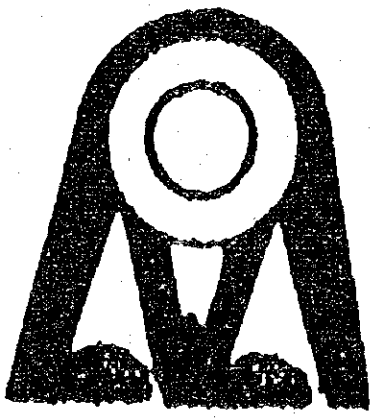
bridging peoples, breaching technological walls



BOHOL AGRICULTURAL PROMOTION CENTER

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People's/Farmers' Orgn. Served Based On Crop Commodity

Proposed R O S Lowland Irrigated Organizational Structure

Rice Cropcut Yield Survey

C. Attachment

Detail Information About APC and Philippine Dev't. Plan, etc.

Rice Cultivation / Agricultural Extension and Training

Agricultural Machinery

Water Management

BOHOL PROVINCIAL PROFILE

History

- Bohol province was created on March 10, 1917 by virtue of Republic Act No. 2711.
- Tagbilaran became a city on July 1, 1966 by virtue of Republic Act No. 4660.
- Two significant revolts : the Tamblot Rebellion in 1621 and the Dagohoy Revolt from 1744 to 1829.
- Home of Pres. Carlos P. Garcia, fourth president of the Republic (1957 - 1960).

Geography

- Lies in Central Philippines, southeast of Cebu and southwest of Leyte and consisting of an oval-shaped mainland with 73 islets around it.
- Tenth largest island in the country.
- Tagbilaran City, its capital, is 630 kilometers from Manila and 72 air kilometers from Cebu City.

Political Subdivision

- Consists of 47 municipalities and one city.
- Has 1,114 barangays.
- First-class province.

Population

- 948,315 for the province, 20.6 % of the region's total population.
- Population density of 242 persons per sq. km.
- Tagbilaran's population is 56,363.

Language / Dialects

* Top three household dialects are Binul-anon, Cebuano and Tagalog.

* Filipino and English are widely understood and spoken.

Climate

* Not uniform in all areas: along the coast, it is warm and dry; towards the interior, it is cold and humid.

Natural Resources

* Has a land area of 411,726 hectares.

* Approximately 323,160 hectares or 78.5 % of total land area are agricultural lands.

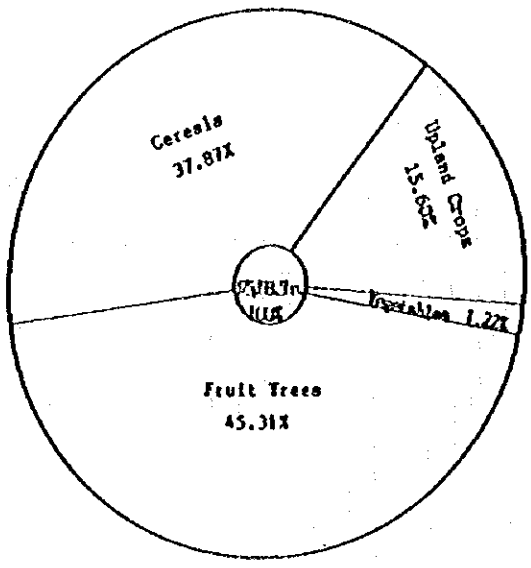
* Forest cover 6 %.

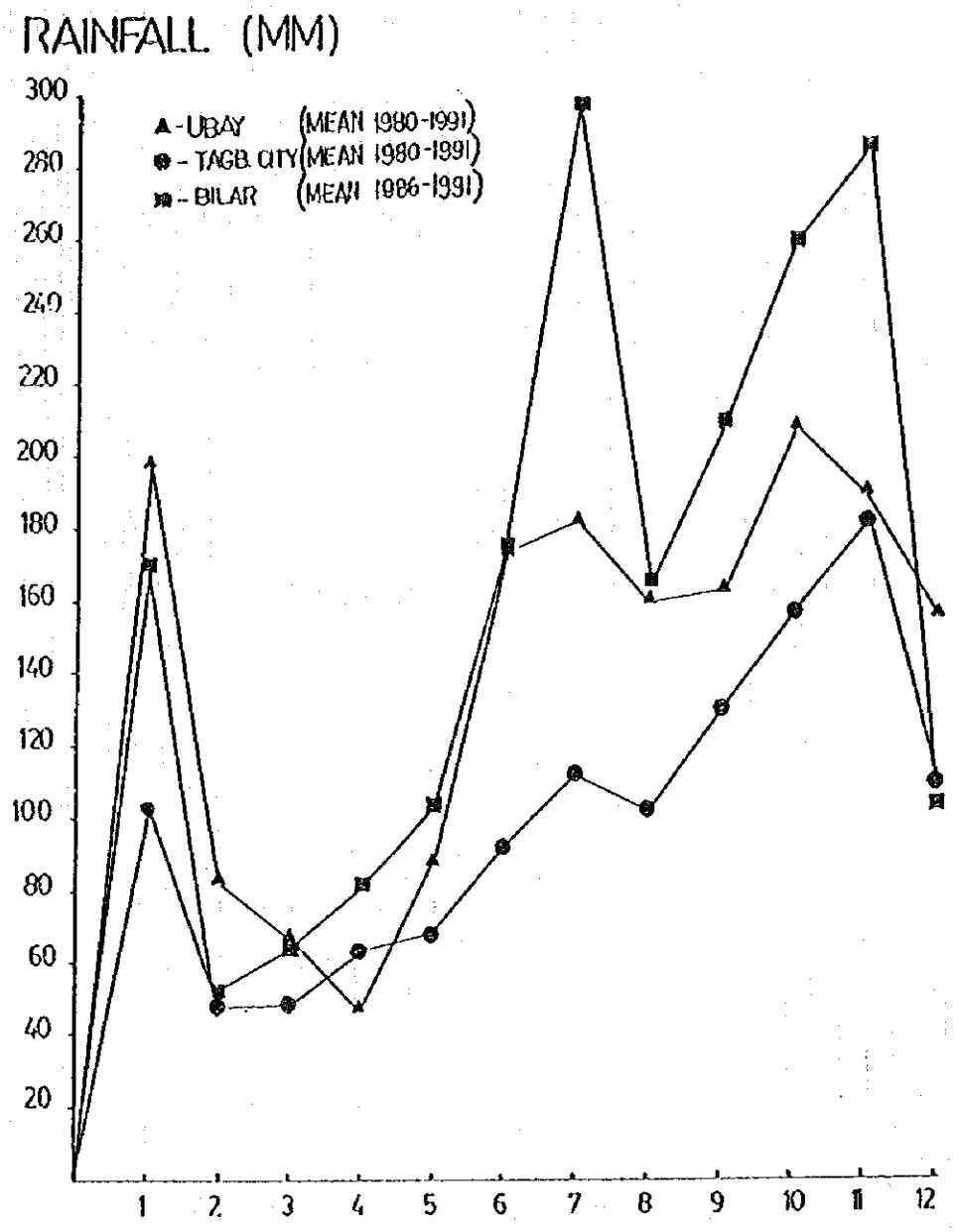
Agricultural Profile

* Major crops are coconut, rice, corn, rootcrops, banana, cassava and vegetables.

