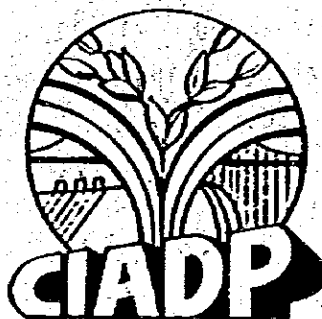


資 料 2

GUIDELINE
OF
AGRICULTURAL PILOT CENTER
IN
CAGAYAN INTEGRATED AGRICULTURAL DEVELOPMENT PROJECT



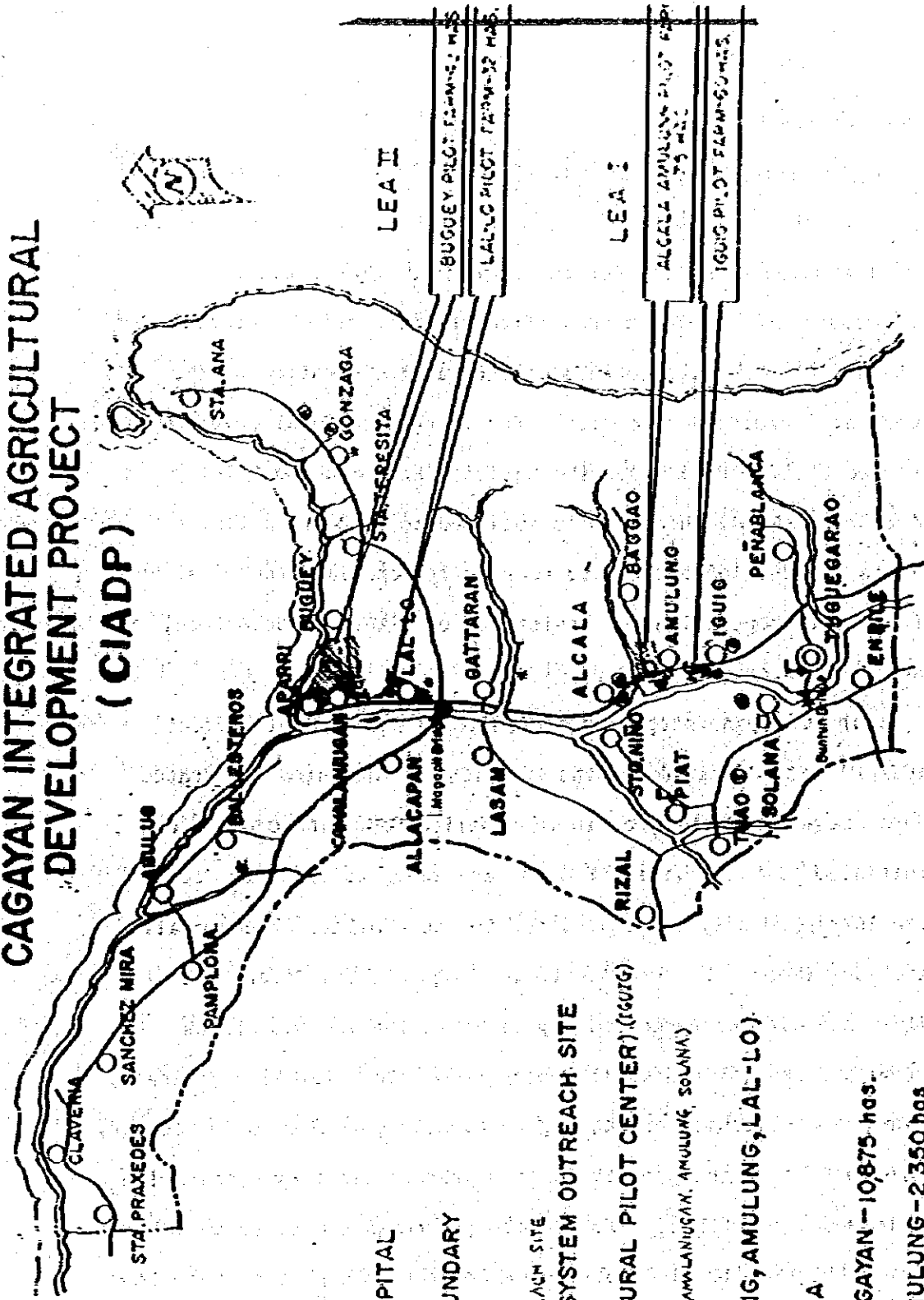
THIRD EDITION - OCTOBER 1982

JICA - CIADP
JAPAN INTERNATIONAL COOPERATION AGENCY
CAGAYAN INTEGRATED AGRICULTURAL DEVELOPMENT PROJECT
October 1980 (Second Edition)
June 1979 (First Edition)

CONTENTS

| | <u>Page</u> |
|---|-------------|
| General Map of Cagayan Integrated Agricultural Development Project (CIADP) | |
| I. Background | 1 |
| II. Objectives and Projected Areas | 4 |
| III. Role of APC | 5 |
| IV. Organization and Function | 7 |
| V. Facilities of APC | 9 |
| Figure 1. Organizational Chart, CIADP-APC | 12 |
| Figure 2. Agricultural Pilot Center Existing Organizational Chart | 13 |
| Figure 3. Crop Research Division | 14 |
| Figure 4. Farm Services Division | 15 |
| Figure 5. Rural Education Division | 16 |
| Figure 6. Agricultural Engineering Division | 17 |
| Figure 7. Equipment Engineering Division | 18 |
| Annex I. Agricultural Pilot Center Complex | 19 |
| Annex II. Agricultural Pilot Center-Main Building (Phase I) | 20 |
| Annex III. APC Model Infrastructure Layout Map | 21 |
| Appendix I. List of Key Personnel of CIADP | 22 |
| Appendix II. JICA Budgetary Contribution in the Supply of Equipment | 23 |
| Appendix III. Rice Yield in LEA | 24 |
| Fertilizer Recommendation Map 1981 (Iguig)..... | 24-1 |
| Cadastral Map: LEA OF Alcala-Amulung | 24-2 |
| Lal-to Pilot Farm | 24-3 |
| Buguey Pilot Farm | 24-4 |
| Appendix IV. Outline of Cagayan Province | 25 |
| Appendix V. Production of Agricultural Commodities in Cagayan | 28 |
| Appendix VI. Livestock Production in Cagayan | 30 |
| Appendix VII. Location of Agro-Meteorology Station in Cagayan | 31 |
| Appendix VIII. List of Vehicles & Other Equipments in APC | 34 |
| Appendix IX. Farm Machinery (APC) | 35 |
| Appendix X. Custom Service by APC (1980) | 36 |
| Appendix XI. Observation and Training in Japan | 37 |
| Appendix XII. Japanese Experts (Long Term) | 39 |
| Appendix XIII. Japanese Experts (Short-Term) | 43 |
| Appendix XIV. Abbreviations | 44 |

GENERAL MAP OF CAGAYAN INTEGRATED AGRICULTURAL DEVELOPMENT PROJECT (CIADP)



LEGEND:

- ROADS
- MUNICIPALITIES
- ◎ PROVINCIAL CAPITAL
- PROVINCIAL BOUNDARY
- ~ RIVER/CREEK
- ▲ APC TRIALS OUTREACH SITE
- ⊙ APC CROPPING SYSTEM OUTREACH SITE
- APC (AGRICULTURAL PILOT CENTER) (IGUIG)
- NIA OFFICE (CAMLANIUGAN, AMULUNG, SOLANA)
- PUMP SITE (IGUIG, AMULUNG, LAL-LO)

PROJECT AREA

1. LOWER CAGAYAN - 10,875 has.
2. ALCALA-AMULUNG - 2,350 has
3. IGUIG 775 has.

⊕ AGRO-METEOROLOGY STATION (TUGUEGARAO, IGUIG, LAL-LO, CAMLANIUGAN, APARRI, PINT)

1. BACKGROUND

The Integrated Area Development is a recent approach towards the upliftment of socio-economic status giving emphasis on the rural community for the correction of gap between depressed and developed areas from the view point of social justice. Supportive to this concept is the creation of the Cabinet Coordination Committee for Integrated Rural Development Projects (CCC-IRDP) under the National Economic and Development Authority (NEDA) which was established to identify potential areas for development and to request appropriate technical and financial cooperation and assistance of either on both local and foreign origin.

The Cagayan Integrated Agricultural Development Project (CIADP) was identified by the CCC-IRDP as the Third Integrated Rural Development Project in the Philippines. The project was initiated with the visit of Secretary Tanco to Japan in September 1973 purposely to request for possible bilateral cooperation and assistance. In response to the request, the Government of Japan had dispatched the survey teams at the various stages through Japan International Cooperation Agency (JICA) and finally a Record of Discussions was signed by both governments in February 1976 to support the project for two year preparatory cooperation. In this Record of Discussions, both governments decided to implement Agricultural Pilot Center Project as a part of the CIADP for the purpose of contributing the modernization of agriculture through the expansion of double-cropping of rice and the increase of agricultural productivity corresponding to the improvement of agricultural infrastructure of the CIADP. Henceafter, the

cooperation period covered by the Record of Discussions was postponed for one (1) year more up to February 1979.

During this time the master plan for Agricultural Pilot Center Project was prepared for the succeeding three (3) years activities and also the necessary infrastructures for the activities of APC such as main office, experiment and pilot farms were completed.

Following this stage, for the full implementation of the CIADP area, a Memorandum of Agreement was concluded by both governments in February 1979 covering the period of three (3) years up to February 1982.

But it is very difficult to attain in a short period the purpose of agricultural development which is strictly influenced to dominate for natural condition and social circumstances.

In the case of the joint evaluation carried out through the both governments on late 1981, it was pointed out the faults of sort of conception and elementary theory, still more, it was taken into consideration the delay of the whole program in CIADP-APC.

By the reason of the above mentioned, it was prolonged simply along the Memorandum of Agreement from February 1982 to March 1984, and then finally, it takes out complete agricultural techniques to APC.

In this new stage, development for Lower Cagayan will be prepared by establishing the site and size of leading Extension Area II through the fundamental studies.

CCC-IRDP was reorganized to NATIONAL COUNCIL ON INTEGRATED AREA DEVELOPMENT (NACIAD) in 1978 with the wider concept in the object area.

11. OBJECTIVES AND PROJECTED AREAS

1. Objectives

The objective of the project is to contribute towards the agricultural development in the Province of Cagayan in general, and the introduction of intensive rice culture in particular, through the facilities of the Agricultural Pilot Center.

Through the agricultural development, the project aims pushing up the situation of farmers, and furthermore contributing the economic and social growth of Cagayan province.

2. Projected Areas

The CIADP covers 14,000 hectares distributed to three (3) areas:

1. Iguig - 775 hectares
2. Alcalá-Amulung - 2,350 hectares
3. Lower Cagayan - 10,875 hectares

In the terms of administration, the following municipalities are included into the projected areas:

Upper Cagayan

1. Iguig

2. Alcalá

3. Amulung

Lower Cagayan

4. Lal-lo

5. Camalaniugan

6. Aparri

7. Buguey

As a strategy for development, each area has Leading Extension Area (LEA) such as sixty (60) hectares in Iguig, seventy five (75) hectares in Alcalá-Amulung, thirty-two (32) hectares in Lal-lo, and forty two (42) hectares in Buguey.

III. ROLE OF APC

In order to supplement the package of improved agricultural technology, support farm resource reinforcements and increase the technical capability of personnel and farmers engaged in the project, the center shall undertake the following:

- a) Trials, field studies and demonstrations centering on improved agricultural techniques at the farm level;
- b) Enhance production of high quality seeds through research, training and demonstration on seed production techniques;
- c) Guidance and advice on post-harvest techniques on rice processing and demonstration thereof;
- d) Guidance and advice for the purpose of strengthening the existence agricultural extension network;
- e) Training of technical personnel and farmer leaders particularly within the project areas;
- f) Planning the transfer of farm inputs such as fertilizers/ pesticides and agricultural chemicals and scheduling the operation, usage and maintenance of farm machineries to be rented out to farmer cooperatives and/or associations in and around the Leading Extension Areas; and
- g) Conduct other educational, promotional, and informational services related to the transfer of packaged technology.

Furthermore, the center shall establish Leading Extension Areas (LEA) in Iguig, Alcala-Awulong, Lal-lo and Buguey and provide the guidance and support for demonstrating improved techniques to farmers. Problems identified in the LEA will be fed back to the APC for in-depth analysis and appropriate actions.

Ultimately, these would contribute to the agricultural productivity and output of rural income through double-cropping.

IV. ORGANIZATION AND FUNCTION

1. Organization

Cagayan Integrated Agricultural Development Project comprises of three (3) components namely: Irrigation component (NIA), Agriculture components (APC) and Supporting Infrastructure component such as rural electrification, barangay road (NEA and others).

APC is under the jurisdiction of CIADP. The organizational relationship of APC to CIADP is shown at Figure I.

The activities of the APC are being implemented by five (5) technical divisions namely: Crop Research Division, Farm Services Division, Rural Education Division, Agricultural Engineering Division and Equipment Engineering Division.

The organization charts of these divisions will be shown at Figure 2 to 7.

2. Function

The function of each division is as follows:

The Crop Research Division is primarily responsible for the development and packaging of location specific for agricultural technology through area-based applied researches.

The Farm Services Division is primarily responsible in the delivery of farm level extension services of APC through the establishment of LEA/pilot farms, demo farms and on farm demonstration trials.

The Rural Education Division is primarily responsible in the training of farmer-leaders and technical staff and in the production of printing materials for extension workers and farmers.

The Agricultural Engineering Division is primarily responsible for the introduction of rice mechanization technology to farmers and in establishing and maintaining facilities of the development stations.

The Equipment Engineering Division is to take charge of the overall management of the Engineering and Equipment of APC, namely: maintenance, repair, operation, utilization, distribution and control.

Through the Agricultural Pilot Center, it is envisioned that farming within the Cagayan Integrated Agricultural Development Project areas will be transformed from the traditionally inefficient practice into an effective productive system.

V. FACILITIES OF APC

APC is composed of main complex building and model infrastructure farm as shown in annex I, II and III.

Main irrigation facilities for Model Infrastructure Farm is described below:

Main Irrigation Facilities:

1. Pumping facilities

| | |
|------------------------|--|
| Submersible Motor pump | - 2 sets |
| Total Head | - 30m |
| Capacity | - $1.38\text{m}^3/\text{min.}$ ($0.016\text{m}^3/\text{sec.}$) |
| Rotation Speed | - 3,500 r.p.m. |
| Output | - 15 Kw |
| Voltage | - 220 V |
| Phase | - 3 phase |
| Current | - 50 A |

2. Water Pipe (from pumping station to water tank)

| | |
|---------------------------------|---------------------------------|
| Pipe Vinyl Pipe Rubber Joint | - \emptyset 200 l = 5.00 |
| Pipe Length | - 770 m |
| Designed Water Quantity | - $0.016\text{m}^3/\text{sec.}$ |
| Air Valve | - 2 (Sta. 6.38 Sta. 470.37) |
| 90° Curve Pipe | - 3 (Ip1, Ip10, Ip11) |
| 5 5/8° Curve Pipe | - 1 (Ip4) |
| 45° + 22½° Curve Pipe | - 1 (Ip6) |
| 45° + 11½° Curve Pipe | - 1 (Ip7) |
| 22½° + 11½° Curve Pipe | - 1 (Ip8) |
| 45° Curve Pipe | - 1 (Ip9) |
| 11½° Curve Pipe | - 1 (Ip12) |

3. Water Tank

- Capacity - $3.05 \times 3.00\text{m} \times 3.00\text{m} = 31.5\text{m}^3$
- Water Capacity - $3.50\text{m} \times 3.00\text{m} \times 2.68 = 27.09\text{m}^3$
- Material of Tank - Fiber Glass Plastic Board
- Connecting Material - Stainless Bolt & Special Rubber Pkg.
- Connecting Pipe - $\phi 200\text{m}$ D. gallding steel pipe
flexible joint $\phi 200\text{m}$ 4 pieces
Sluice Valve $\phi 200\text{m}$ 1 piece

4. Water Pipe in Farm

- 200m Vinyl Pipe
- Water pipe - Inside diameter
- Length of water pipe - 912m
- Water concrete flume - $0.40 \times 0.30\text{m}$ 156m
Spillway $\phi 0.30\text{m}$ 10m
- Main Drainage - Width 2.50m Depth 1.00m 401m
- Sub Drainage - Width 1.90m Depth 0.70m 301m
- Lateral Drainage - Width 0.30m Depth 0.60m 500m
- Underdrainage - $\phi 50\text{m}$ 3,753m

