Farm Management Survey

3. Cost of Production in the Rice Demonstration Center

The production of the 0.6 ha. Rice Demonstration Center during the period under review was 58.5 cavans valued at ₱3,217 with a cost of production amounting to ₱908 resulting to a net income of ₱2,309. On a per hectare basis the net benefit would amount to ₱3,849.

Table 15. Costs and Return of Palay Production per Hectare by Type of Farm, Dry Season 1978

| | Irrigated | Rainfed |
|-------------------------|-----------|----------|
| Ave. Production, cavans | 86.1 | 60.8 |
| Gross value, pesos | 4,734.95 | 3,344.00 |
| Production costs, pesos | | |
| Variable | 785.11 | 483.24 |
| Fixed | 433.02 | 446.67 |
| Total | 1,218.13 | 949.91 |
| Net return, pesos | | |
| Above variable costs | 3,949.84 | 2,860.76 |
| Above all costs | 3,516.82 | 2,394.09 |

Table 16. Costs and Return of Palay Production in Rice Demonstration Center, Dry Season 1978

| Particulars | Quantity/Amount | |
|----------------------------|-----------------|--------|
| Area/ha | 0.60 | |
| Production, cavans | 58.50 | |
| Farm gate price/cav, pesos | 55.00 | |
| Value of production, pesos | 3,217.50 | |
| Production cost, pesos | 908.10 | |
| Land preparation | | 908.10 |
| Transplanting | | 190.00 |
| Weedicide | | 39.55 |
| Pesticide | | 119.00 |
| Fertilizers | | 333.55 |
| Harvesting and threshing | | 130.00 |
| Net income | 2,309.40 | |

B. PEST AND RODENT INFESTATION

During this season, pests, diseases and rodent infestation affected some 500 ha. of growing crops. Most prevalent of the pests are stemborers, caseworms and rice bugs which made some 36 ha. unproductive notwithstanding the coordinated efforts of field technicians, particularly those from BPI and BAEx, and the farmers in controlling these pests. Damage to rice crops due to diseases and rodents was less severe.

Table 17. Incidence of Rice Pests and Diseases and Rodents,
Dry Season, 1978

| Pests | Farmers Involved | Area Infested (ha) | Area Treated (ha) | Area Damaged (ha) |
|----------------------|---------------------|--------------------------|-------------------------|-------------------------|
| Caseworms | 141 | 170 | 170 | 31.6 |
| Stemborers | 95 | 91 | 91 | 4.5 |
| Rice bugs | 35 | 42 | 42 | 0.8 |
| Cercospora leafspot | 27 | 30 | 30 | 2.4 |
| Bacterial leafblight | 20 | 20 | 20 | 0.7 |
| Rice blast | 5 | 2 | 2 | — |
| Rats | 110 | 145 | 145 | 4.6 |

Source: Bureau of Plant Industry