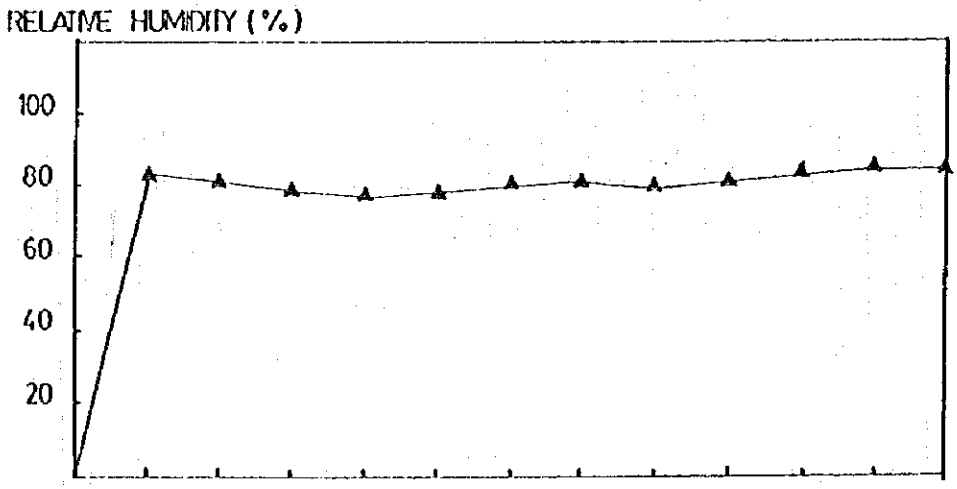
* Leads Central Visayas in the production of food grains.

* Area Devoted to Crops.

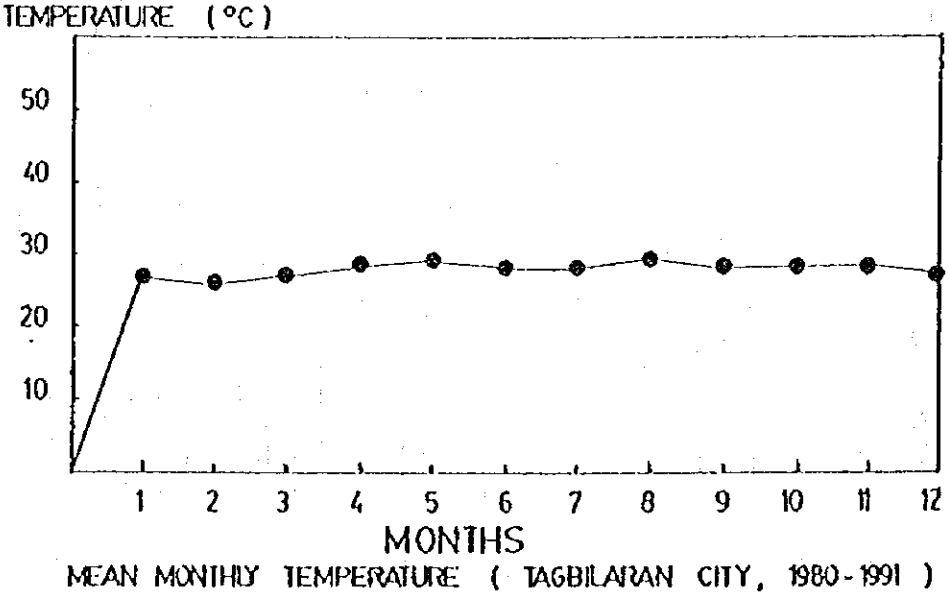




MEAN MONTHLY RAINFALL FROM THREE (3) SITES IN BOHOL PROVINCE

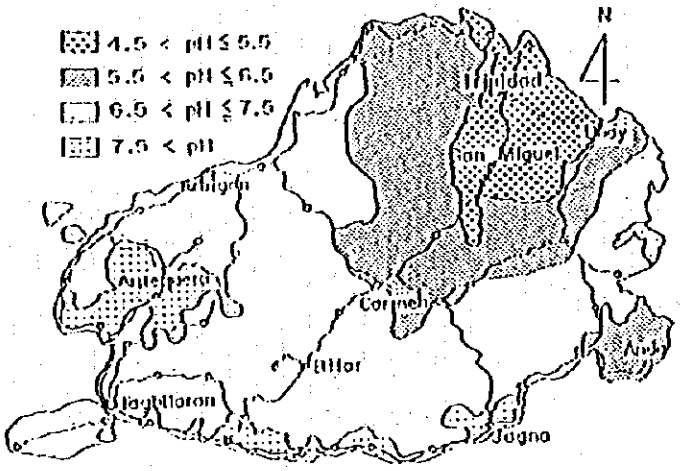


MEAN MONTHLY RELATIVE HUMIDITY (TAGBILARAN CITY, 1980-1991)

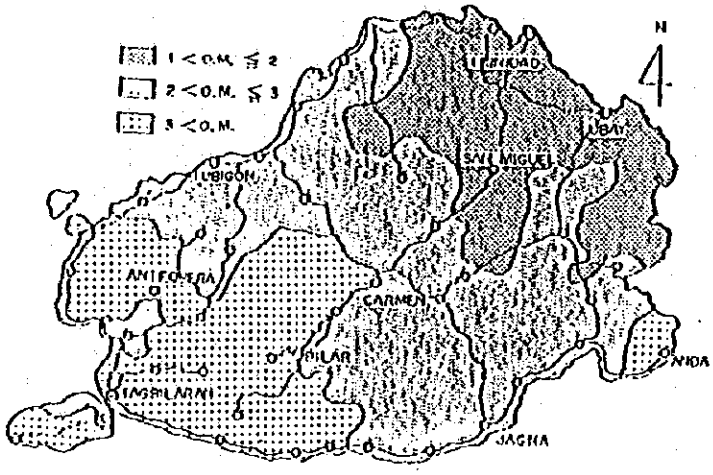


MEAN MONTHLY TEMPERATURE (TAGBILARAN CITY, 1980-1991)

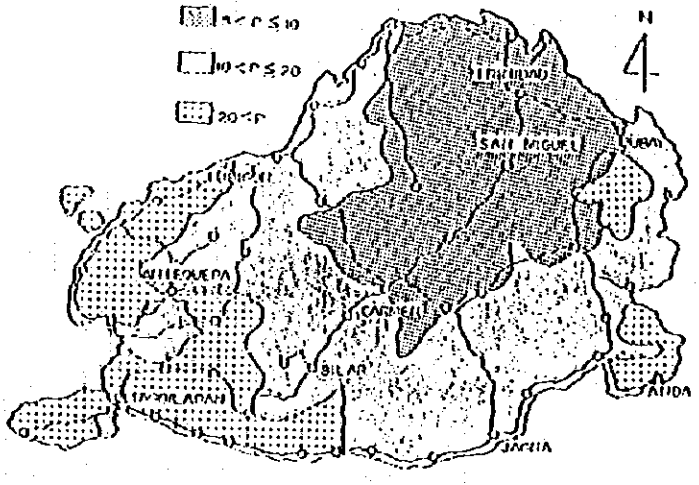
Soil Fertility Status.



Geographical distribution of soil pH in Bohol



Fertility status in Bohol based on organic matter content



Fertility status in Bohol based on extractable phosphorus content

- Soil Slope

Slope %	Classification	Area in Thousand (Has.)	% Distribution
0 - 3	Level	110.754	26.9
3 - 8	Rolling	56.406	13.7
8 - 15	Slightly Hilly	120.636	29.3
15 - 30	Hilly	27.586	6.7
30 - up	Mountainous	96.344	

Comprehensive Agrarian Reform (CARP)

- Out of the total land area, only 9 % will be subjected to agrarian reform which is 37,139 has.
- Based on records, about 65.8 % (24,431 has.) had been distributed.
- The remaining 34.2 % (14,038 has.) is still due for distribution under Phase III CARP Program of the Department of Agrarian Reform.

BOHOL AGRICULTURAL PROMOTION CENTER

General Information

The Bohol Agricultural Promotion Center (APC) is a joint undertaking between the Government of Japan through Japan International Cooperation Agency (JICA) and the Philippine government through the Bohol Integrated Area Development Project (BIADP).

Objective

The Bohol Agricultural Promotion Center aims to develop and disseminate suitable technology for Boholano farmers, leading to increased agricultural production and farm family income.

To attain its objective, APC activities revolve around an integrated research, extension, and training system, creating solutions to immediate constraints of agricultural development in the province.

1980 - Master Plan (1979) was completed, identifying agriculture as the most important and strategic sector of Bohol's economy, and the need for the establishment of Bohol APC to accelerate agricultural development.

Series of JICA mission teams in cooperation with BIADP were dispatched to survey center project sites, later identified to be in Tagbilaran City, Bilar and Ubay.