5. Diversion and Others

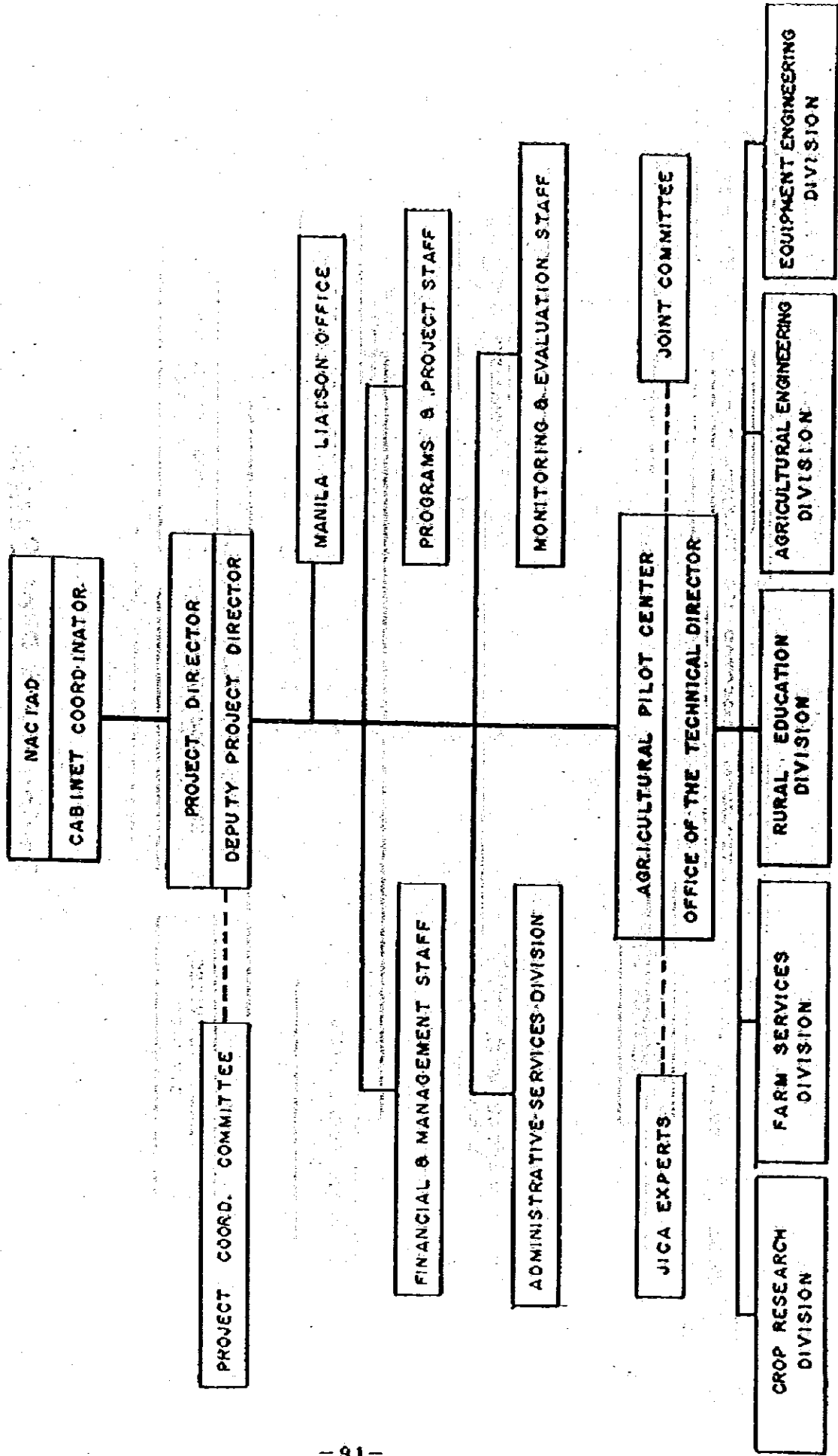
- A Type
- B Type
- C Type
- Concrete Water Pipe
- In Farm $\phi 100\text{m}$ Valve
- Discharge Manhole
- Drainage Pipe of Residual water $\phi 75$ Vinyl Pipe
- Adverse underdrainage $\phi 50\text{m}$ 1 = 6.00m

6. Drainage Pump

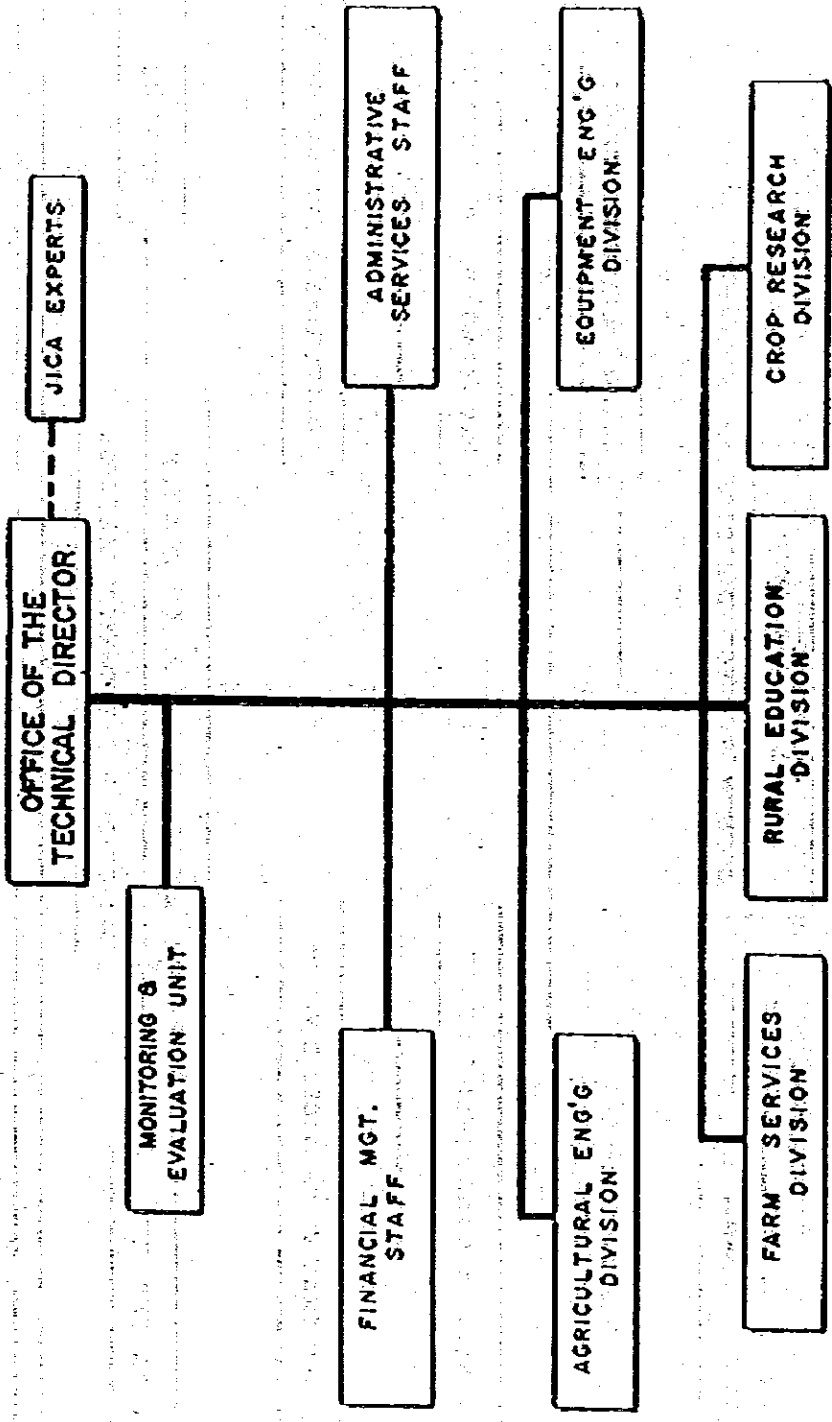
| | | | |
|------------------------------------|---|------------------------|-------------------|
| Pump | - | 0200 m | 2 sets |
| Output | - | 3.7 KW | |
| Phase | - | 3 phase | |
| Voltage | - | 220 V | |
| Rotation Speed | - | Motor-1800 r.p.m. | pump - 925 r.p.m. |
| with automatic operation apparatus | | | |
| Head | - | 3.50m | |
| Capacity | - | 3.6m ³ /set | |

**ORGANIZATIONAL CHART
CIADPO-APC
CY-1982**

(Figure 1)



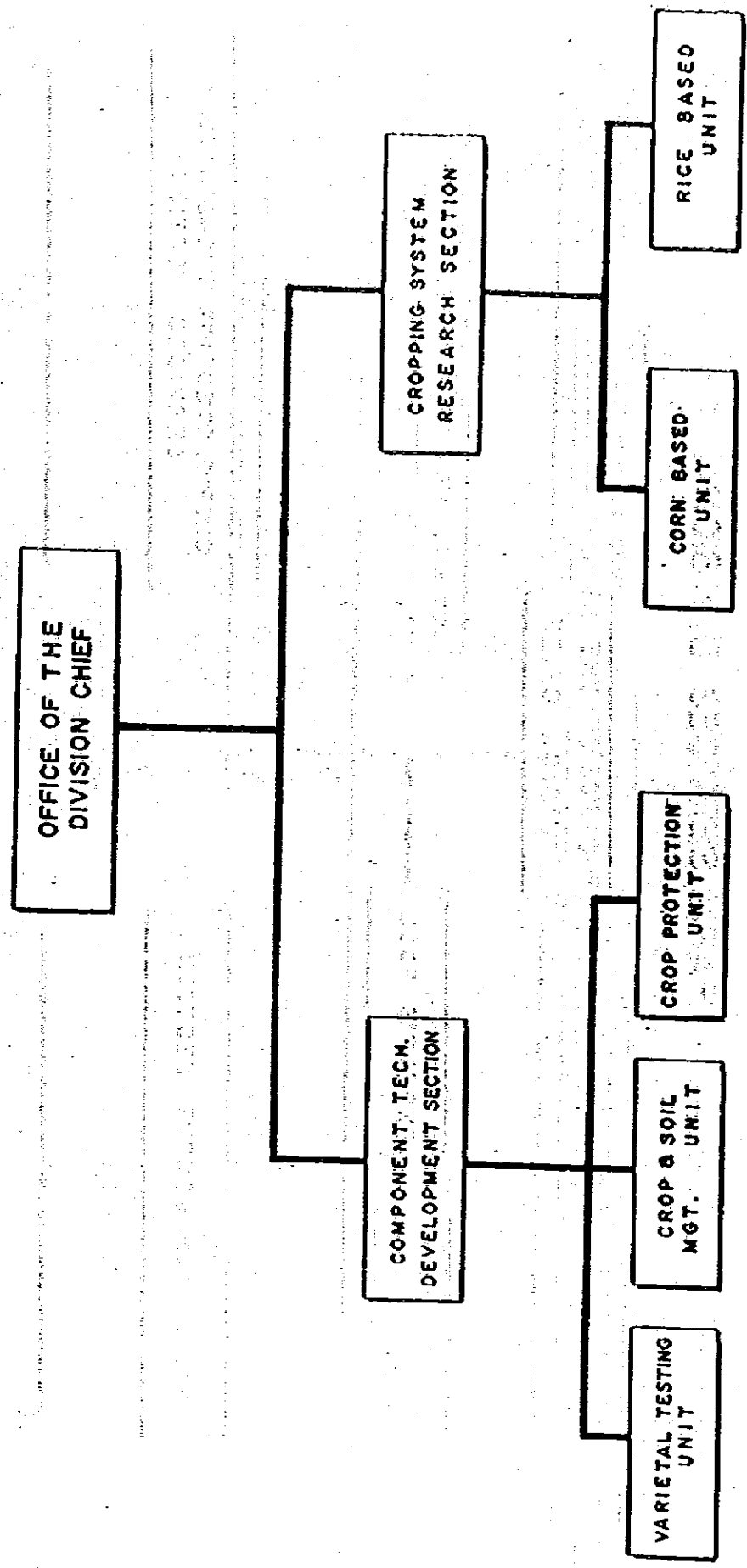
(Figure 2)



Agricultural Pilot Center EXISTING ORGANIZATIONAL CHART

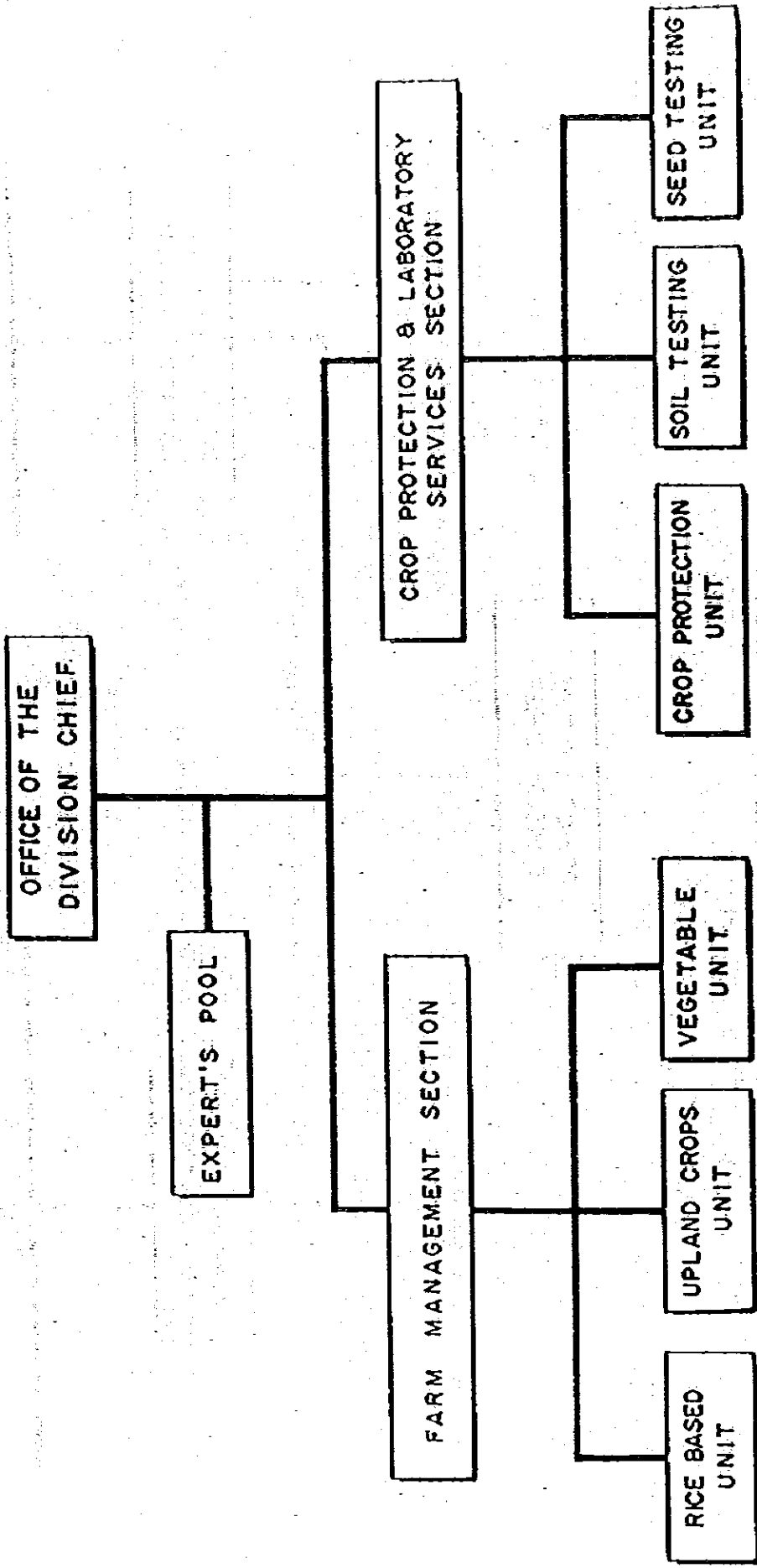
CROP RESEARCH DIVISION

(Figure 5)



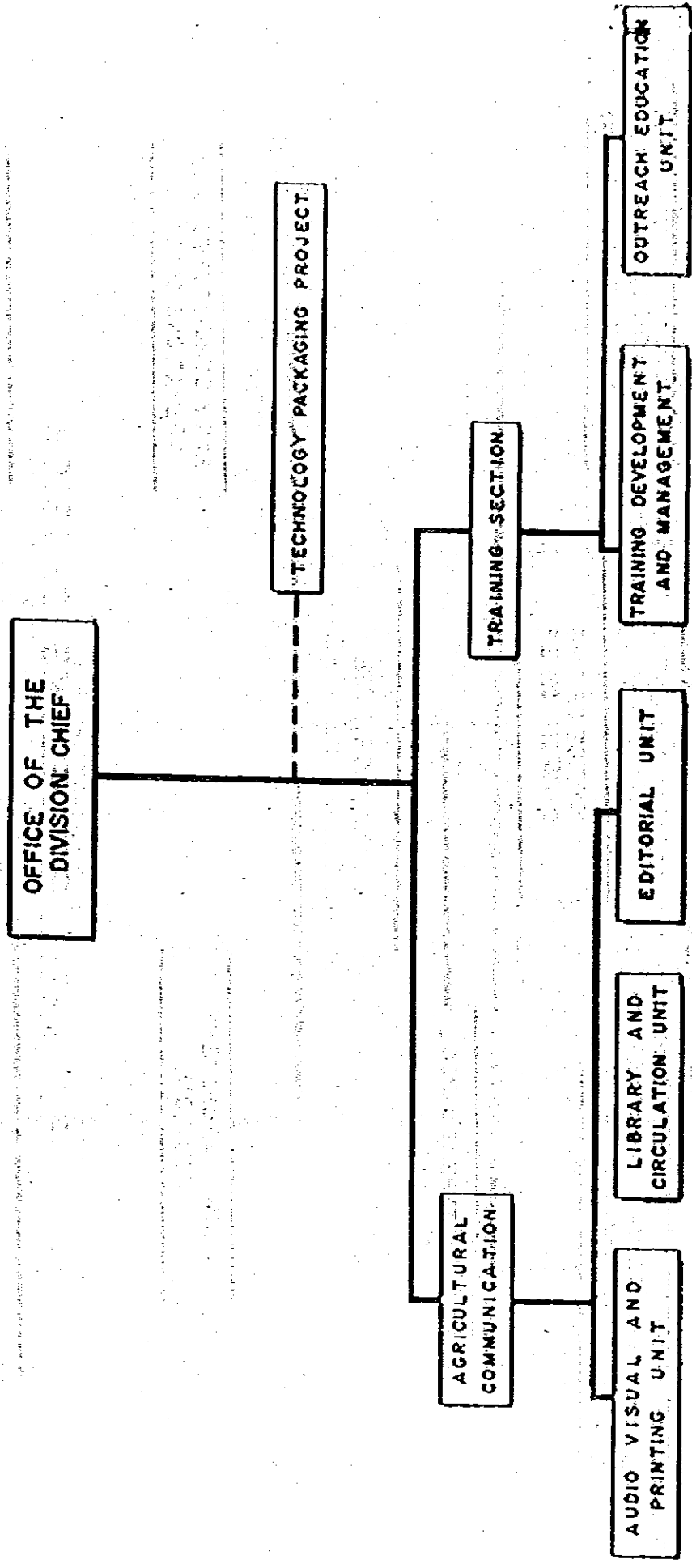
(Figure 4)