1983 - Records of Discussions for the 5-year APC Project was signed by both governments, stipulating the grant of financial assistance by the Japanese government for the construction of the APC buildings.

Dispatch of JICA Short-Term and Long-Term Experts were initiated. Long-Term Japanese Experts, headed by a Team Leader, would compose the JICA Team to supervise the working units of APC, together with their Filipino Counterparts.

1984 - Construction of APC main center office facilities and experimental field was completed, and later on the completion of the experimental field and office facility in Bilar and Ubay sub-centers.

1985 - APC was inaugurated by Prime Minister Cesar E. Virata, Minister of Finance and NACIAD Chairman on February 16.

The Tubigon Vegetable Experimental Field for lowland vegetable production research and demo farm area was established.

1986 - Area Demo for vegetables under high elevation was set up, the program area called "Taytay - Mayana Intensive Vegetable Guidance Area."

The APC Carmen Pilot Farm was established, a 16-hectare rice demonstration area managed and cultivated

farmers. A 1.1 hectare experimental field was likewise set up within the pilot farm.

1987 - Overall Review and Evaluation of the APC Project was conducted prior to the termination period in February 1988. Joint evaluation was conducted by the Japanese Evaluation Team headed by Eiji Yamagiwa, Executive Director of JICA together with the Filipino Evaluation Team headed by Mauricio C. Feleciano, BIADP Project Director.

Two-Year Expansion of Japanese Technical Cooperation for the APC Project was recommended to the Joint Committee on December 4, 1987.

1990 - APC, DA Locally Funded Project. Operations have been sustained, giving emphasis to technology transfer programs.

1992 - Assignment of JICA Individual Experts to continue technical guidance and training.

The center's activities were then geared towards the Medium Term Development Plan of the Department of Agriculture which is the key production approach.

The present administrative scenario placed APC under the Regional Integrated Agricultural Research Center (RIARC) structure as Research Outreach Station (ROS) on lowland irrigated developmental zone. As ROS, it is mandated to develop and disseminate suitable technology for Boholano farmers and the Central Visayas leading to increased agricultural production and farm family income.

1995 - APC on an After Care Category of the JICA as a foreign assisted project of the Department of Agriculture. To accelerate the project activities, the JICA expects further technical cooperation.

1997 - APC Project (Phase II), another project - technical cooperation to complement the GPEP program and maximize crop production from the irrigation projects. The cooperation and partnership will serve as a common bond manifested in the concerted efforts for national stability and growth.

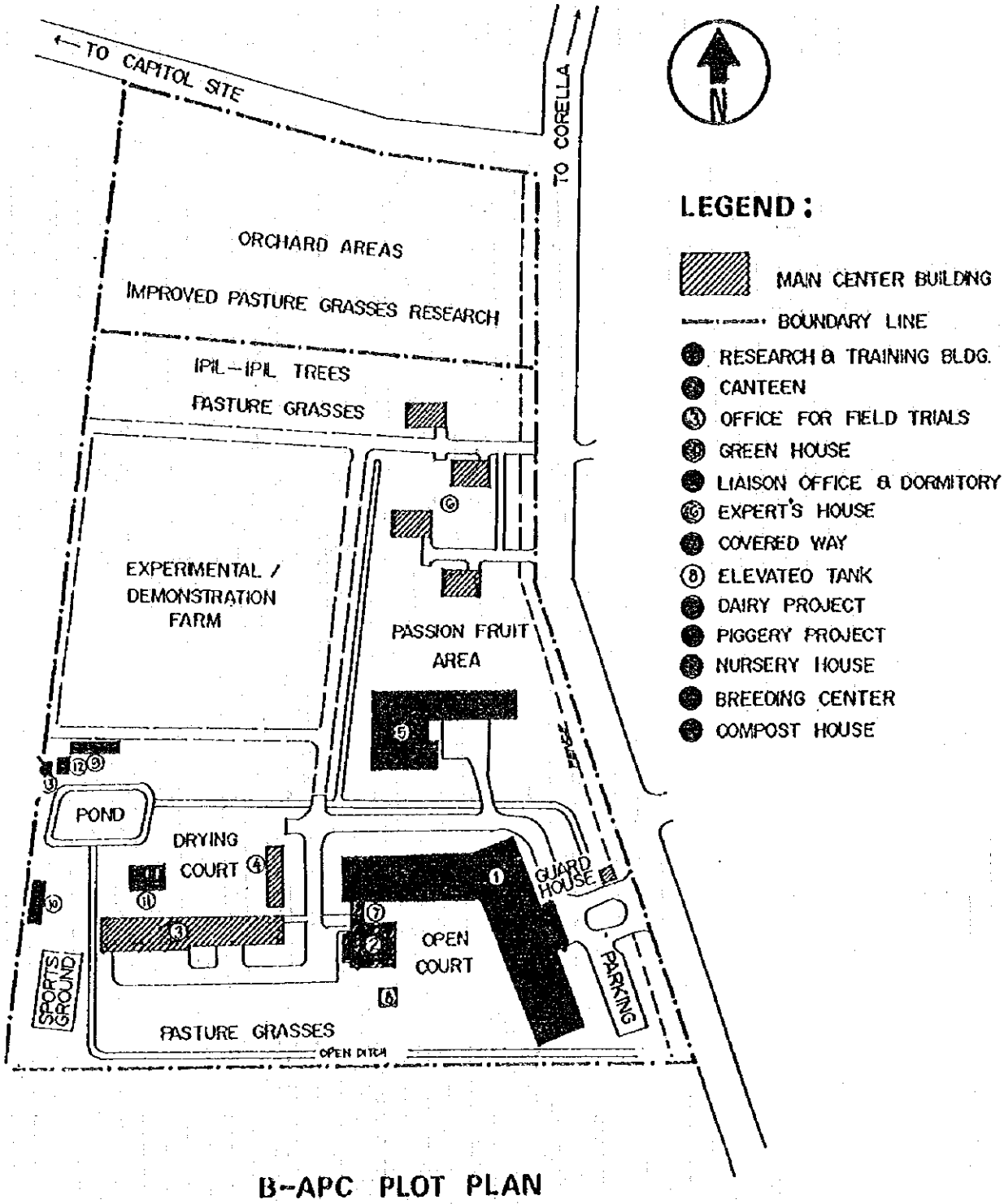
MANDATE

The Bohol Agricultural Promotion Center under Lowland Irrigated Developmental Zone aims to develop and disseminate suitable technology for Boholano farmers and the Central Visayas leading to increased agricultural production and farm family income.

To attain its objectives, APC activities revolve around an integrated research, extension and training system, creating solution to immediate constraints of agricultural development of the province and Central Visayas.

Specific Objectives:

1. Conduct research on Technology Verification (TV) Technology Dissemination (TD), Technology Generation (TG) within research agenda.
2. Information Generation/Dissemination outside the research area of LGUs.
3. Operate and maintain key research sites.
4. Maintain Data Bank.
5. Permit the use of research facilities for training.
6. Monitor and evaluate research results and feedback results.
7. Provide the LGUs with
    a. technical assistance in undertaking on-site research projects,
    b. training for the staff on the conduct of research,
    c. technical supervision on research project implementation
    d. initial foundation stock,
    e. support services for the implementation of TD/piloting activities through:
        1) training of LGU specialist
        2) packaging of research results for technology dissemination (TD)
        3) provision of prototype information material
        4) evaluation of extension and research strategies

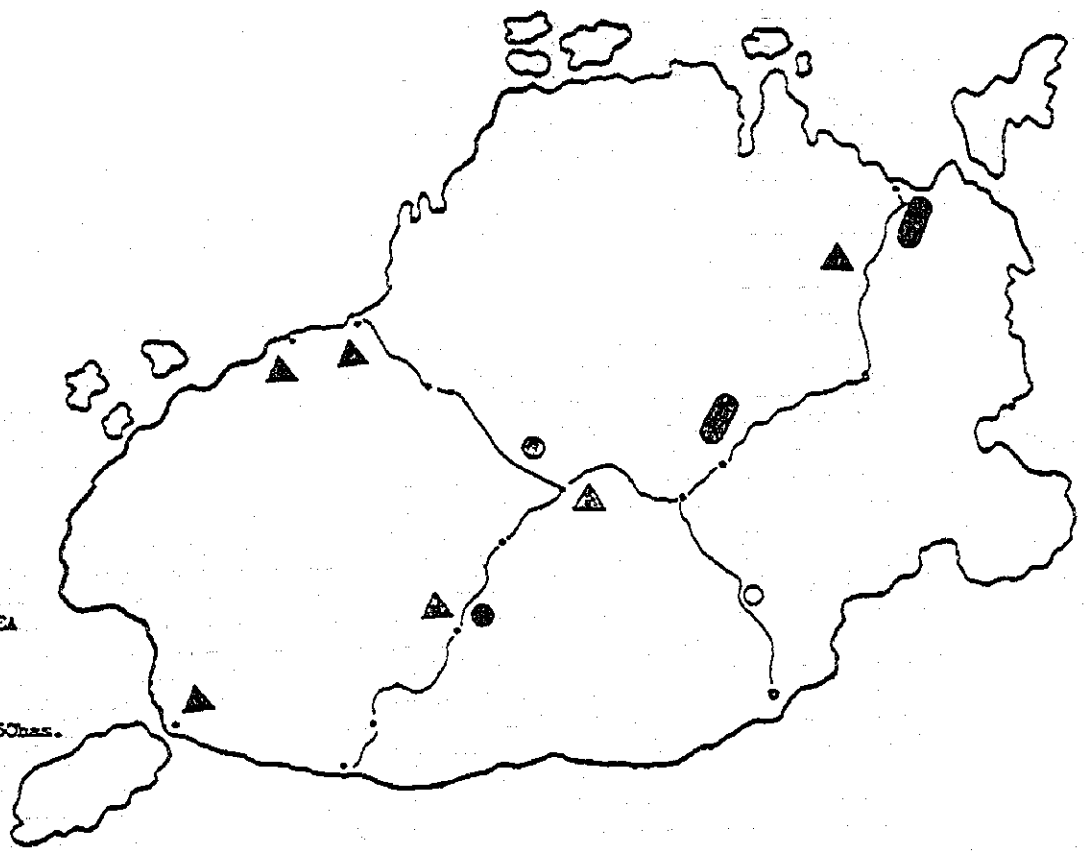


B-APC PLOT PLAN

SCALE 1:2000 MTS.

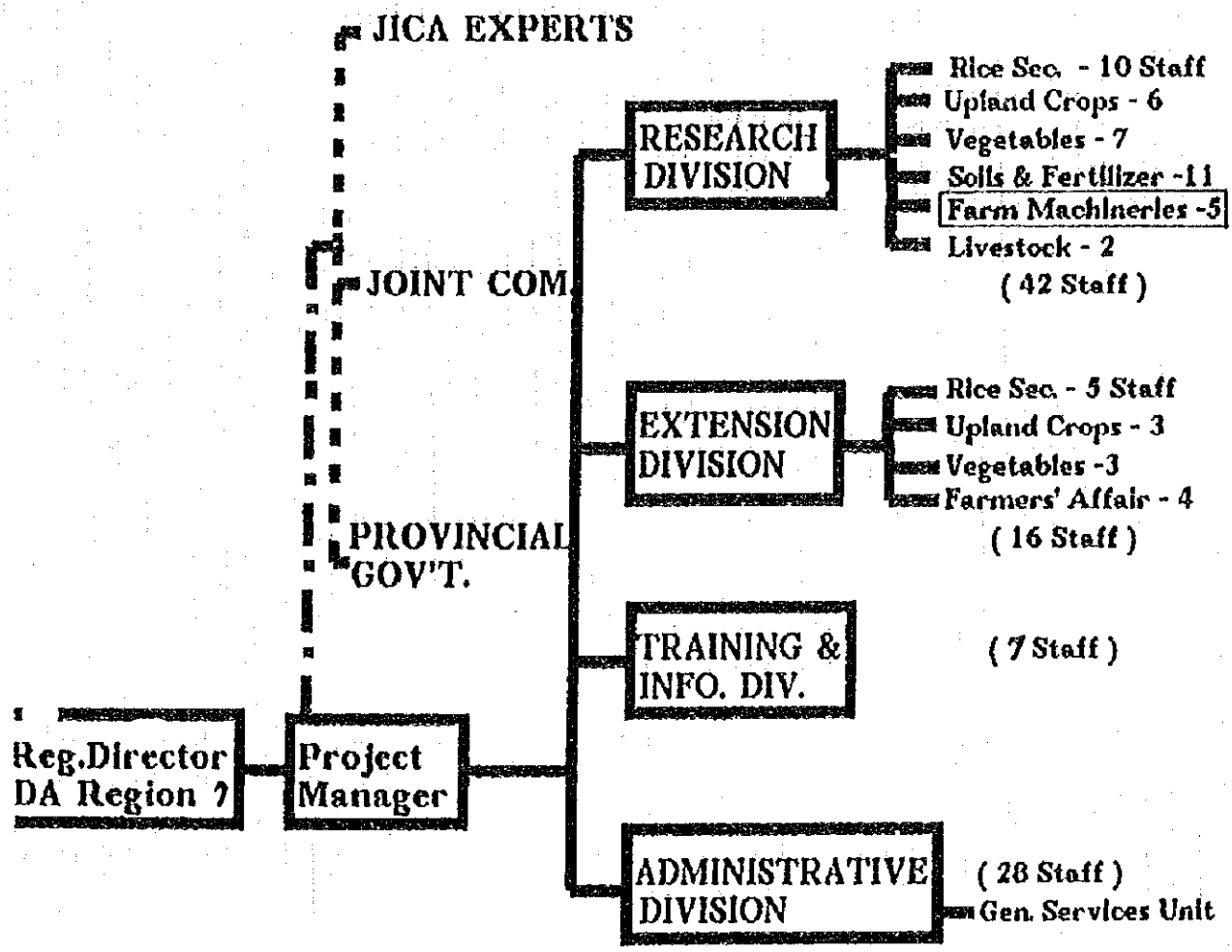
L E G E N D

- APC MAIN CENTER
  EXPERIMENTAL FIELD: 1ha.
  UPLAND CROPS, VEGETABLES
- APC BILAR
  RICE 2.5has.
- APC CARMEN PILOT FARM
  RICE 16.2has.
- UBAY SUB-CENTER
  RICE 2.0has.
  UPLAND CROPS 1.0ha.
- APC TUBIGON
  VEGETABLES 1.0ha.
  RICE 0.3ha.
- CLARIN FRESH
  WATER FISH FARM
- SMALL PUMP IRRIGATION
  PROJECT - BILAR 12.5has.
- SMALL PUMP IRRIGATION
  PROJECT - CARMEN 12has.
- MAYANA, JAGNA
  VEGETABLES INTENSIVE GUIDANCE AREA
- WAHIG PAMACSALAN IRRIGATION
  PROJECT 5000has.
- CAPAYAS IRRIGATION PROJECT 750has.