FARM SERVICES DIVISION



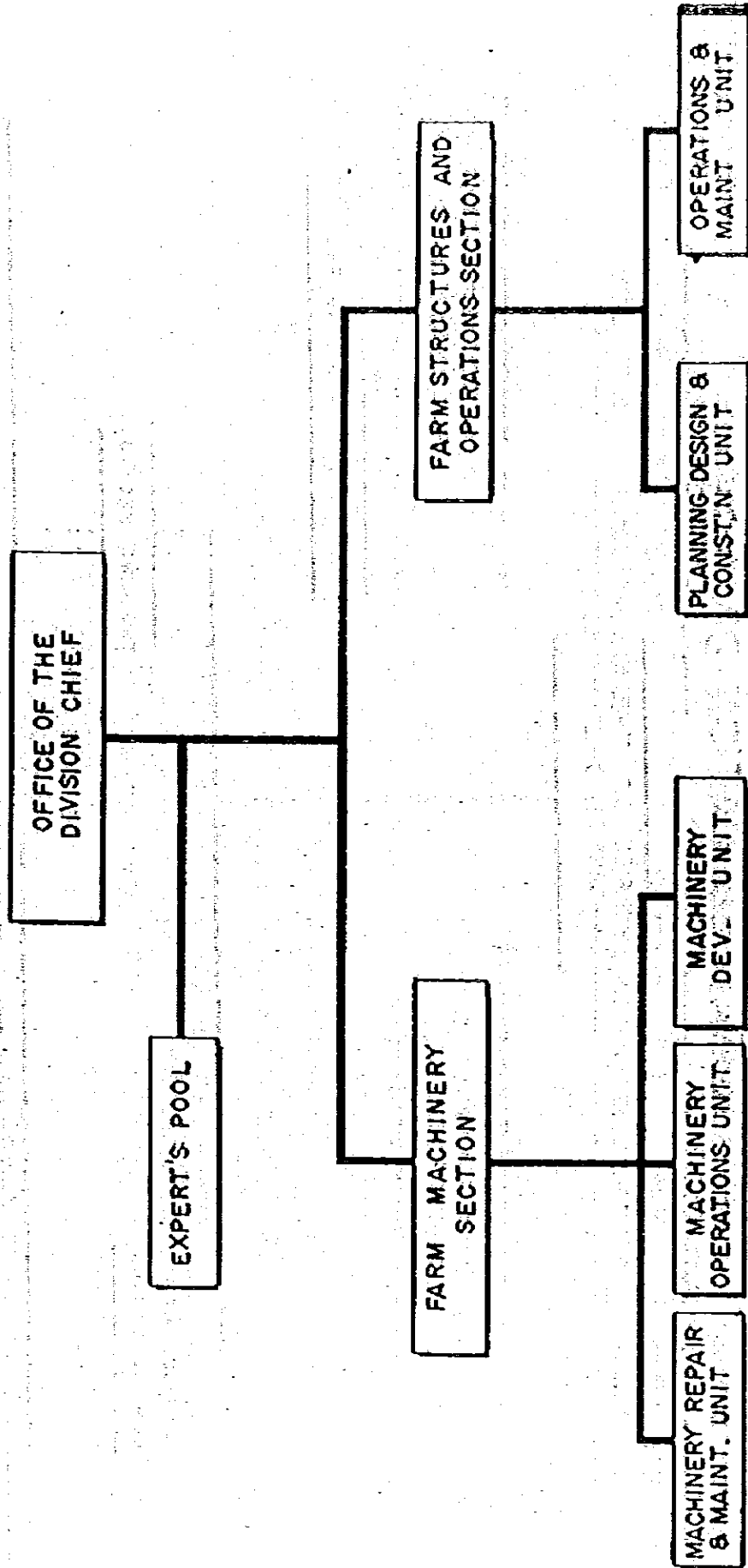
RURAL EDUCATION DIVISION

(Figure 5)

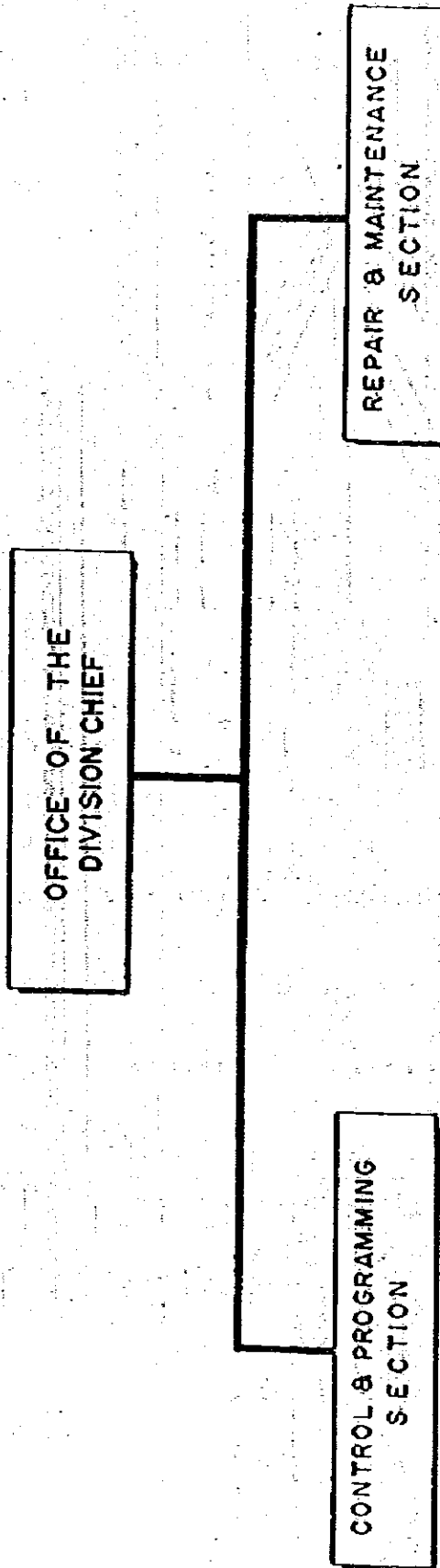


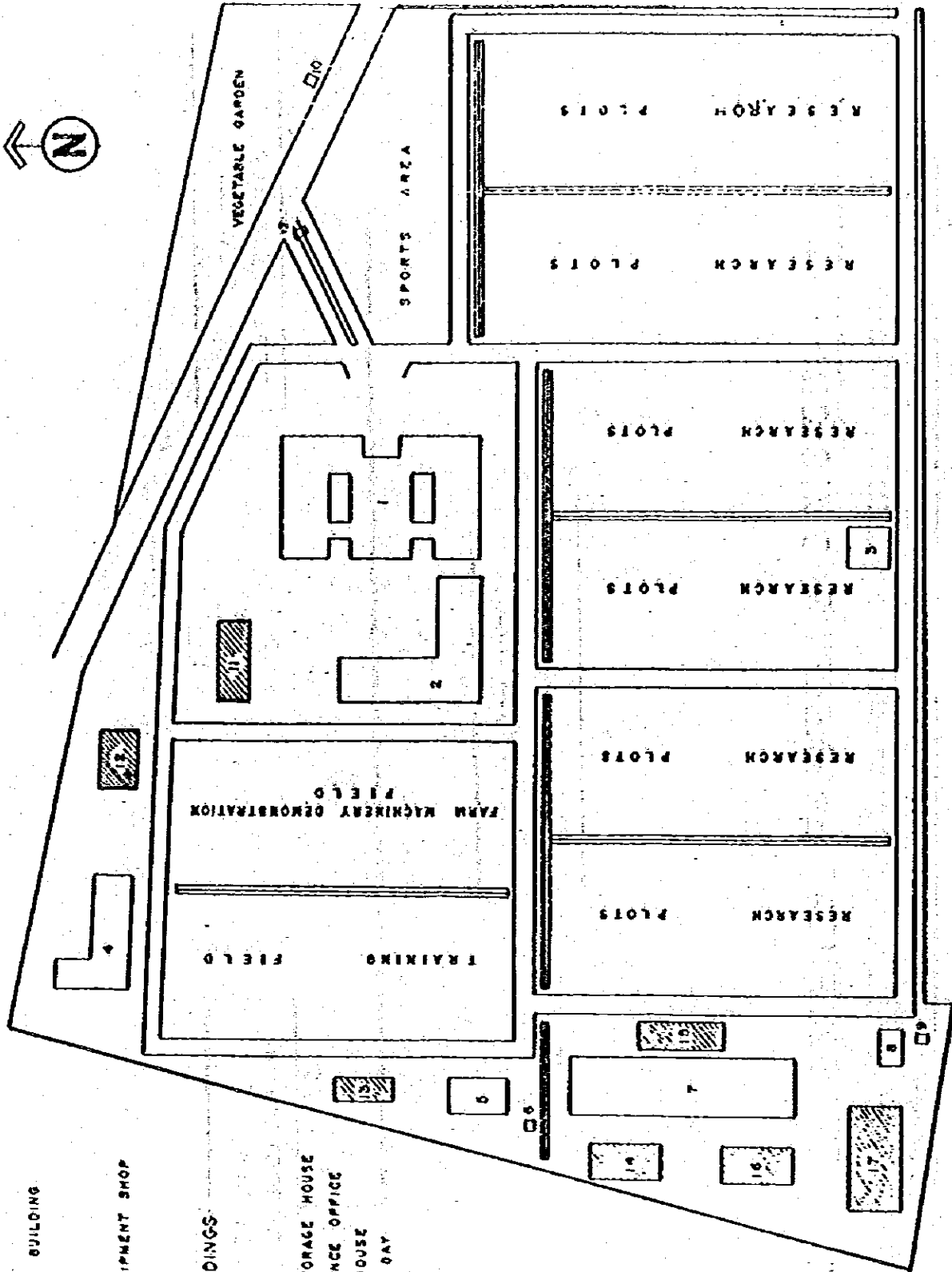
(Figure 5)

AGRICULTURAL ENGINEERING DIVISION



EQUIPMENT ENGINEERING DIVISION

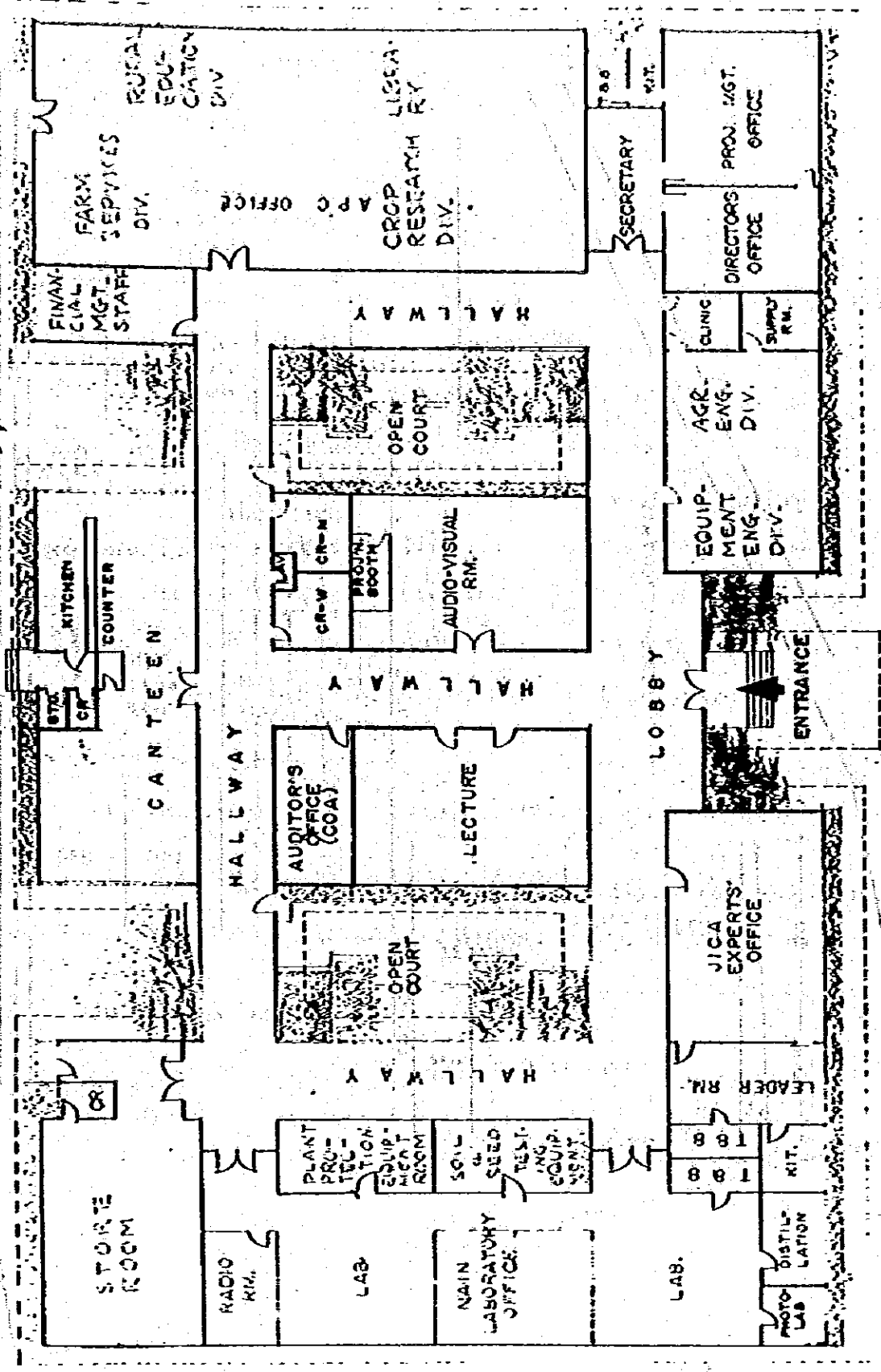




LEGEND:

- 1. A.P.C. MAIN BUILDING
- 2. LABORATORY TRAINING BUILDING
- 3. AGRO-MET STATION
- 4. DORMITORY
- 5. DUPLEX
- 6. DRAINAGE PUMP
- 7. HEAVY & LIGHT EQUIPMENT SHOP
- 8. GASOLINE STATION
- 9. WATER TANK
- 10. NURSERY
- 11. PROPOSED BUILDINGS
- 12. GREEN HOUSE
- 13. DUPLEX
- 14. STAFF QUARTER
- 15. FARM MATERIALS STORAGE HOUSE
- 16. EQUIPMENT MAINTENANCE OFFICE
- 17. DRYING & MILLING HOUSE
- 18. WORKSHOP & REPAIR BAY
- 19. GUANO HOUSE

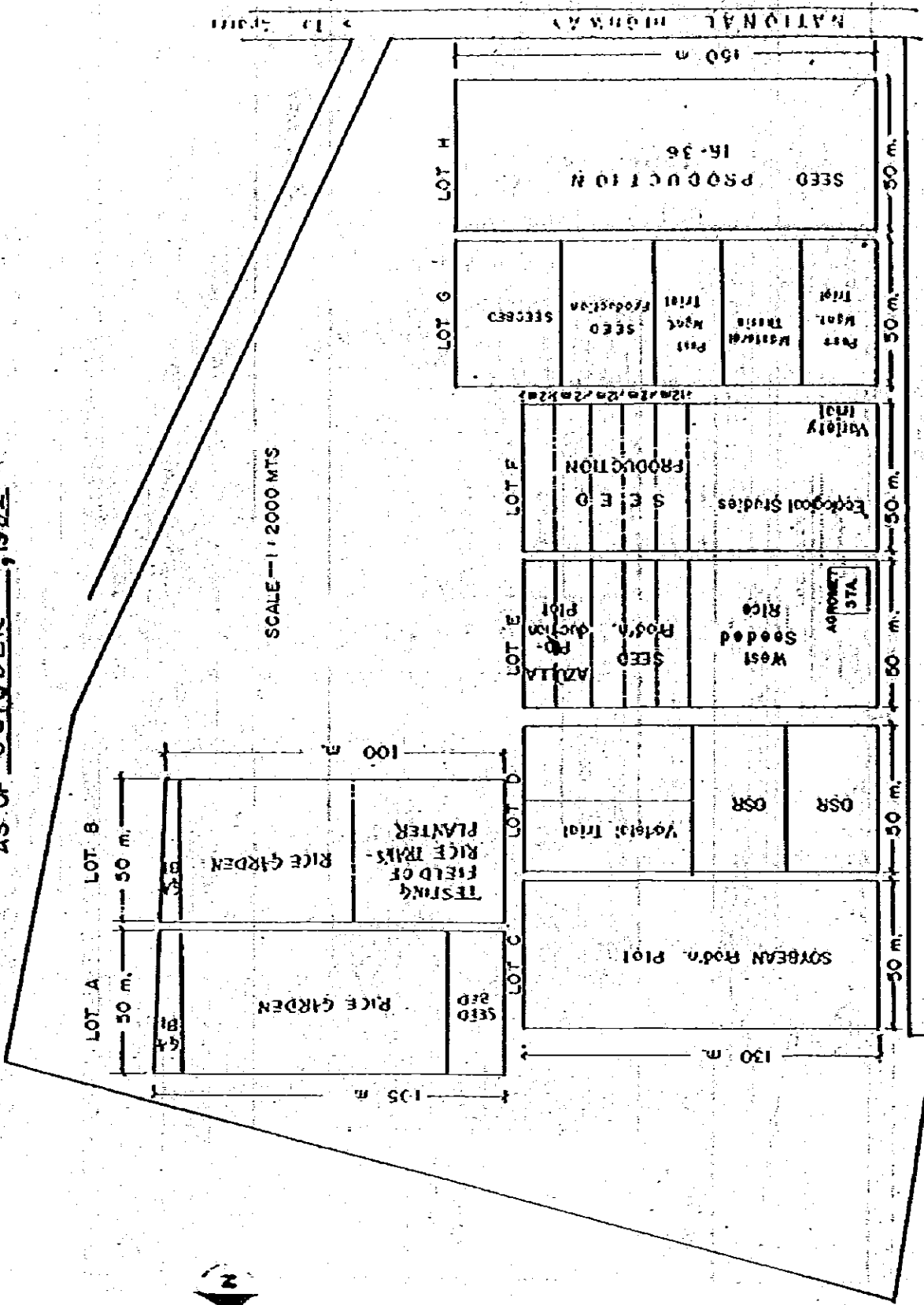
AGRICULTURAL PILOT CENTER COMPLEX
 MINANBA NORTE, IGUIS, CABAYAN
 SCALE 1:2000 MTS



AGRICULTURAL PILOT CENTER - MAIN BUILDING
(Phase I)

SCALE 1 : 500 MTS.