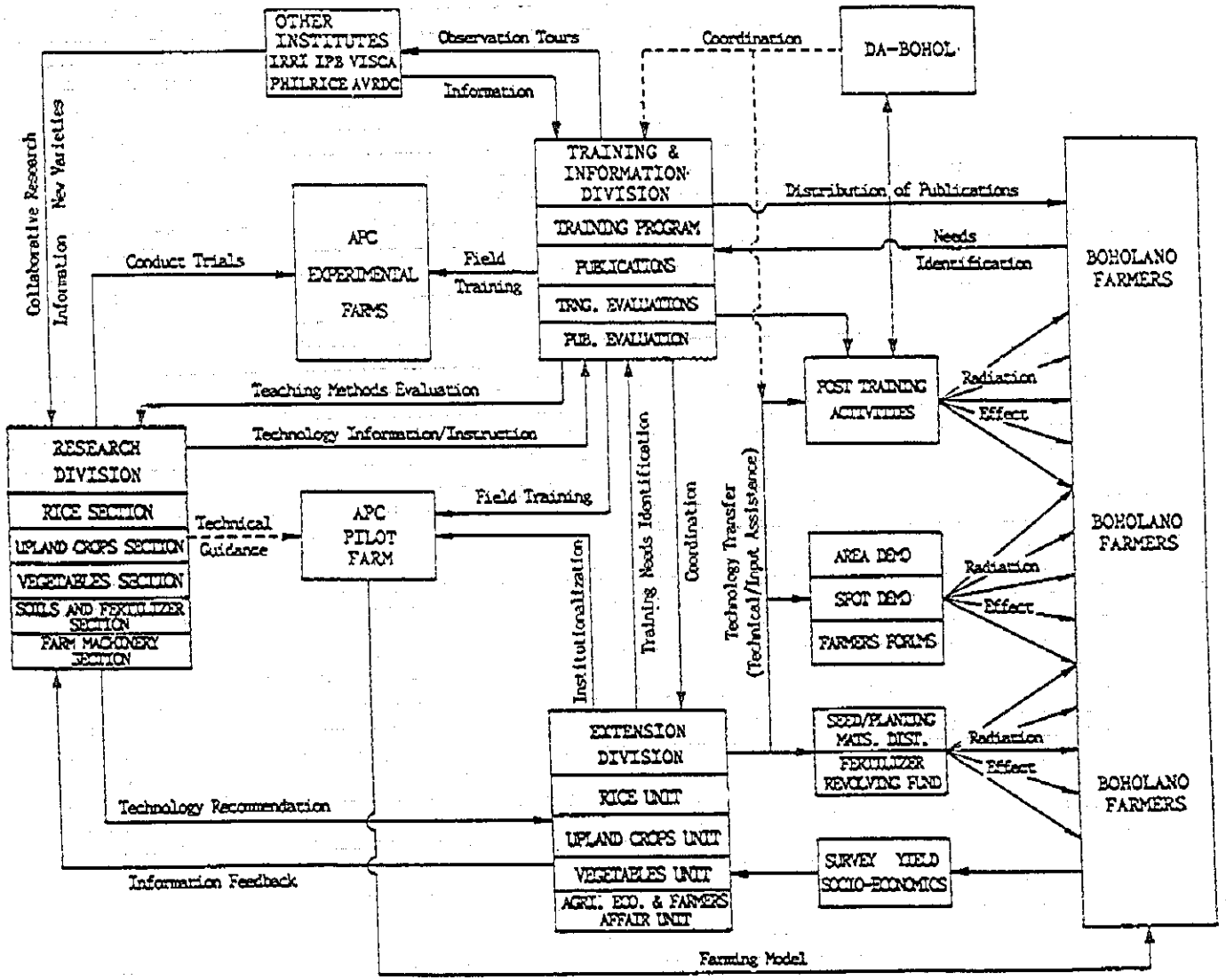


SPOT MAP OF THE BOHOL APC
AND IRRIGATION PROJECT SITES

ORGANIZATIONAL CHART



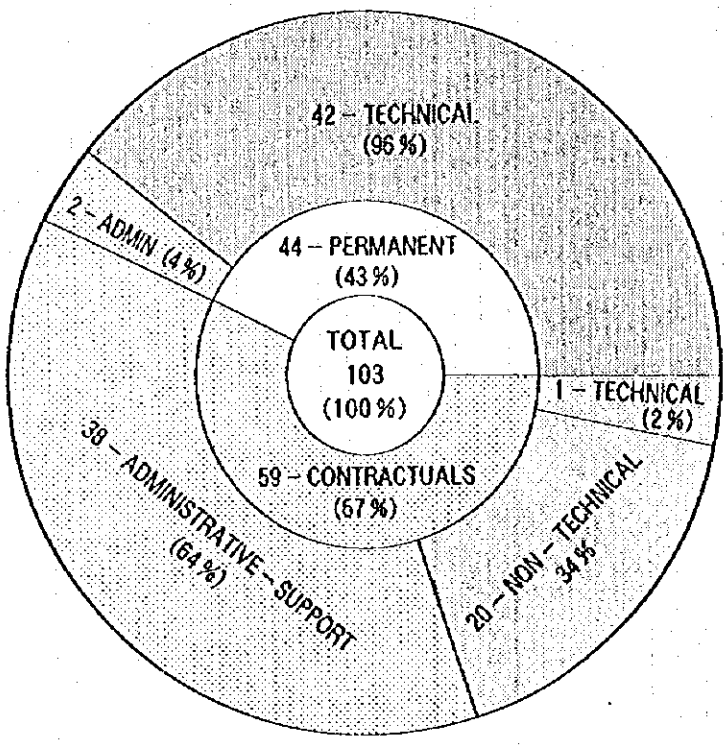
FARM MACHINERIES TO BE CHANGED TO AGRICULTURAL ENGINEERING SECTION TO SUPPORT IMPLEMENTATION OF INFRASTRUCTURE PROJECTS OF THE DA IN REGION VII.



Schematic flow of the APC integrated research, extension and training activities

BUDGET OF BOHOL APC

PARTICULAR	1992 (P)	1993 (P)	1994 (P)	1995 (P)	1996 (P)	TOTAL (P)
PS	2,330,600	2,076,000	2,076,000	2,755,167	2,076,000	11,302,006
MOOE	3,567,000	5,000,000	5,601,000	6,018,000	6,319,000	27,401,000
CAPITAL OUTLAY		1,000,000				1,000,000
TOTAL	5,900,600	8,902,000	7,727,000	8,773,167	8,395,000	39,783,006



WORKFORCE OF B-APC

Department of Agriculture
BOHOL AGRICULTURAL PROMOTION CENTER
Dao District, Tagbilaran City

ANNUAL ACCOMPLISHMENT REPORT CY 1995

BANNER PROGRAM / ACTIVITY	KGDA (GPEP-Rice)		KCCDP	
	A.TARGET	% ACCOMP	A.TARGET	% ACCOMP
A. Research (No. of Trials)	25	100		
Peanut			3	66.7
Ubi Kinampay			2	100
B. Production				
b.1 Registered Seeds	150	88		
b.2 Good Seeds	300	87		
b.3 Peanut (Area Planted)			2	57.5
b.4 Ubi Kinampay			0.05	80

Dao District, Tagbilaran City

ANNUAL ACCOMPLISHMENT REPORT CY 1995

BANNER PROGRAM / ACTIVITY	KGDA (GPEP-Rice)		KCCDP	
	A.TARGET	% ACCOMP	A.TARGET	% ACCOMP
C. Technical Assistance				
c.1 Reg.Seeds Distributed	50	100		
c.2 Good Seeds Distributed	65	100		
- Peanut (kg.)			300	3
- Ubi Kinampay			250	99
c.3 Area Demo Established	9	100		
c.4 Techno Demo Established	2	88		
- Peanut			3	33
- Ubi Kinampay			6	116
c.5 Trainings Conducted	4	100		
- Peanut			2	100
c.6 FRF Area Covered	350	107.5		
c.7 Survey Conducted	3	100		
c.8 Farmers Field Forum	6	100		
c.9 Farmers Meeting	100	100		
c.10 Orgns. Strengthened	5	100		
c.11 Trichoderma Production	1200	100		
c.12 Soil Testing/Lab Services	300	161.5		
c.13 Documentation	5	100		

Department of Agriculture
BOHOL AGRICULTURAL PROMOTION CENTER
Dao District, Tagbilaran City

ANNUAL ACCOMPLISHMENT REPORT CY 1995

NON-BANNER PROGRAM / ACTIVITY	RICE		UPLAND CROPS		VEGETABLES		LIVESTOCK	
	A.TARGET	% ACCOMP	A.TARGET	% ACCOMP	A.TARGET	% ACCOMP	A.TARGET	% ACCOMP
A. Research (No. of Trials)	3	100	8	100	28	100	5	100
B. Production (Area Planted)					0.185	81		
b.1 Corn			2.5	42				
b.2 Cassava			2.5	-				
b.3 Mungbean			0.1	50				
b.4 Dairy- Milk (liters)							180	122
- No.of Heads Reared							5	140
b.5 No. of Poultry Dispersed							16	100
b.6 Forage/Pasture Developed							1	100

Department of Agriculture

BOHOL AGRICULTURAL PROMOTION CENTER

Dao District, Tagbilaran City

ANNUAL ACCOMPLISHMENT REPORT CY 1995

NON-BANNER PROGRAM / ACTIVITY	RICE		UPLAND CROPS		VEGETABLES	
	A.TARGET	% ACCOMP	A.TARGET	% ACCOMP	A.TARGET	% ACCOMP
C. Technical Assistance						
c.1 Farm Demo Established					14	114
- Corn			13	53		
- Cassava			4	-		
- Mungbean			2	-		
c.2 Seed Distributed					3,000 gm.	116
- Corn (kg.)			1,250	23		
- Mungbean			15	83		
c.3 Survey Conducted					3	on-going
c.4 Farmers Meeting	64	-	-	-	-	87.5
c.5 Trainings Conducted					2	200
- Multi-Commodity	1	-	-	-	-	300
- Social Technology	1	200			1	200
c.6 Staff Development Trngs.	8	-	-	-	-	87.5
c.7 Workshop Conducted	9	-	-	-	-	100
c.8 Post-Trng. Kits Delivered	120	-	-	-	-	119
c.9 Monitoring/Documentation	5	-	-	-	-	100
c.10 Training Impact Eval.	1	-	-	-	-	on-going
c.11 APC Review Conducted	3	-	-	-	-	100
c.12 Video Production	1	100				
c.13 Publication(No.of Copies)						
- Revised APC Brochure	200	-	-	-	-	on-going
- Annual Report 1995	100	-	-	-	-	on-going
c.14 Observation Tour	1	-	-	-	-	-
c.15 Micro-Nutrient & Herbal Garden Maintained	2	-	-	-	-	100

Department of Agriculture
BOHOL AGRICULTURAL PROMOTION CENTER
Dao District, Tagbilaran City

HIGHLIGHTS OF ACCOMPLISHMENT
CY 1995

For this crop year 1995, we have made some great strides in accomplishing what was blue printed.

To date, we had fully supported the MTADP especially the GPEP. Practically we are the GPEP frontliner in Bohol province. The following projects or activities had been given the full support of APC :

1. Rice Techno Demo / Seed Distribution
2. STW
3. MPDP
4. Conduct and facilitation of KASAKALIKASAN Training of Trainers and Farmers' Field Schools on Rice IPM
5. Farm Machinery Demonstration
6. Farm Supply Component

Having a dual personality as ROS and as a Special Project, we also had other non-banner programs through our triad approach on research, extension and training programs. In total, we had conducted 43 studies and 35 technology transfer activities. We also had started institutional development efforts for organized farmers like social technology transfer and strengthening of internal resources.

We were also able to host and facilitate National MANCOM and visits of foreign and local constituents. At this point in time, the total head count is 1,525 with a monthly frequency average of seven (7) batches. All of these succeeded through our concerted efforts and strong linkage with LGUs and NGOs, supported with our operational budget of P 8 M.

Simply put, "we are bridging peoples and breaching technological walls."

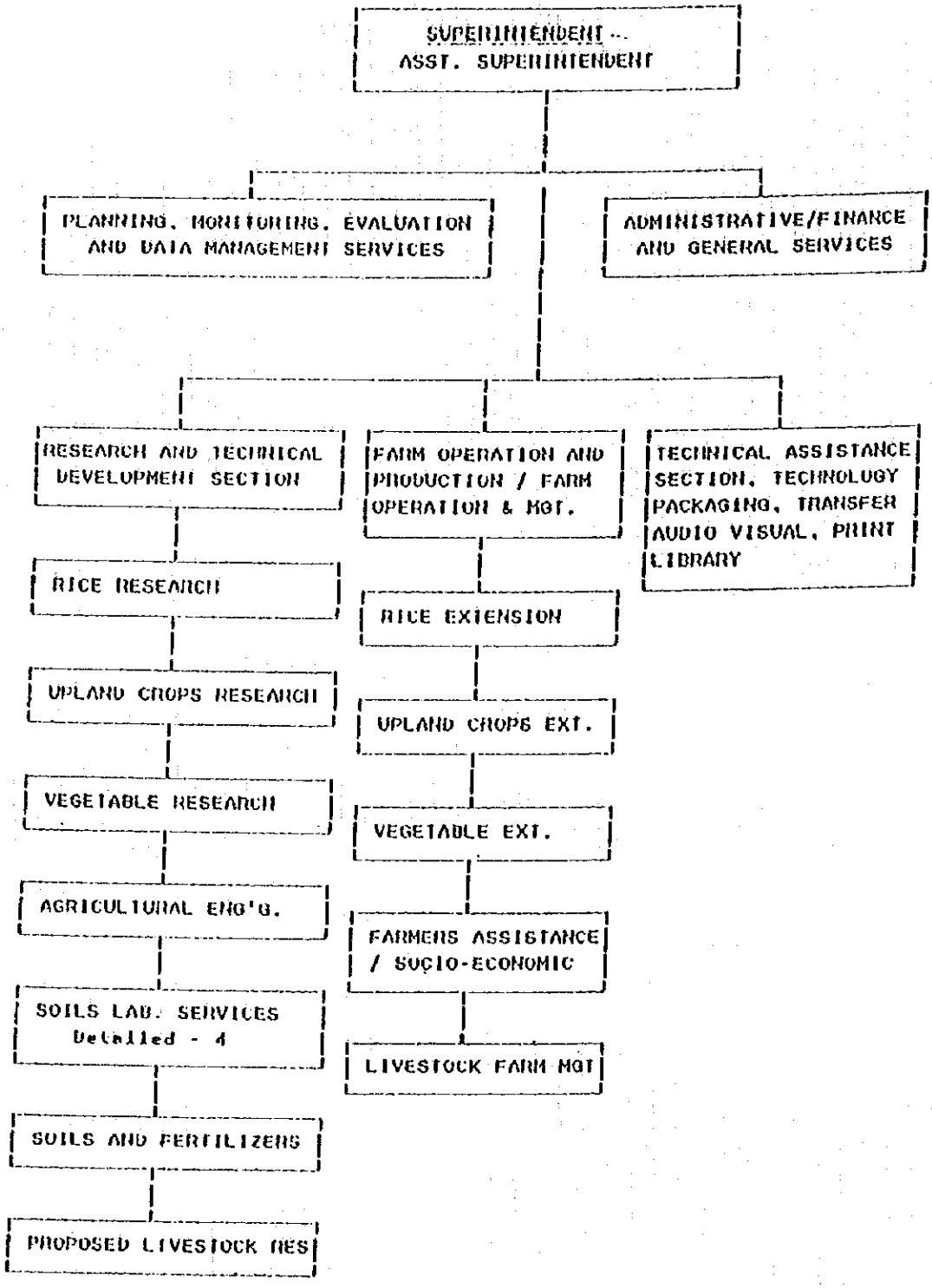
PEOPLE'S / FARMERS' ORGANIZATION SERVED BY BOHOL APC

BASED ON CROP COMMODITY

Crop Commodity	No. of Org'ns.	No.of Members	Activities w/ APC
Rice	13	> 2,000	Crop technology transfer & institution building through cooperative formation, capital build-up & social tech.
Upland Crops	6	397	Crop technology transfer.
Vegetables	5	85	Crop technology transfer & institution build-up through cooperative formation & capital build-up.

BOHOL AGRICULTURAL PROMOTION CENTER
Dao District, Tagbilaran City

PROPOSED R.O.S. LOWLAND IRRIGATED ORGANIZATIONAL STRUCTURE



RICE CROPCUT YIELD SURVEY

To determine the rice farming situation in Bohol Province, cropcut yield survey was done twice over the nine(9)-year period (1985 - 1994). Through this survey, it was aimed to draw information on actual farmers cultural management practices in relation to yields obtained throughout the province, identify the constraints to attain higher yield and determine the rippling effect on the adoption of APC recommended technology.