APC MODEL INFRASTRUCTURE
LAYOUT MAP
DIRECTORY OF ON-GOING ACTIVITIES
AS OF OCTOBER, 1982



APPENDIX I

LIST OF KEY PERSONNEL OF STAFF

1. Cabinet Coordinator - Minister Juan Ponce Enrile
2. Director of CIADP - Atty. Alfonso R. Reyno, Jr.
3. Deputy Director of CIADP - Cdr. Juan de Leon
4. Project manager of CIADP-NIA - Engr. Vicente Galvez
5. Technical Director, CIADP-AFC - Mr. Edmund J. Sana
6. Head, Crop Research Division - Mr. Edmund J. Sana
7. Head, Farm Services Division - Mr. Rufito Pagavitan
8. Head, Rural Education Division - Miss Rosalinda Feri
9. Head, Agricultural Engineering Division - Engr. Joven Valle
10. Administrative Office - Mr. Loreto Valdepeñas
11. Head, Equipment Engineering Division - Engr. Oriculo A. Perez
12. Head Manila Liason Officer (MLO) - Atty. Carole Quirolgico
13. Head, Financial Management Staff - Mr. Wilson Sedano

APPENDIX II

UNCA BUDGETARY CONTRIBUTION
IN THE SUPPLY OF EQUIPMENT

| | | |
|---------|---|---------------|
| FY 1975 | = | Y 2,741,000 |
| 1976 | = | Y 12,838,000 |
| 1977 | = | Y 171,616,000 |
| 1978 | = | Y 57,682,000 |
| 1979 | = | Y 52,541,000 |
| 1980 | = | Y 38,815,000 |
| 1981 | = | Y 49,500,000 |
| 1982 | = | Y 48,100,000 |
| (1983 | = | Y 42,000,000) |

APPENDIX III

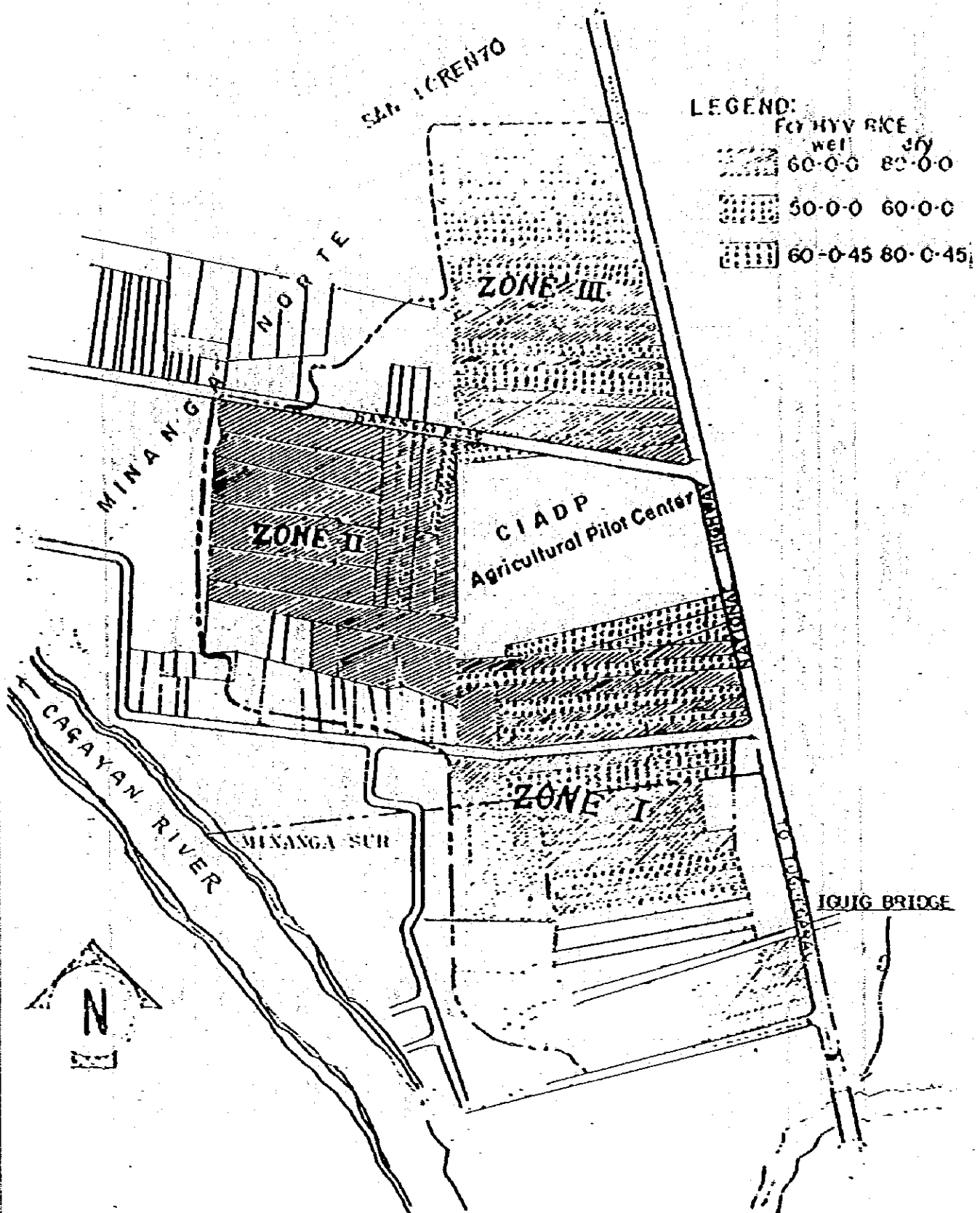
RICE YIELD IN LEA
(CAVAN/HA.)

| YEAR | 1011G (50 HA.) | | | | ALCALA-MULUNG (75 HA.) | | | | LAL-10 (32 HA.) | | | | SUGUEY (42 HA.) | | | | NOTE |
|------|----------------|------|------|----------|------------------------|------|------|----------|-----------------|------|------|----------|-----------------|------|------|----------|-------|
| | MAX. | MIN. | AVE. | VARIO-ty | MAX. | MIN. | AVE. | VARIO-ty | MAX. | MIN. | AVE. | VARIO-ty | MAX. | MIN. | AVE. | VARIO-ty | |
| 1978 | | | | | | | | | | | | | | | | | WET - |
| | | | 109 | IR-42 | | | | | | | | | | | | | WET - |
| 1979 | | | 178 | IR-42 | | | | | | | | | | | | | DRY - |
| | | | | IR-36 | | | | | | | | | | | | | DRY - |
| 1980 | | | | IR-36 | | | | | | | | | | | | | WET - |
| | | | | IR-36 | | | | | | | | | | | | | DRY - |
| 1981 | | | | IR-36 | | | | | | | | | | | | | WET - |
| | | | | IR-36 | | | | | | | | | | | | | DRY - |
| 1982 | | | | IR-36 | | | | | | | | | | | | | WET - |
| | | | | IR-36 | | | | | | | | | | | | | DRY - |

IR-36 were transplanted only 2.20HA.

FERTILIZER RECOMMENDATION MAP 1981

IGUIG PILOT FARM (60 HA)

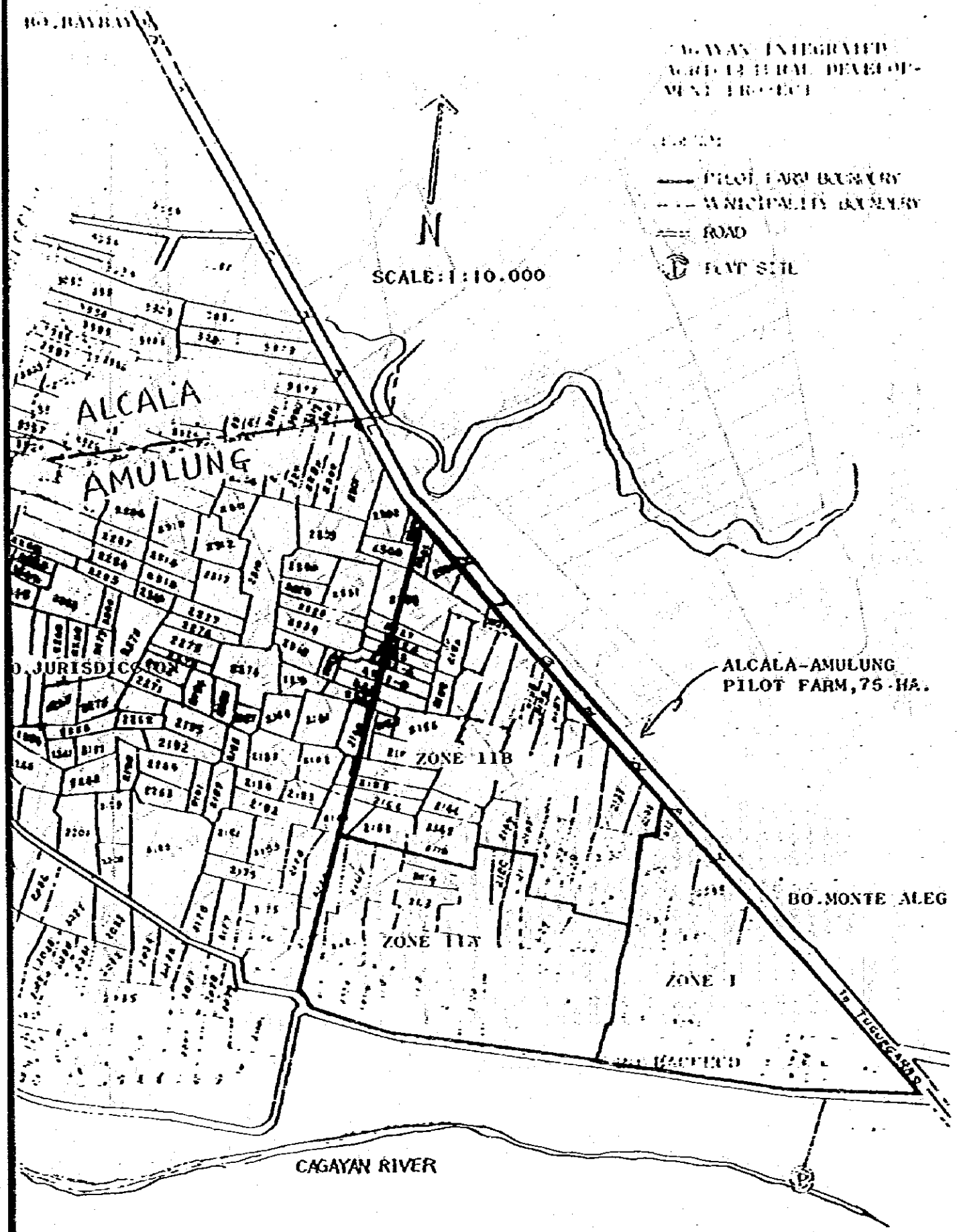


CAGAYAN INTEGRATED
AGRICULTURAL DEVELOP-
MENT PROJECT

- PILOT FARM BOUNDARY
- - - MUNICIPALITY BOUNDARY
- == ROAD
- Ⓟ RAMP SITE



SCALE: 1:10,000



CADASTRAL MAP. LEA OF ALCALA-AMULUNG

DUULI PILUI AREA

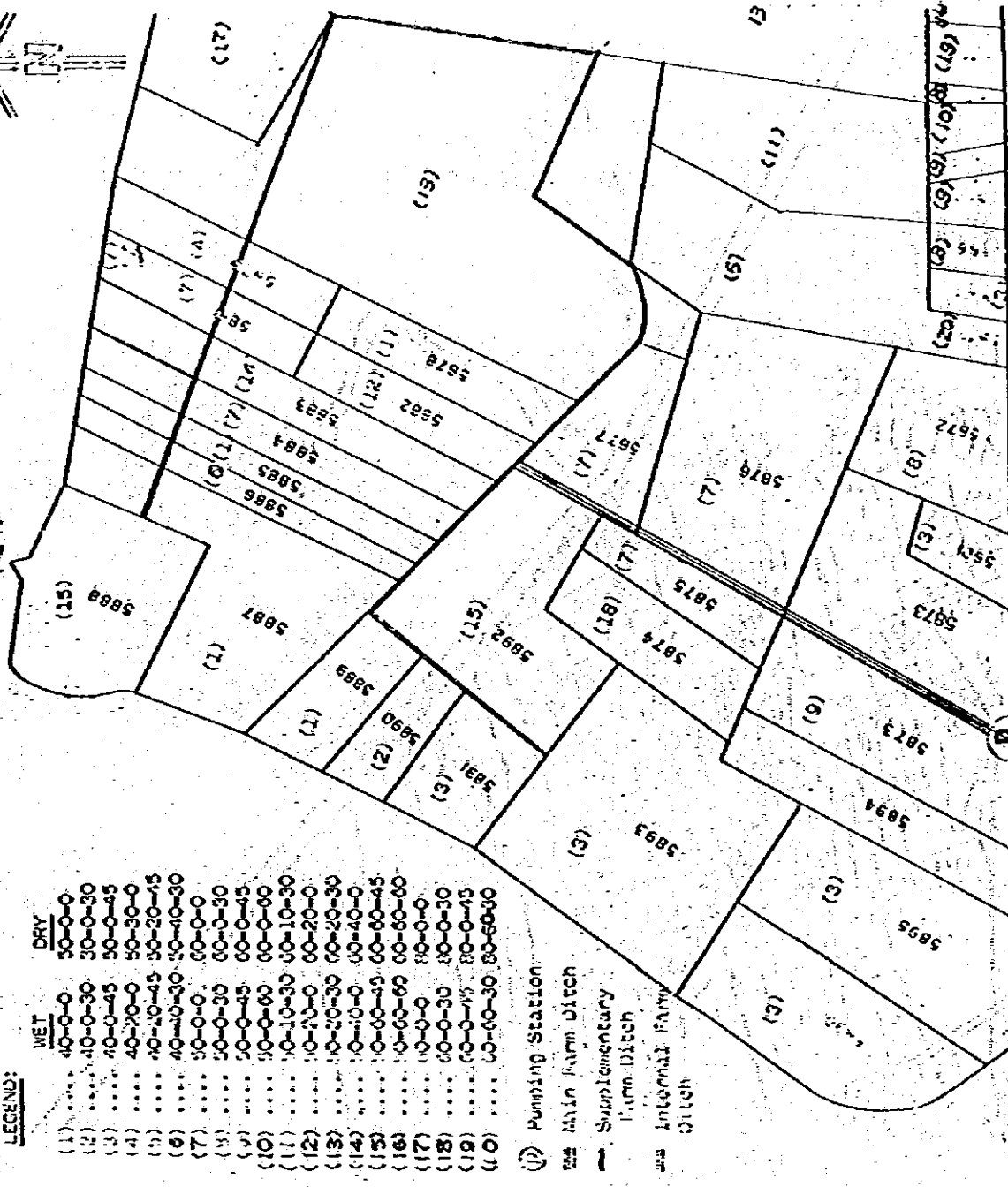
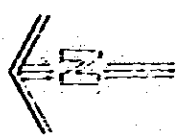
(42 HA)

MAP AUGUST '81

LEGEND:

| | WET | DRY |
|------|----------|----------|
| (1) | 40-0-0 | 50-0-0 |
| (2) | 40-0-30 | 30-0-30 |
| (3) | 40-0-45 | 50-0-45 |
| (4) | 40-20-0 | 50-30-0 |
| (5) | 40-20-45 | 50-20-45 |
| (6) | 40-10-30 | 50-40-30 |
| (7) | 30-0-0 | 60-0-0 |
| (8) | 30-0-30 | 60-0-30 |
| (9) | 30-0-45 | 60-0-45 |
| (10) | 30-0-60 | 60-0-60 |
| (11) | 30-10-30 | 60-10-30 |
| (12) | 30-10-0 | 60-20-0 |
| (13) | 30-20-30 | 60-20-30 |
| (14) | 30-10-0 | 60-40-0 |
| (15) | 30-0-45 | 60-60-45 |
| (16) | 30-0-60 | 60-60-60 |
| (17) | 30-0-0 | 80-0-0 |
| (18) | 60-0-30 | 80-0-30 |
| (19) | 60-0-45 | 80-0-45 |
| (20) | 60-0-30 | 80-60-30 |

- (P) Pumping Station
- == Main Farm Ditch
- - - Supplementary Farm Ditch
- Internal Farm Ditch



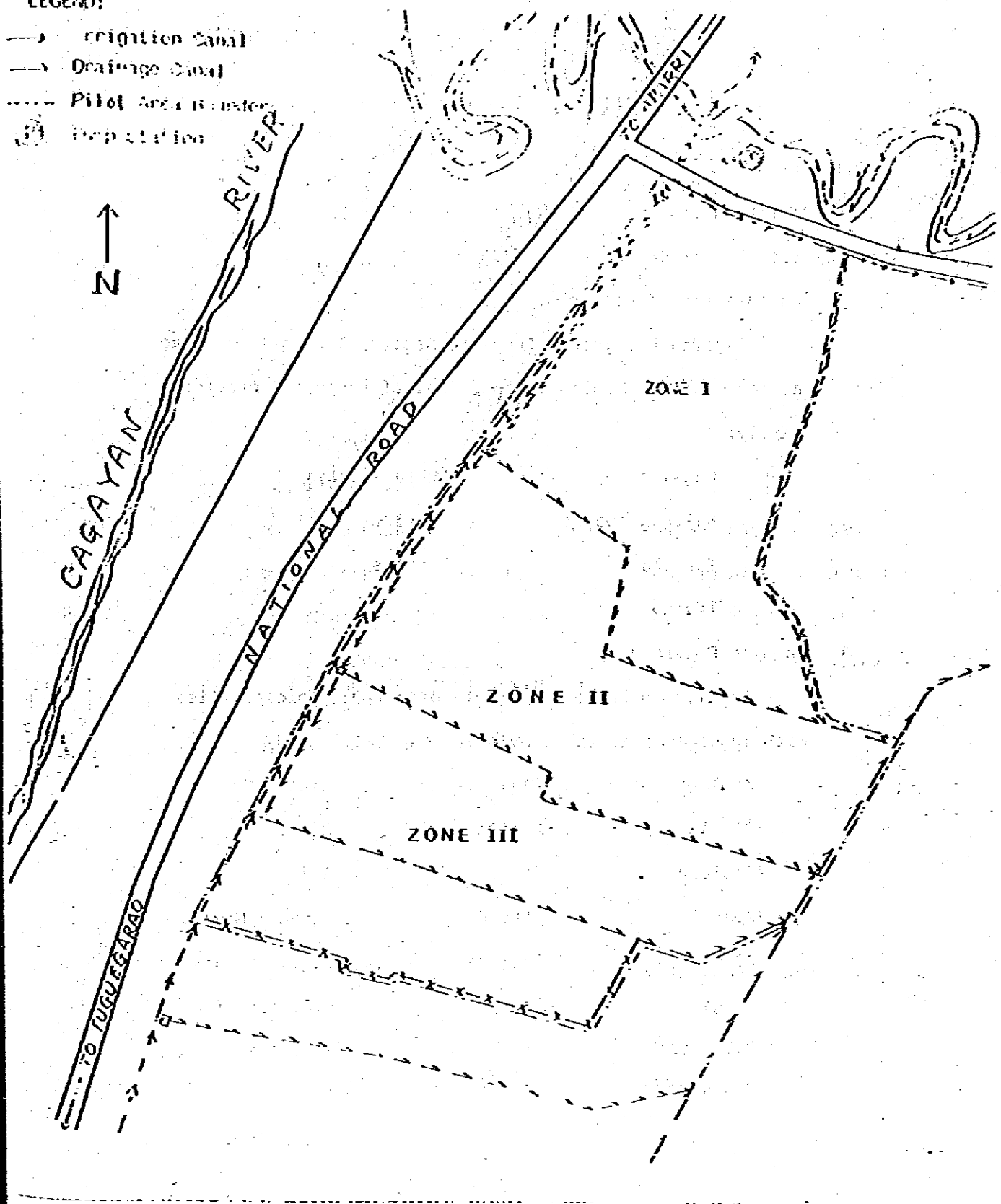
BARANGA ROAD

TO CARO JUNCTION

NATIONAL HIGHWAY

LEGEND:

- Irrigation Canal
- Drainage Canal
- Pilot Area Boundary
- ⊙ Population



LALLO PILOT FARM
32 HA.

PROFILE OF CAGAYAN PROVINCE

1. Location

North Latitude - 17°30' - 19°30'
 East Longitude - 121°15' - 122°15'

2. Administrative Region

Cagayan Province belongs to Region II with Tuguegarao as the center. Region II comprises of seven (7) provinces namely:

| | |
|----------------|---------------|
| Cagayan | Nueva Vizcaya |
| Kalinga Apayao | Quirino |
| Isabela | Batanes |
| Ifugao | |

3. Cagayan Province

Cagayan comprises of twenty nine (29) municipalities with Tuguegarao as the provincial capital.

| | | |
|-------------|----------|---------------|
| Abulug | Claveria | Piat |
| *Alcala | Encile | Rizal |
| *Amulung | Faire | Solana |
| *Aparri | Gattaran | Sanchez Mira |
| Allacapan | Gonzaga | Sta. Praxedes |
| Baggao | *Iguig | Sta. Teresita |
| Ballesteros | *Lal-lo | Sta. Ana |
| *Buguey | Linao | Toto |
| Calayan | Pampora | Tuguegarao |
| *Malubogon | Poculan | |

*Municipality includes CIADP area

4. Land area - 1,000,000 ha (100,000,000 ha)
5. Population - 1,000,000 (1981) annual growth 2.07%
- a. Urban - Rural Population
- Urban - 11.2%
- Rural - 88.8%
6. Mother tongue
- Ilocano - 67.9%
- Ibanag - 14.4%
- Itaves - 13.44%
- Malaweg - 1.4%
7. Major Land Use
- a. Commercial Forest - 294,301 has. - 33%
- b. Cultivated Farm Land - 188,930 has. - 21%
- c. Non Commercial Forest - 171,093 has. - 19%
- d. Abandoned Idle, open brushland, other lands suitable for cultivation - 69,852 has. - 7.76%
8. Climate
- Average annual precipitation - 1,600 mm
(Max. 2,700 mm - Min. 950 mm)
- Average temperature - 27°C
9. Soil Type
- Undifferential mountain soil - 393,733 has. (53.8%)
- Loam of sand stone and igneous rock parent material - 311,670 has. (34.6%)
- Clay loam of alluvial parent material - 165,420 has. (18.39%)

10. Per Capita IRP - 1976 Region II

P017.00

11. CIADP Area and Number of Farmers

CIADP Area - 13,200 has.

Number of farmers - 8,000

12. Crop Production (1977)

Total - 554,617 m/t

Palay - 311,287.72 (65%) 1.8 t/ha

Commercial crops - 188,087.63 (34%)

(coconut, sugar, tobacco)

Corn - 44,443.15 (0.6 t/ha.)

PRODUCTION OF AGRICULTURAL COMMODITIES IN CAGAYAN (1982)

| <u>CROPS</u> | <u>AREA HA.</u> | <u>PRODUCTION# TON</u> | <u>AVERAGE YIELD TON.</u> | <u>NOTE</u> |
|-------------------------|-------------------------------|----------------------------|------------------------------------|--|
| Rice Irrigated | 28,731 | 237,480** | 8.26 | *Includes HVV and traditional varieties **Yield in 2 croppings Source: BAEx, Cagayan, 1979 |
| Rainfed | 59,796 | 68,765 | 1.15 | |
| Upland | 4,778 | 3,581 | 0.75 | |
| Total | 92,805 | 329,829 | | |
| | <u>HARVESTED AREA HA.</u> | <u>QUANTITY</u> | <u>YIELD/HA. IN LOCAL UNIT</u> | |
| Corn | 16,030 | 226,023 cav. | 14.1 cav. | cav. = 50 kg. |
| <u>Root crops</u> | | | | |
| Cassava | 100 | 400,000 kg. | 4,000 kg. | |
| Gabi | 20 | 60,000 kg. | 3,000 kg. | |
| Jinger | - | - | - | |
| Irish Potato | - | - | - | |
| Sweet Potato | - | - | - | |
| <u>Beans</u> | | | | |
| Cowpea | 81 | 405 cav. | 5 cav. | cav. = 50 kg. |
| Mungbean | - | - | - | |
| Pea | - | - | - | |
| Peanuts in shelled | 400 | 320,000 kg. | 800 kg. | |
| Sitao | - | - | - | |
| Soybean | - | - | - | |
| <u>Commercial Crops</u> | | | | |
| Abacca | - | - | - | |
| Cocoa | 6 | 6,000 kg. | 1,000 kg. | |
| Coconuts | 3,600 | 14,400,000 nuts | 150 nuts | per bearing tree |
| Coffee | 35 | 22,750 kg. | 650 kg. | |
| Cotton | - | - | - | |
| Sugarcane | 10,548.6 | 358,652 tons | 34 tons | |
| Tea | - | - | - | |
| Tobacco | 1,237 | 2,138,190 kg. | 1,728.5 kg. | |
| <u>Fruits</u> | | | | |
| Avocado | - | - | - | |
| Banana | 340 | 170,000 bunch | 500 bunch | |
| Guava | - | - | - | |
| Guayabano | 10 | 34,000 fruits | 17 fruits | per bearing tree |
| Mandarin/Citrus | 11 | 2,750,000 fruits | 800 fruits | per bearing tree |
| Mango | 90 | 378,000 fruits | 120 fruits | per bearing tree |
| Papaya | 35 | 350,000 fruits | 20 fruits | per bearing tree |
| Pineapple | - | - | - | |
| Pinele | 15 | 180,000 fruits | 80 fruits | per bearing tree |

| <u>CROP</u> | <u>HARVESTED AREA (H)</u> | <u>QUANTITY</u> | <u>YIELD/HA. IN FORM. UNIT</u> | <u>NOTE</u> |
|-------------------|-------------------------------|-----------------|------------------------------------|-------------|
| <u>Vegetables</u> | | | | |
| Amalaya | 76 | 211,280 kg. | 2,780 kg. | |
| Cabbage | 30 | 52,500 kg. | 1,500 kg. | |
| Cantaloup | - | - | - | |
| Carrot | - | - | - | |
| Cucumber | 0.2 | 500 kg. | 2,000 kg. | |
| Eggplant | 127 | 4,445,000 kg. | 35,000 kg. | |
| Garlic | - | - | - | |
| Okra | - | - | - | |
| Onion | - | - | - | |
| Pechay | 25 | 62,500 kg. | 2,500 kg. | |
| Radish | - | - | - | |
| Sayote | - | - | - | |
| Squash | 80 | 222,400 kg. | 2,780 kg. | |
| orato | 100 | 800,000 kg. | 8,000 kg. | |
| Watermelon | 60 | 120,000 kg. | 2,000 kg. | |

Source: Same Annual Field Report
Selected Crop Statistics (1982) Jan.-June.

LIVESTOCK PRODUCTION IN NEGAVAN (1982)

| ITEM | POPULATION | | PRODUCTION EGGS |
|------------------|--------------------|--------------------|-----------------|
| | <u>Large farms</u> | <u>Small farms</u> | |
| <u>Livestock</u> | | | |
| Carabao | 5,653 | 94,337 | |
| Cattle | 32,231 | 8,065 | |
| Goats | - | 7,404 | |
| Hogs | 4,163 | 147,210 | |
| Horse | - | 4,555 | |
| Rabbits | - | 837 | |
| Sheep | - | 125 | |
| <u>Poultry</u> | | | |
| Broilers | 129,586 | 518,132 | |
| Chicken | 189,627 | 740,203 | 9,627,740 |
| Geese | - | 3,351 | 3,612 |
| Layers | 60,041 | 222,681 | 9,291,710 |
| Turkey | 195 | 3,684 | 32,590 |

LOCATION OF AGRO-METEOROLOGY STATION IN CAGAYAN

| DESIGNATION | LOCATION | LATITUDE | LONGITUDE | ELEVATION ABOVE SEA LEVEL | BEGINNING OF OBSERVATION | ITEMS OF OBSERVATION | KINDS AND NUMBERS OF INSTALLED WEATHER |
|-----------------------------------|------------------------|----------|-----------|---------------------------|--------------------------|--------------------------|--|
| Agricultural Pilot Center | Minanga Norte, Cagayan | | | 18m | July, 1980 | Rainfall | Rain gauge (recording non-recording) |
| | | | | | | Evaporation | Evap. pan, mini |
| | | | | | | Humidity | -Thermohygrograph |
| | | | | | | Wet bulb temperature | -Psychrometer |
| | | | | | | Dry bulb temperature | Atmospheric thermometer |
| | | | | | | Atmospheric temperature | maximum minimum |
| | | | | | | Soil temperature | Soil thermometer |
| | | | | | | Solar Radiation | Actinometer |
| | | | | | | Atmospheric Pressure | Barometer |
| | | | | | | Wind Velocity, h=2m | Cup barometer |
| | | | | | | Wind direction, velocity | Wind direction, velocity |
| | | | | | | Cloud Amount | |
| | | | | | | Rainfall | Rain gauge |
| NIA-CIADP-IC Comalanguan, Cagayan | Minanga, Cagayan | | | | July, 1981 | Evaporation | recording non-recording |
| | | | | | | Humidity | Evaporation pan |
| | | | | | | Wet bulb temperature | Class A Thermohygrograph |
| | | | | | | Soil Temperature | Psychrometer |
| | | | | | | | Atmospheric thermometer |
| | | | | | | | Soil Thermometer |
| | | | | | | | 10 cm |
| | | | | | | | 30 cm |

| OPERATION | LOCATION | LATITUDE | LONGITUDE | ELEVATION ABOVE SEA LEVEL | BEGINNING OF OBSERVATION | ITEMS OF OBSERVATION | KINDS AND NUMBERS OF INSTALLED MATERIALS |
|--------------------------|-----------------|-----------|------------|---------------------------|--------------------------|--|--|
| Cagayan State University | Pinar, Cagayan | | | | April, 1982 | Solar radiation Atmospheric pressure Wind velocity, h=2m Wind Direction, velocity, h=10m Cloud amount Rainfall Evaporation | Actinograph Barometer Cup Anemometer Wind Mast. System Rain gauge Non recording recording Evaporation pan Mini Class A -Thermohygrograph -Psychrometer Atmospheric thermi- meter Soil thermometer 10 cm Actinograph Barometer Cup Anemometer Wind Mast. System |
| Lal-lo, Cagayan | Lal-lo, Cagayan | 18° 12' N | 121° 39' E | 2.44m | 1972 | Solar Radiation Atmospheric pressure Wind velocity, h=2m Wind direction, h=2m Cloud amount Rainfall Cloud amount | Rain gauge |

| DETERMINATION | LOCATION | LATITUDE | LONGITUDE | ELEVATION ABOVE SEA LEVEL | BEGINNING OF OBSERVATION | ITEMS OF OBSERVATION | KIND AND NUMBER OF INSTALLED INSTRUMENTS |
|---------------------|---------------------------------|-----------|------------|---------------------------|--------------------------|--|--|
| APRIL 1970 | APARRI, CAGAYAN | 18° 22' N | 121° 38' E | 4m | 1970 | Rainfall Temperature Pressure Wind Velocity Wind Direction | Rain gauge Thermometer Barometer |
| TUGUEGARAO, CAGAYAN | ALIMANANAO, TUGUEGARAO, CAGAYAN | 17° 37' N | 121° 44' E | 18.53m | 1949 | Rainfall Evaporation Temperature Solar Radiation Pressure Wind Velocity Wind Direction | Rain gauge Evaporation Pan Thermometer, max. Barometer Wind Mast, System |