Throughout the province, sampling was done to randomly selected farmer's field. Two (2) four square meter cropcuts were made to each farmer's field. Harvest processing, weighing and yield computation at 14 % MC were done right in the field.

Simultaneously, personal interviews based on prepared forms were also conducted to the farmer-tiller of the sampling site. The farmer's profile, rice cultivation management practices and other related aspect to rice farming were recorded, processed and analyzed.

The number of sampled respondents differed over the sampling periods. Only 100 samples were taken in 1985 while 204 samples in 1994, both of which were randomly selected. Selection in 1994 was at 1 sample for every 200 ha. rainfed rice field and 1 sample for every 100 ha. irrigated rice field.

Results

A yield increase of 39.72 % was observed during the 1994 survey when compared against the 1985 survey. As shown in Figure 1. Low yields were obtained in alkaline areas while greater yields in acidic coastal areas.

Cultivar Used and Its Relation to Yield

The use of local cultivar had declined in 1994 down to 8.5 % from 43 % in 1985 (Fig. 2.0). The 1994 survey revealed a greater percentage adoption of HYV's both new and old with inclusion of introduced cultivars, majority are imported from Mindanao.

Figure 3.0 shows the influence of cultivar used to yield. Higher yield were obtained from the HYV's and introduced variety when compared to the local cultivar.

Types of Rice Field as to Yield

Majority of the rice fields in the province are rainfed (Fig. 4.0). It could be observed that greater yields at an average of 4.5 tons/ha. could be obtained from irrigated paddy fields (36.5 %).

Fertilization in Relation to Yield

Yield due to fertilization had the same trend during both survey periods. As fertilization increased, a corresponding yield increase could also be attained. It was found during the 1994 survey that average total fertilization increased to 53 kg. NPK/ha. (Table 1).

Net Income

Due to the changes in the rice cultivation management practices (Table 1). a significant 59.8 % increase of farm net income in 1994 had been achieved based from the 1985 net income of P 5,300.00.

Conclusion / Recommendation

Presently, the average yield of Bohol is 1.12 tons/ha. higher (3.94 t/ha.) compared to that of 1985. This significant yield increase and improvement was due to the changes in rice cultivation techniques as recommended by Bohol APC and adopted by the Boholano farmers.

It is a fact that Bohol APC had made headways in changing the rice farming scenario of the province through the rippling effect of its technology transfer programs. Its present administrative status, being a Research Outreach Station for Lowland Developmental Zone of the RIARC system, Bohol APC has envisioned to make the province the food basket. It will continue to extend its efforts towards a more effective and productive farming options for Bohol and the region as well.

Based from the findings, it is therefore recommended to use HYV's and resistant cultivars in order to increase production. Likewise, this should be coupled with the appropriate and sound cultivation management practices such as proper cultural management, fertilizer management, pest and diseases management, water management and post production management. All of these are incorporated in the Bohol APC rice production technology.

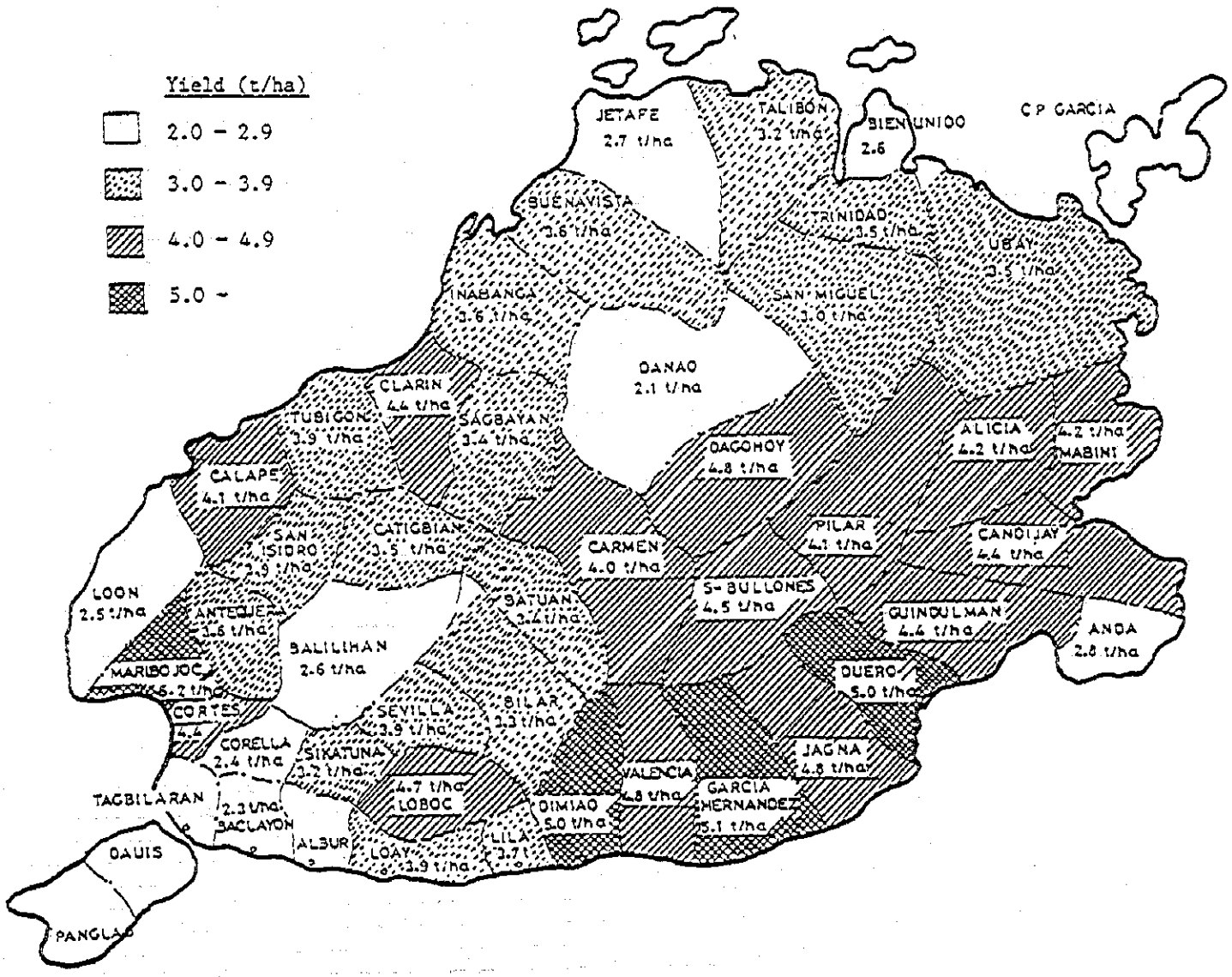


Figure 1.0. Rice yield map of Bohol (1994 Survey)

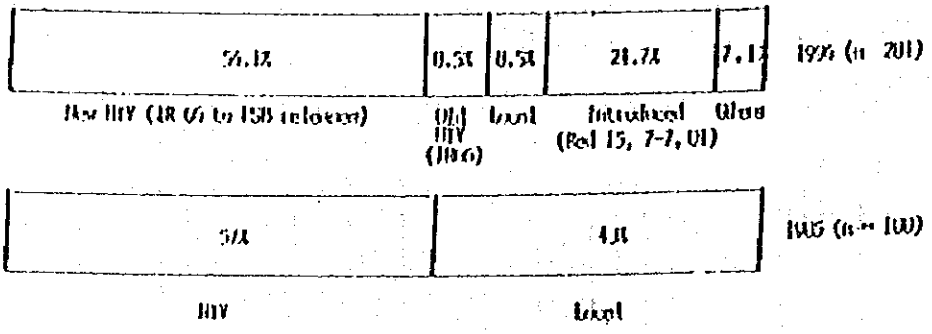


Figure 2.0 Percentage of farmer-respondents adopting the different rice cultivars identified in the yield surveys conducted (Bohol, 1985, and 1994).