LIST OF VEHICLES & HEAVY EQUIPMENTS IN APC

| | <u>QUANTITY</u> |
|---------------------------------------|-----------------|
| a) Toyota Land Cruiser Hard Top | 4 |
| b) Nissan Patrol | 1 |
| c) Toyota Land Cruiser Pick-Up | 7 |
| d) Hi-Lux | 1 |
| e) Delica | 1 |
| f) Canter | 1 |
| g) Mitsubishi Van | 1 |
| h) Toyota Hi-Ace | 1 |
| i) Toyota Coaster | 1 |
| j) Isuzu Mini Dump Truck | 2 |
| k) Hino Dump Truck | 2 |
| l) Isuzu Crane Truck | 1 |
| m) Komatsu Bulldozer D45 P | 1 |
| n) Komatsu Payloader 0313 S | 1 |
| o) Komatsu Forklift | 1 |
| p) Trencher | 2 |
| q) Concrete Mixer | 1 |
| r) Compacter | 2 |
| s) Boring Machines | 1 |

FARM MACHINERY LIST (APC)

| NAME OF MACHINERY | MODEL | QUANTITY | POWER RATING |
|------------------------------|----------------|----------|--------------|
| 1) Kubota 4-wheel Tractor | M 8000 | 1 | 45 HP |
| 2) - do - | B 6100 | 1 | 13-16 HP |
| 3) Yanmar 4-wheel Tractor | VM 330T | 1 | 33 PS |
| 4) Kubota 4-wheel Tractor | M 7500DT | 3 | 71 HP |
| 5) Kubota Power Tiller | K-120 x GA-100 | 1 | 9-10 HP |
| 6) - do - | K-75 x GA-70 | 7 | 7 HP |
| 7) - do - | T-7R | 1 | 6 HP |
| 8) Iseki Power Tiller | KS 650 x R 12 | 1 | 6.5 HP |
| 9) Kubota Rice Transplanter | S 300 | 2 | 3 HP |
| 10) Kubota Reaper Binder | RE 50A | 1 | 3 HP |
| 11) Yanmar Reaper Binder | YB 302 | 1 | 3 HP |
| 12) - do - | YB 602 | 2 | 3.5 HP |
| 13) Kubota Power Thresher | HD 5 | 5 | 5 HP |
| 14) Yanmar Power Thresher | PK-IE | 1 | 5 HP |
| 15) Kubota Combine Harvester | Z x D 7 | 1 | 12 HP |
| 16) Yanmar Pump | TS - 700 | 1 | 7 PS |
| 17) Robin Pump | EY - 18 - 30 | 2 | 3.5 PS |
| 18) Satake Tempering Dryer | MOR - 1802 | 2 | 1.0 HP |
| 19) Satake Ventilation Dryer | HD-360 | 1 | 0.75 KW |
| 20) Yamamoto Grain Dryer | FB - 38 F | 2 | 0.75 KW |
| 21) Hand Seed Drill | - | 7 | - |
| 22) Sprinkler | - | 2 | - |
| 23) Grass Mower | - | 5 | - |
| 24) Rotary Heeder | - | 100 | - |
| 25) Power Mist Duster | - | 6 | - |
| 26) Power Sprayer | - | 2 | - |
| 27) Hand Sprayer | - | 13 | - |
| 28) Hand Duster | - | 10 | - |
| 29) Foot Thresher | - | 7 | - |
| 30) Blower | - | 5 | - |
| 31) Rice Whitening Machine | - | 1 | - |
| 32) Chaff Cutter | - | 1 | - |

CUSTOM SERVICE BY APC (1980)

| | <u>No. of farmers</u> | <u>Area (ha)</u> |
|---------------------|-----------------------|------------------|
| A. Land Preparation | | |
| 1. Plowing | 25 | 30 |
| 2. Harrowing | 22 | 37 |
| 3. Rotavation | 49 | 55 |

| | <u>No. of farmers</u> | <u>Gross weight (kg.)</u> |
|-------------------------|-----------------------|---------------------------|
| B. Threshing/harvesting | 38 | 65,616 |

OBSERVATION AND TRAINING IN JA

| NAME | COURSE | DURATION | P O S I T I O N | |
|--------------------------|---|--------------------------------|---|---|
| | | | AT THAT TIME | PRESENT |
| Mr. Eugenio MARTINEZ | Observation Study | June 1 - 21, 1976 | CIADP Project Director | |
| Mr. Alfonso LINDANZO | Observation Study | June 1 - 21, 1976 | CIADP Coordinator | |
| Mr. Alfonso B. GARCIA | Agricultural Machinery Maintenance and Repair | May 2 - June 2, 1977 | Transfer from BAEX to CIADP-APC | Back to BAEX |
| Mr. Alfonso B. PAZOLA | Irrigation and Drainage | February 5 - November 30, 1978 | APC Farm Operations Division Chief | Left APC |
| Mr. Apolonio C. DAVILA | Rice Cultivation and its extension | March 2 - December 22, 1978 | Temp. transfer from BAEX to APC | Temp. transfer from BAEX to APC |
| Mr. Alfonso B. CRUZ | Control of Rice Diseases and Insect Pests | June 1 - December 20, 1978 | APC Technology Development Division Chief | Left APC |
| Miss Lydia ALMERON | Developing Economy | December 1 - March 31, 1979 | APC Office of the Project Manager | Left APC |
| Mr. Gregorio ZINAMPAN | Rice Cultivation and Extension | February - December 21, 1979 | Temp. transfer from BPI to APC | Temp. transfer from BPI to APC |
| Mrs. Providencia N. FERI | Agricultural Extension Service | April 19 - July 31, 1979 | APC Technology Dissemination Division Staff | Farm Services Division Section Chief |
| Mr. Rufino PASAJITAN | Control of Rice Diseases and Insect Pests | May 22 - December 16, 1980 | APC Technology Dissemination Division Staff | Farm Services Division Chief |
| Mr. Wilson MATEO | Agricultural Machinery Maintenance and Repair | June 12 - December 24, 1980 | APC Farm Operations Division Staff | Agricultural Engineering Division Section Chief |

| NAME | COURSE | DURATION | POSITION | |
|--------------------|-----------------------------------|---------------------------------|---|---|
| | | | AT THAT TIME | PRESENT |
| Mr. Joven VALLE | Irrigation and Drainage | February 18 - November 30, 1982 | APC Agricultural Engineering Division Chief | APC Agricultural Engineering Division Chief |
| Mr. Flor Reboroso | Rice Production and Mechanization | March 5 - November 30, 1982 | APC Agricultural Engineering Division Staff | APC Agricultural Engineering Division Staff |
| Mr. Vicente MIGUEL | Rice Cultivation and Extension | March 5 - November 30, 1982 | APC Crop Research Division Staff | APC Crop Research Division Staff |
| Mr. Edmund J. SANA | Observation Study | May 16 - June 16, 1982 | APC Technical Director | APC Technical Director |
| Mr. Vicente GALVEZ | Observation Study | May 16 - June 6, 1982 | IIA Project Manager | NIA Project Manager |

JAPANESE EXPERTS (LONG TERM)

| CHARGE | NAME | SPECIALITY | TERMS |
|----------------------------------|-----------------------|------------------------|--|
| Senior Advisor Project Leader | Mr. Hirokiyo IWASAKI | Agricultural Economist | July 21, 1976 to May 20, 1977 |
| Coordination | Mr. Yoshio YABE | Economist | January 19, 1977 to January 14, 1979 |
| Agromachinery | Mr. Hisao YAMANAKA | Agronomist | December 20, 1976 to October 15, 1979 |
| Irrigation | Mr. Susumu SHIRAIISHI | Irrigation Engineer | December 27, 1976 to December 11, 1978 |
| Extension | Mr. Hideo HARA | Agronomist | April 1, 1977 to March 31, 1979 |
| Agricultural Machinery | Mr. Haruo MIYAISHI | Agronomist | December 20, 1976 to June 19, 1979 |

| CHARGE | NAME | SPECIALITY | TERM |
|----------------------------------|-----------------------|---------------------------------------|--|
| Senior Advisor Project Leader | Dr. Konosuke MARUSUGI | Zoo-Scientist | April 17, 1979 to November 15, 1980 |
| Coordinator | Mr. Hironao SUZUKI | Economist | February 1, 1979 to January 31, 1981 |
| Agronomy | Mr. Toshizo HORIBATA | Agronomist | October 5, 1979 to February 28, 1980 |
| Irrigation | Mr. Yoshitaka OKUBO | Irrigation Engineer | March 16, 1979 to August 27, 1980 |
| Extension | Dr. Yoshina MIZUSAWA | Plant Pathologist | July 1, 1979 to _____ |
| Agricultural Machinery | Mr. Kanai CHONAN | Engineer of Agricultural Machinery | February 28, 1980 to February 27, 1982 |

| CHARGE | NAME | SPECIALITY | TERM |
|---------------------------------|------------------------|---------------------------------------|---|
| Union Advisor for the League | Dr. Sachihiko TANAKA | Thrematologist | November 1, 1960 to August 31, 1962 |
| Coordinator | Mr. Shiro KANAYAMA | Irrigation Engineer | January 20, 1961 to _____ |
| Agonomist | _____ | _____ | _____ |
| Ir. gition | Mr. Hirotsuka OCHI | Irrigation Engineer | April 1, 1961 to _____ |
| Extension | _____ | _____ | _____ |
| Agricultural Machinery | Mr. Hironori KOBAYASHI | Engineer of Agricultural Machinery | February 24, 1982 to March 31, 1984 |

| CHARGE | NAME | SPECIALITY | TERM |
|----------------------------------|-----------------------|------------|-----------------------------|
| Senior Advisor Project Leader | Mr. MINORU KURIMARA | Agronomist | August 17, 1982 to _____ |
| Coordination | _____ | _____ | _____ |
| Agronomy | Mr. Hitoshi HORIKOSHI | Agronomist | August 17, 1982 to _____ |
| Irrigation | _____ | _____ | _____ |
| Extension | _____ | _____ | _____ |
| Agricultural Machinery | _____ | _____ | _____ |

JAPANESE EXPERTS (SHORT TERM)

| CHARGE | NAME | SPECIALITY | TERM |
|------------------------------------|-------------------------|---------------------|--|
| Planning/Management of Extension | Mr. Osamu FUKUDA | Irrigation Engineer | November 19, 1978 to March 31, 1979 |
| Installation of Pump | Mr. Yoshitaka NISHIKAWA | Irrigation Engineer | April 17, 1979 May 7, 1979 |
| Setting of Pipe | Mr. Nario NISHI | Irrigation Engineer | November 19, 1978 to December 9, 1978 |
| Soil Survey of Lower Cagayan | Dr. Yoshiaki ISHIZUKA | Soil Scientist | February 22, 1980 to November 15, 1980 |
| - do - | Dr. Kazuichi SHIGA | Soil Scientist | -do- |
| Hydrologic survey of Lower Cagayan | Mr. Takehiko YANO | Irrigation Engineer | -do- |
| Training of soil Survey | Dr. Kenzo KOMAMURA | Soil Scientist | October 25, 1981 to December 24, 1981 |
| Socio-Economic Survey of LEA area | Mr. Yoshinori MOROOKA | Farm Economist | August 11, 1982 to October 10, 1982 |

ABBREVIATION

| | | |
|----------|---|---|
| ADB | - | Asian Development Bank |
| AMC | - | Area Marketing Cooperatives |
| APC | - | Agricultural Pilot Center (Iguig, Cagayan) |
| BAEcon | - | Bureau of Agricultural Economics |
| SAEx | - | Bureau of Agricultural Extension |
| BAI | - | Bureau of Animal Industry |
| BOS | - | Bureau of Census and Statistics |
| BFAR | - | Bureau of Fisheries and Aquatic Resources |
| BFD | - | Bureau of Forest Development |
| BISA | - | Barangay Irrigators Service Association |
| BPI | - | Bureau of Plant Industry |
| BS | - | Bureau of Soils |
| CAGELOO | - | Cagayan Electric Cooperative |
| CASUCO | - | Cagayan Sugar Corporation |
| CB | - | Central Bank |
| COC-IRDP | - | Cabinet Coordinating Committee-Integrated Rural Development |
| CIADP | - | Cagayan Integrated Agricultural Development Project |
| CIADPO | - | Cagayan Integrated Agricultural Development Project Office |
| CSU | - | Cagayan State University |
| CVAD | - | Cagayan Valley Agricultural College |
| CVARRC | - | Cagayan Valley Agricultural Resources Research Complex |
| CVIT | - | Cagayan Valley Institute of Technology |
| LEP | - | Development Bank of the Philippines |
| FSDC | - | Farm System Development Cooperation |
| IRRI | - | International Rice Research Institute |

| | | |
|--------|---|--|
| KKK | - | Kilusang Kabuhayan at Kaunlaran (Action for Livelihood and Progress) |
| LB | - | Land Bank |
| LBP | - | Land Bank of the Philippines |
| MA | - | Ministry of Agriculture |
| MAR | - | Ministry of Agrarian Reform |
| NACIAD | - | National Council on Integrated Area Development |
| NACIDA | - | National Cottage Industry and Development Authority |
| NCPD | - | National Crop Protection Center |
| NCSO | - | National Census and Statistics Office |
| NEA | - | National Electrification Administration |
| NEDA | - | National Economic and Development Authority |
| NFA | - | National Food Authority |
| NFAC | - | National Food and Agricultural Council |
| NIA | - | National Irrigation Administration |
| OECE | - | Overseas Economic Cooperation Fund |
| PAGASA | - | Philippine Atmospheric Geophysical and Astronomical Services Administration |
| PCARR | - | Philippine Council for Agriculture and Resources Research |
| PDBs | - | Private Development Banks |
| PDS | - | Provincial Development Staff |
| PNB | - | Philippine National Bank |
| PVTA | - | Philippine Virginia Tobacco Administration |
| RB | - | Rural Bank |
| RBS | - | Rural Banks |
| RIARS | - | Regional Integrated Agricultural Research System |
| SBS | - | Saving Banks |
| SLAS | - | Savings and Loans Associations |
| UPLB | - | University of the Philippines at Los Baños |

URARTIP - Unified Rice Applied Research Training and Information Program (UPLB)

a.i. - active ingredient
CLT - Certificate of Land Transfer
DAT - Days after Transplanting
EC - Emulsifiable Concentrate
fig. - figure (s)
ha. - hectare (s)
HYV - High Yielding Variety (ies)
M-99 - Masagana 99
OM - Organic Matter
ppm - parts per million
PT - Production Technician
SP - Soluble Powder
WSC - Water soluble concentrate
WP - Wettable Powder
G - Granules
SSDA - Special Saving Deposit Account
Yr - Year (s)

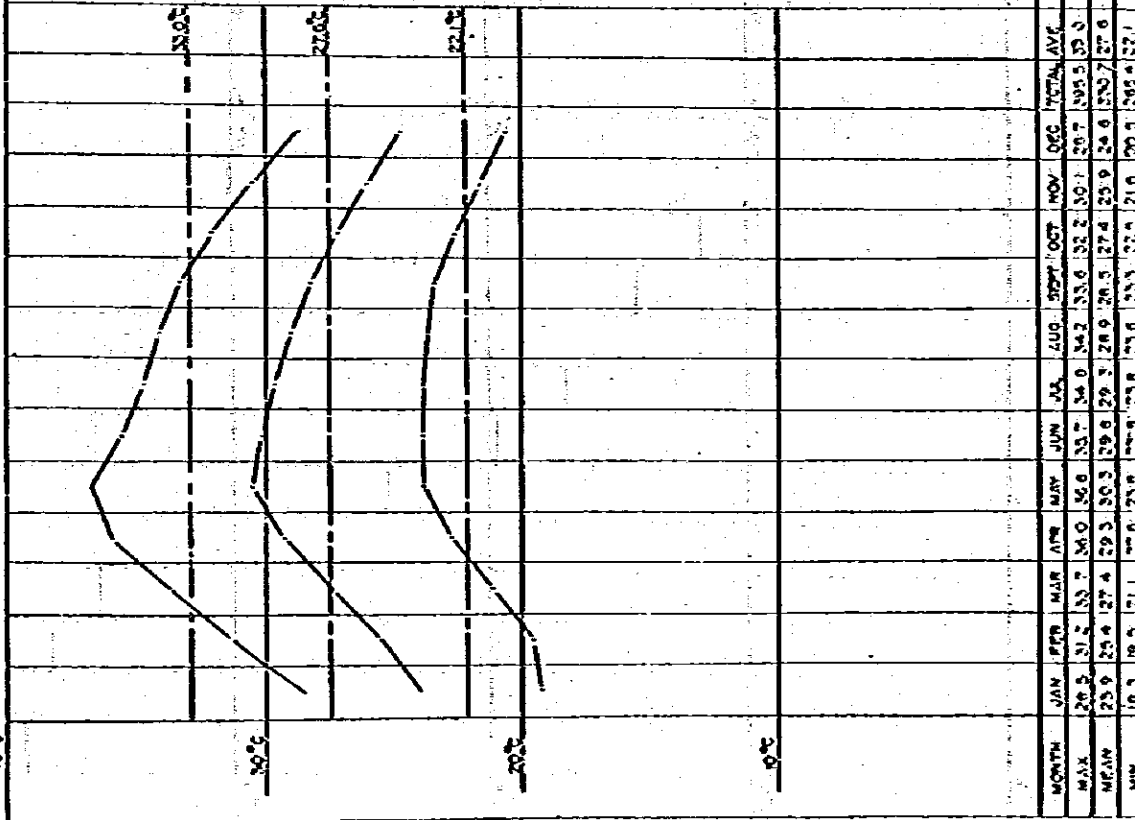
諸 資 料

1949-1981 (33 YEARS) AVERAGE TEMPERATURE

TUGUEGARAO

40°C

1942-191

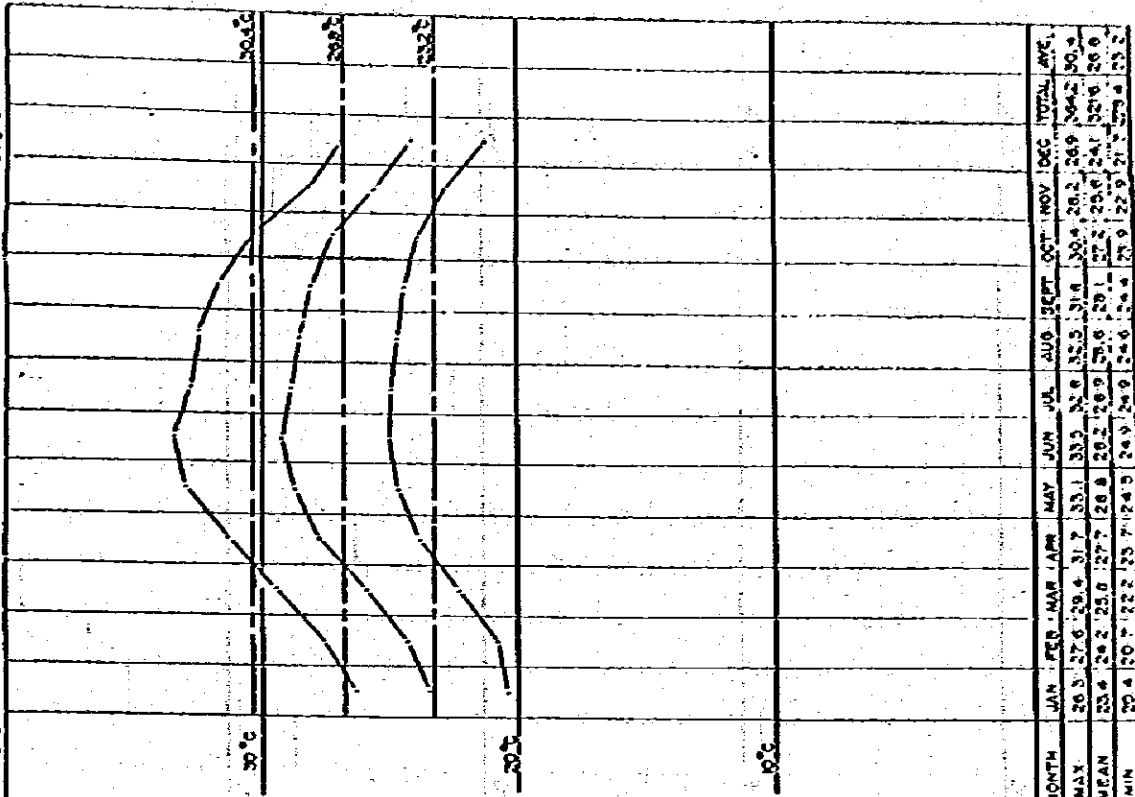


1970-1981 (12 YEARS) AVERAGE TEMPERATURE

APARRI

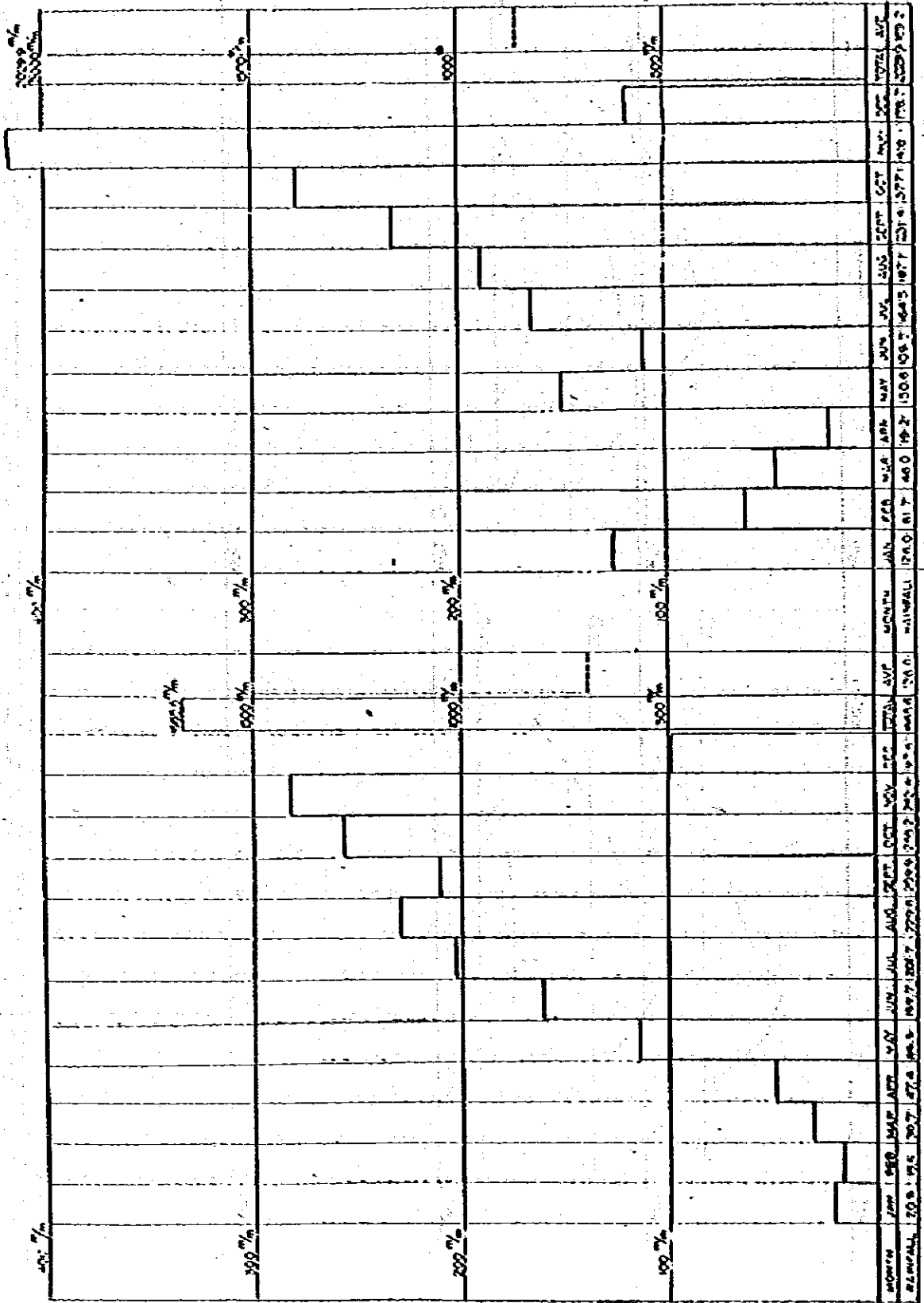
40°C

1982-101



1949-1991 (33 YEARS) AVERAGE RAINFALL
TUGUEGARAO

1970-1981 (12 YEARS) AVERAGE RAINFALL
APARRI



諸資料 3-2)

Report on Water Requirement of Rice

for 1962

by

Hirotoho Ochi & Generoso Oli

1962. 12. 24

ABSTRACT

A preliminary investigation of water requirement of rice was conducted within three project areas of the Cogoyon Integrated Agricultural Development Project to determine the amount of water needed by the crop to supplement its daily needs for growth and development plus losses.

Poddy method was used with at least three to five fields or cs per requirement, serving as observational field.

Results revealed an average water requirement of 9.0 mm/day for Agricultural Pilot Center, 7.8 mm/day and 7.4 mm/day for Iguig Pilot Farm and Buguey Pilot Farm respectively. The total water requirement however, may be 10 mm/day with enough allowance for losses. A generalization was formed that an irrigation requirement of 50 mm every five days may be sufficient to grow a good crop of rice in these areas.

RATIONALE

A preliminary investigation of water requirement of rice is continuously conducted at Agricultural Pilot Center, Iguig Pilot Farm and Buguey Pilot Farm. Two cropping seasons were observed at Agricultural Pilot Center, one at Iguig Pilot Farm and likewise one at Buguey Pilot Farm. Investigation is still going on with Lollo Pilot Farm as an additional project to be investigated.

Paddy method was used in the preliminary investigation with at least three to five fields or as per requirement, serving as observational fields.

Staff gages were fabricated with similar graduations in millimeter. These staff gages were installed on a properly levelled paddy field during transplanting date. Staff gage reading were observed and recorded everyday at 8:30 A.M. from transplanting date to terminal irrigation. If irrigation water is applied, the staff gage reading is also recorded just after irrigation. The reading of the previous day minus the reading of the present day is the depth of water consumed by the crop for the previous day. Likewise, if rainfall and/or irrigation occurred the previous day, the amount of rainfall and/or irrigation water is added to the staff gage reading of the previous day before subtracting the reading of the present day, obtaining the water requirement of the previous day. The mean water requirement of the crop are then calculated for each month.

Mean water requirement ranged from 6.6 mm/day to 10.4 mm/day indicating that while the crop was young the water requirement was low. But during the tillering stage through the booting stage, there was a significant increase in water requirement, an average of 10.0 mm/day and 10.4 mm/day respectively, which went down to 7.9 mm/day during the maturing age.

The same trend was observed for the cropping season which was grown from June to September. However, the mean were slightly higher than the period from February to May, because of the pronounced heat and sunlight of summer.

Table 2. - Summary of Daily Water Requirement for Rice in millimeter per day at Iguig Pilot Farm.

| Months Studied | Mean in mm/day | General Mean |
|----------------|----------------|--------------|
| May, 1982 | 6.4 | 7.8 |
| June, 1982 | 8.3 | |
| July, 1982 | 9.1 | |
| August, 1982 | 7.5 | |
| | | |

As shown in Table 2, the general mean daily water requirement of Iguig Pilot Farm is 7.8 mm/day. Range of mean water requirement is from 6.4 mm/day to 9.1 mm/day. The mean water requirement during the early stage of the crop was low, and as it reached tillering to booting stage it increased to a mean of 8.3 mm/day and 9.1 mm/day respectively. On the latest stage of growth however, the water requirement decreased.

Table 3 - Summary of Daily Water Requirement for Rice in millimeter per day at Buguey Pilot Farm.

| Months Studied | Mean in mm/day | General Mean |
|-----------------|----------------|--------------|
| June, 1982 | 5.7 | |
| July, 1982 | 8.2 | |
| August, 1982 | 8.5 | |
| September, 1982 | 7.3 | |
| | | 7.4 |

Table 3 shows the mean daily water requirement of Buguey Pilot Farm. The general mean daily water requirement of rice in the area was 7.4 mm/day. Mean water requirement on the otherhand ranged from 5.7 mm/day to 8.5 mm/day. Results also denotes that as the crop is young the water requirement is low. At tillering stage through booting stage, water requirement increases, and as it approaches maturity stage the amount of water required decreases.

GENERALIZATION & RECOMMENDATION

Results revealed an average water requirement of 9.0 mm/day for Agricultural Pilot Center, 7.8 mm/day and 7.4 mm/day for Iguig Pilot Farm and Buguey Pilot Farm respectively. These values varies depending on such factors as weather and soil conditions of the area. The total water requirement, however, may be 10 mm/day with enough allowance for losses. An irrigation requirement of 50 mm every five days may be sufficient to grow a good crop of rice in

these areas.

However, further investigation is recommended considering factors as weather and soil conditions. And for us to be able to determine from the total water requirement, the amount of evaporation, transpiration, percolation and seepage losses, tank lysimeter method should be used.

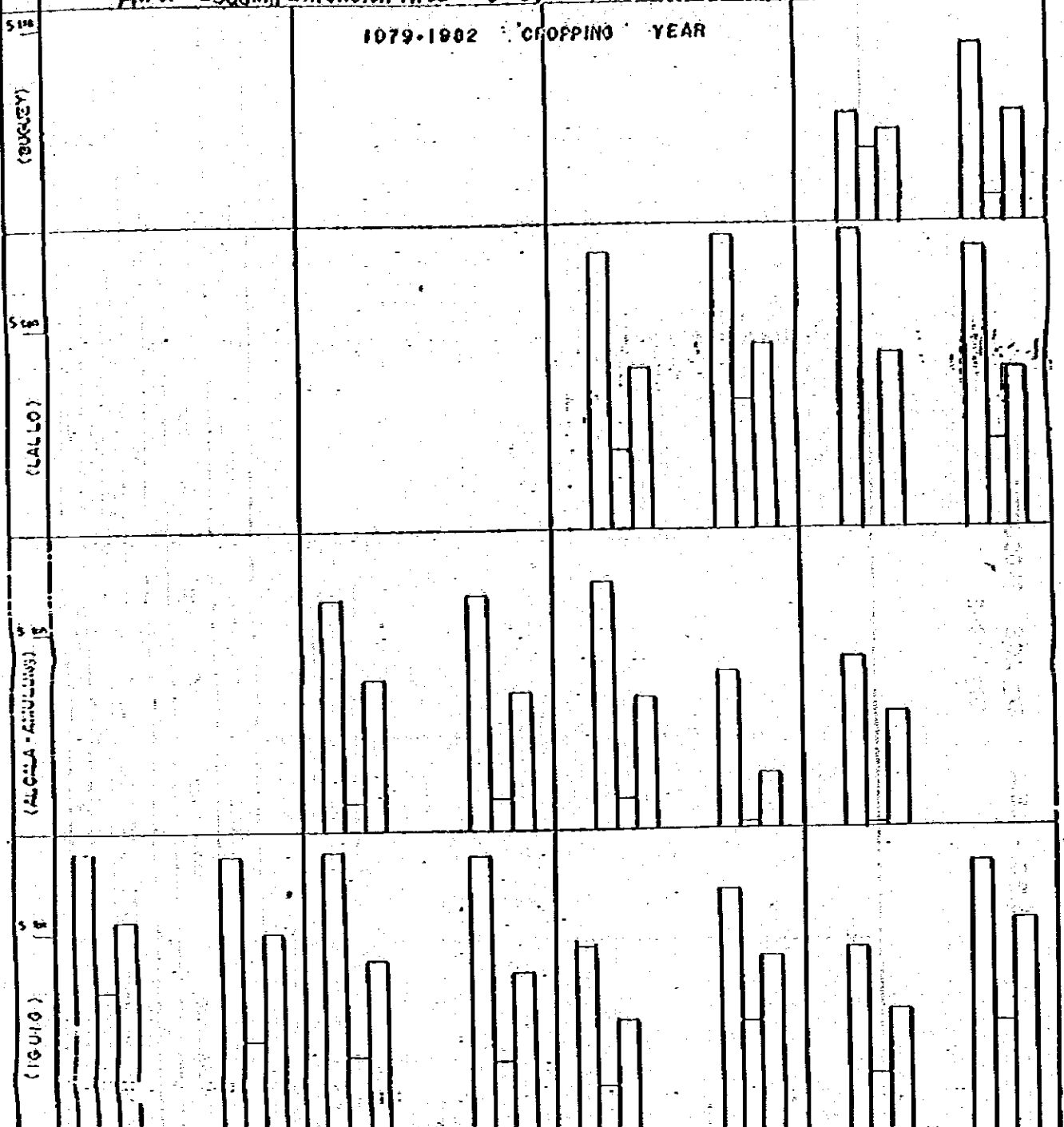
A.P.C. - L.E.A. AVERAGE PRODUCTION REPORT
1979 - 1982

| PROJECT | IGUIG | ALCALA - AMULUNG | LALLO | BUGUEY | TOTAL | AVERAGE | REMARKS |
|---------------------|-------------|------------------|-------------|-------------|-------------|---------|---------|
| YEAR | 1978 - 1982 | 1979 - 1982 | 1980 - 1982 | 1981 - 1982 | 1978 - 1982 | | |
| CROPPING | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | |
| AREA | 30.00 | 30.00 | 30.00 | 30.00 | 120.00 | 30.00 | |
| VARIETY | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | |
| PLANTING | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | |
| PLANTING DATE | 10/10 | 10/10 | 10/10 | 10/10 | 10/10 | 10/10 | |
| PLANTING METHOD | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | |
| PLANTING DENSITY | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | |
| PLANTING DISTANCE | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | |
| PLANTING DEPTH | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | |
| PLANTING TYPE | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | |
| PLANTING MATERIAL | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | |
| PLANTING COST | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | |
| PLANTING YIELD | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | |
| PLANTING EFFICIENCY | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | |
| PLANTING PRODUCTION | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | |
| PLANTING TOTAL | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | |
| PLANTING AVERAGE | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | |
| PLANTING REMARKS | | | | | | | |

PRODUCTION REPORT

1992.11.16 AED

APC. Logging Extension Area (Igulig, Abab-Amulung, Lollo, Buguey)

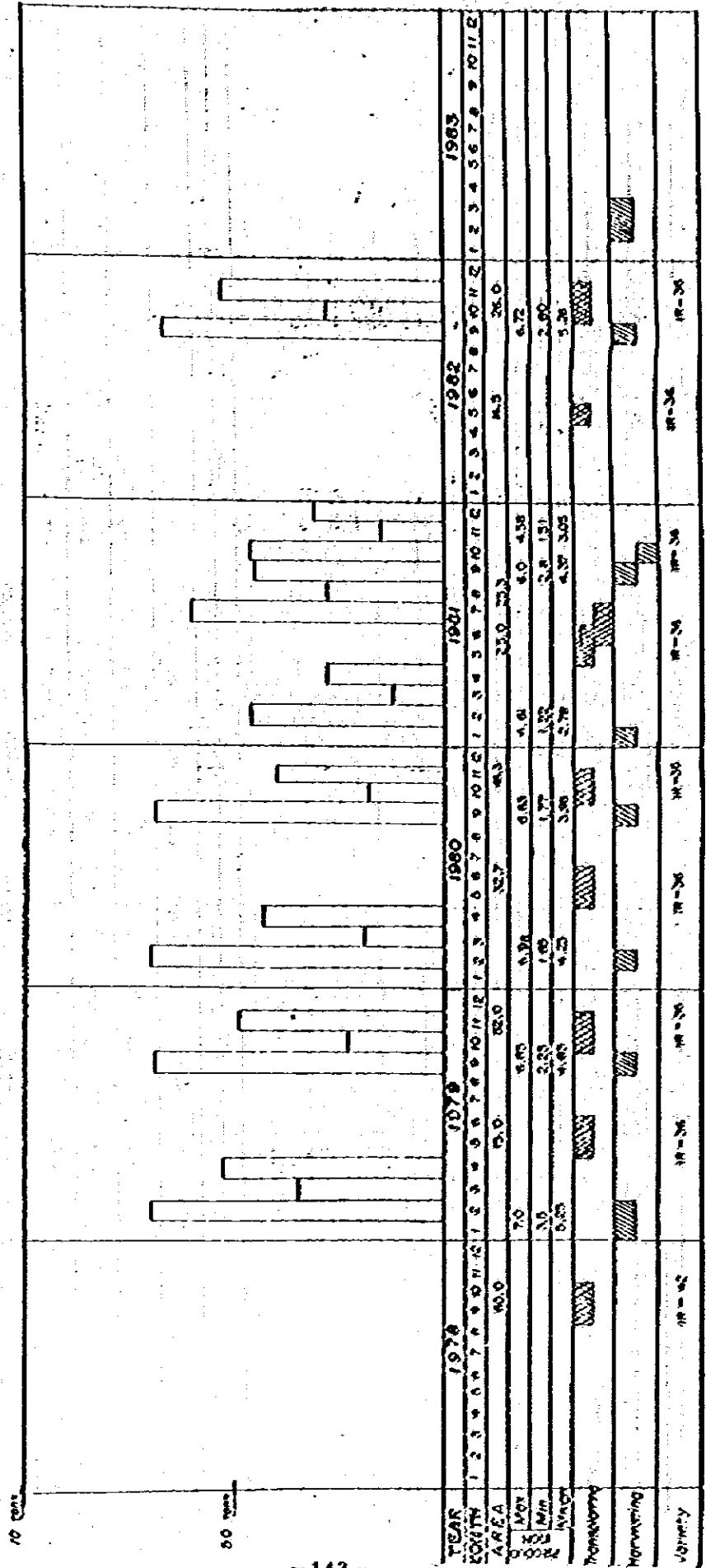


| YEAR | 1979 | | | | | | | | | | | | 1980 | | | | | | | | | | | | 1981 | | | | | | | | | | | | 1982 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------|------|---|---|---|---|-----|---|---|---|----|----|----|------|---|---|---|---|---|---|---|---|----|----|----|------|---|---|---|---|---|---|---|---|----|----|----|------|-----|---|---|---|---|---|---|---|----|----|----|------|------|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | | | | | | | | | | | | | | | | | | | | | | | |
| ABAB-AMULUNG | 2.0 | | | | | 6.9 | | | | | | | 7.0 | | | | | | | | | | | | 6.8 | | | | | | | | | | | | | 6.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LOLLO | 3.5 | | | | | 2.3 | | | | | | | 1.9 | | | | | | | | | | | | 1.2 | | | | | | | | | | | | | 2.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IGULIG | 5.3 | | | | | 4.9 | | | | | | | 4.3 | | | | | | | | | | | | 2.8 | | | | | | | | | | | | | 4.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BUGUEY | | | | | | | | | | | | | 5.8 | | | | | | | | | | | | 6.2 | | | | | | | | | | | | | 5.9 | | | | | | | | | | | | 4.25 | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | 0.7 | | | | | | | | | | | | 0.04 | | | | | | | | | | | | | 0.2 | | | | | | | | | | | | 0.09 | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | 3.7 | | | | | | | | | | | | 3.4 | | | | | | | | | | | | | 1.4 | | | | | | | | | | | | 2.94 | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | 6.8 | | | | | | | | | | | | 7.20 | | | | | | | | | | | | 7.25 | | | | | | | | | | | | 6.90 | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | 1.89 | | | | | | | | | | | | 3.09 | | | | | | | | | | | | 2.68 | | | | | | | | | | | | 2.09 | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | 8.82 | | | | | | | | | | | | 4.45 | | | | | | | | | | | | 4.70 | | | | | | | | | | | | 3.81 | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2.7 | | | | | | | | | | | | 4.9 | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1.79 | | | | | | | | | | | | 0.59 | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2.25 | | | | | | | | | | | | 2.74 | | | | | | | | | | | |

PRODUCTION REPORT

1978-1982 (a) Cropping
Soybean

PROJECT NAME IRVING MILLET WARM



PRODUCTION COMPARISON
Leading Extension Area - Outside Leading Extension Area
 (1981 PRODUCTION REPORT)

1981. 2. 2. A.E.O.

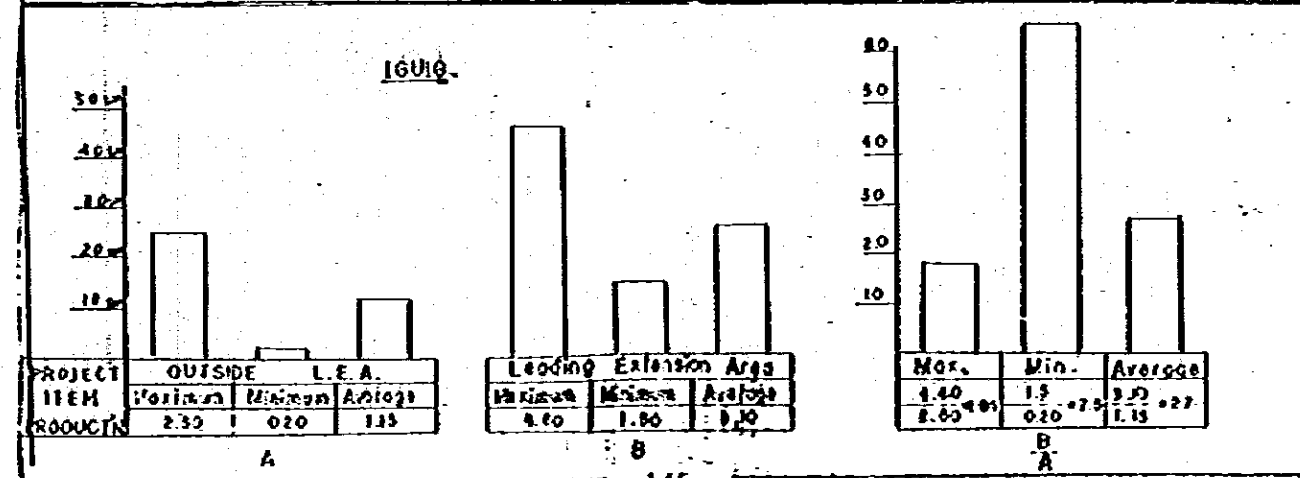
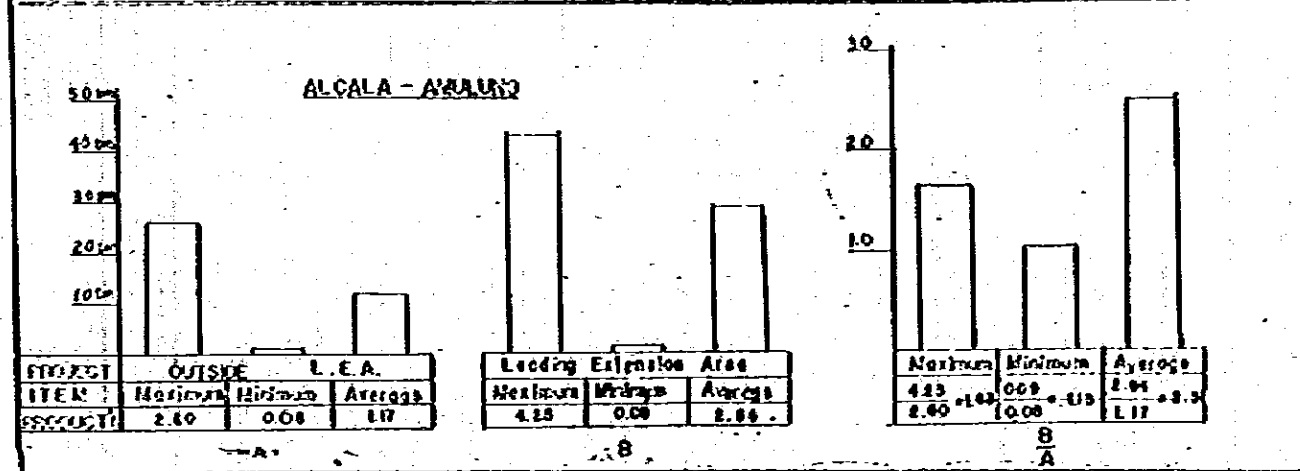
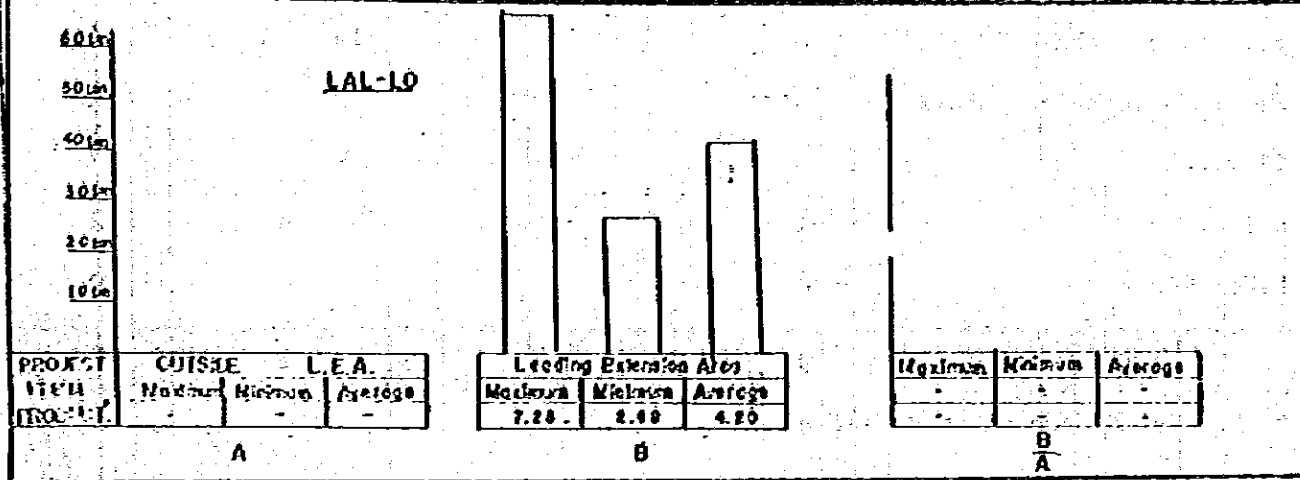
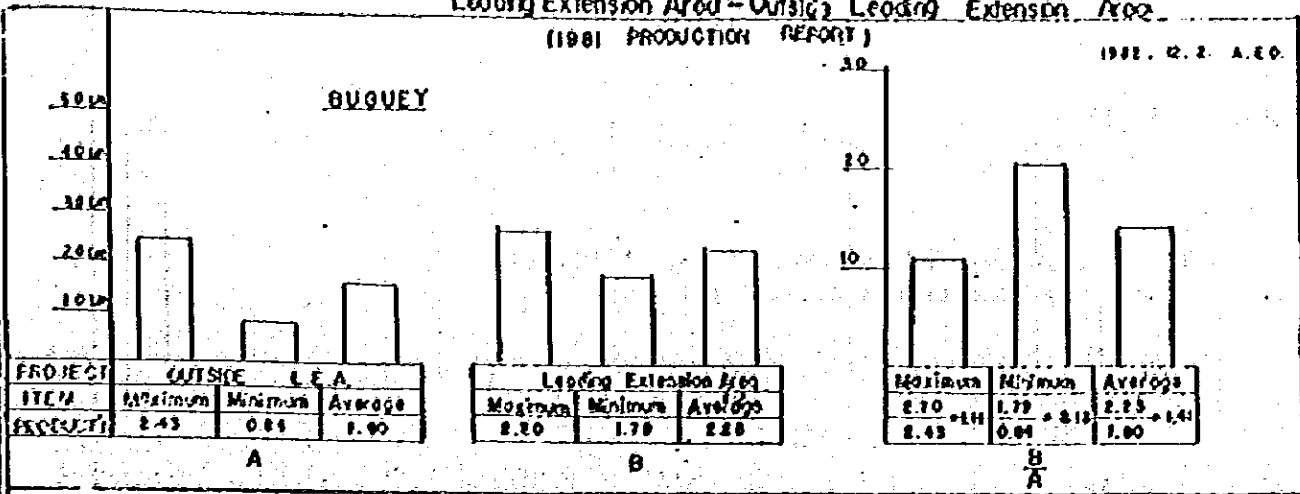


Table 1. Manpower of the Crops Research Division
by Educational Attainment

| Category | Educational Attainment | | | | | Total |
|---------------------------|------------------------|-----------------------|-----------|----------|----------|-----------|
| | Elem/H.S. | College/Undergraduate | BS | MS | Phd. | |
| Full time technical staff | - | 4 | 19* | 1 | - | 24 |
| Detailed technical staff | - | - | 1 | - | - | 2 |
| Clerical | - | 1 | 1 | - | - | 2 |
| Driver | 1 | 1 | - | - | - | 2 |
| Labor Force* | 8 | 1 | - | - | - | 9 |
| TOTAL | 9 | 7 | 21 | 1 | - | 38 |

* Four staff are on study leave.

CROPS RESEARCH DIVISION
AGRICULTURAL PILOT CENTER
SUMMARY OF PROGRAM OF WORK
1982-1984

| PROGRAM / PROJECT / ACTIVITY | UNIT OF WORK MEASUREMENT | 1982 | | | | | | | | | | | | 1983 | | | | | | | | | | | | 1984 | | | | | | | | | | | | |
|---|---|-------------|---|---|---|---|---|---|---|---|---|----|----|------|-------------|---|---|---|---|---|---|---|---|---|----|------|----|-------------|---|---|---|---|---|---|---|---|---|----|
| | | TARGET WORK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | TARGET WORK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | TARGET WORK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1.23. Corn-Intercrop Studies | -do- | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.24. Studies on Rice Ratoning | -do- | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.25. Studies on Relay Cropping in Irrigated Rice Fields | -do- | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G. Development of Low, Medium and High Levels of Crop Management for Major Crops | No. of trials conducted/No. of test sites | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.26. Irrigated Rice | -do- | 2/2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.27. Rainfed Rice | -do- | 1/1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.28. Corn | No. of trials conducted/No. of test sites | 2/2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.29. Field legumes | -do- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.29-1. Mungo | -do- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.29-2. Peanut | -do- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H. Special Studies on Other Crops | No. of studies conducted | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.30. Sugar Cane | -do- | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.31. White Potato | -do- | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.32. Wheat | -do- | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.33. Sweet Potato | -do- | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.34. Onion and Garlic | -do- | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.35. Soybeans | -do- | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I. Soils Research | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.36. Detailed Soil Chemical and Physical Characterization | No. of Hectares Covered | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.36-1. Problem Soil at Lower Cagayan CIADP-IC Area | -do- | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.36-2. Other CIADP-IC Project Areas | -do- | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.37. Studies on Soil Management, Improvement and Conservation for CIADP-IC Areas | No. of studies conducted | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.38. Studies on 21st Different Soils | -do- | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

AGRICULTURAL PILOT CENTER
 AGRICULTURAL ENGINEERING DIVISION
 SUMMARY OF PROGRAM OF WORK
 1982-1984

| PROGRAM / PROJECT / ACTIVITY | UNIT OF WORK MEASUREMENT | 1982 | | | | | | | | | | | | 1983 | | | | | | | | | | | | 1984 | | | | | | | | | | | |
|--|--|-------------|------|---|------|---|---|------|---|---|------|---|---|-------------|---|---|------|---|---|------|---|---|-------------|---|---|------|---|---|------|---|---|---|---|---|--|--|--|
| | | TARGET WORK | | | 1982 | | | 1983 | | | 1984 | | | TARGET WORK | | | 1983 | | | 1984 | | | TARGET WORK | | | 1983 | | | 1984 | | | | | | | | |
| | | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | | | |
| 1. SUPPORT SERVICES TO RESEARCH AND EXTENSION A) Farm Machinery Custom Services 1. Tillage and Transplanting Equipment | No. of hectares serviced with Tillage/Tillage planting Equipment | Per reqm't | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Per reqm't | 75/5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Per reqm't | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Per reqm't | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Per reqm't | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Weeders and Sprayers | No. of farmers served with hand weeders/sprayers | Per reqm't | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Per reqm't | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Per reqm't | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Per reqm't | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Per reqm't | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Thrashers and Harvesters | No. of farmers serviced with Thrashers/Harvesters | Per reqm't | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Per reqm't | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Per reqm't | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Per reqm't | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Per reqm't | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