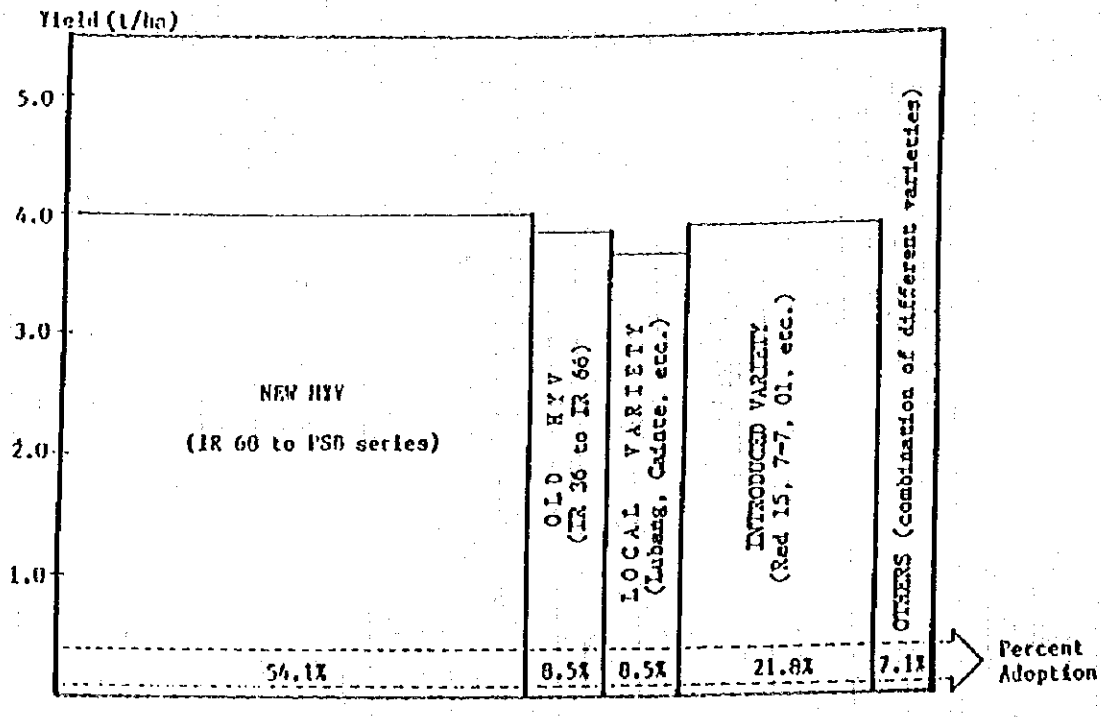


Figure 3.0 Yield obtained from 281 farmers' fields in relation to varietal use and percentage adoption of different varieties by farmer-respondents (1994 Yield Survey).

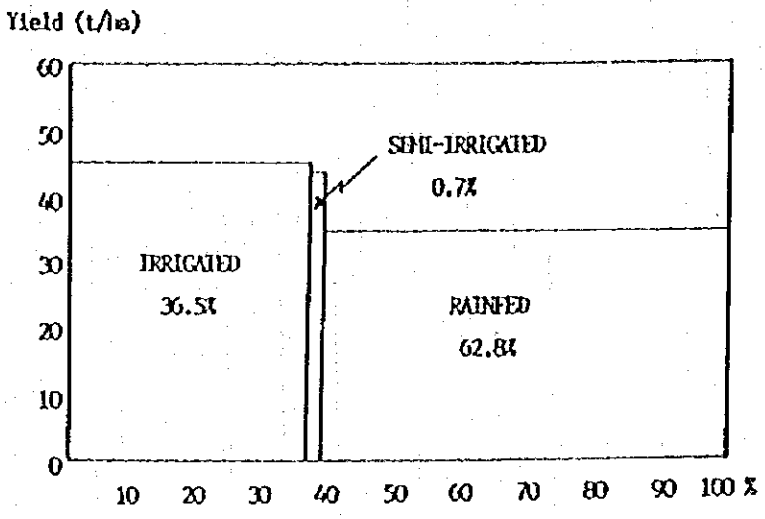


Figure 4.9 Yields (t/ha) on types of rice field and its distribution of respondents (1994).

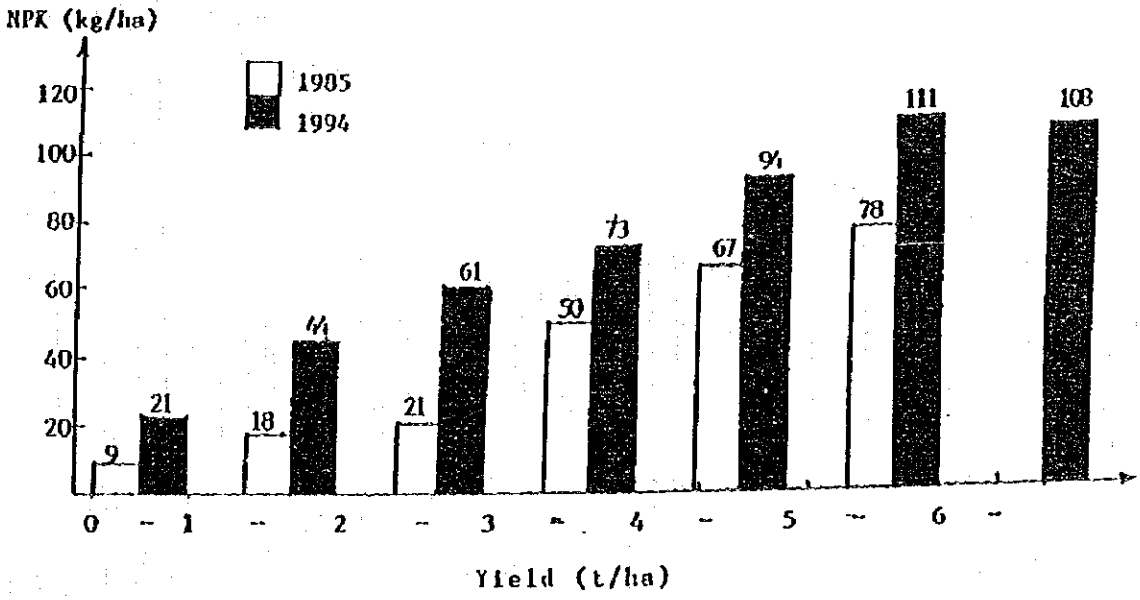


Figure5 .0 Mean NPK application of the different yield levels attained at the farmers' fields (1985 and 1994 Yield Surveys).

RICE CROPCUT YIELD SURVEY

PARTICULARS	1985 SURVEY		1994 SURVEY	
No. of Respondents	100		284	
Average Yield	2.82 t/ha		3.94 t/ha	
Planting vs. Yield	Respondents	Yield (t/ha)	Respondents	Yield (t/ha)
Straight				
One-way	) 4 %	) 2.53	11.9 %	4.17
Two-way	)	)	17.3 %	4.42
Random	96 %	2.89	65.8 %	3.94
Direct Seeding			5.0 %	2.58
Average Fertilizer Application	Element	(kg/ha)	Element	(kg/ha)
	N	16	N	40
	P	9	P	26
	K	9	K	21
		-----		-----
	Total	34	Total	87
No. of hills/sq.m.	Respondents		Respondents	
16.9	11 %	2.11	0.8 %	4.57
17 - 21.9	24 %	2.71	12.3 %	4.05
22 - 26.9	26 %	2.74	34.5 %	4.06
27 - 31.9	18 %	3.41	30.6 %	3.90
32 - 36.9	15 %	3.15	14.9 %	3.83
37	5 %	3.58	6.8 %	3.32
Age of Seedling at TP (DAS)				
16	19 %	3.13	30.1 %	4.20
17 - 21	24 %	3.51	41.4 %	4.14
22 - 26	22 %	2.89	13.2 %	3.92
27 - 31	11 %	2.81	11.2 %	3.72
32 - 36	11 %	2.26	2.0 %	3.47
37	13 %	1.92	2.0 %	3.62
Weeding Frequency				
No weeding	23 %	2.13	0.8 %	4.24
Once	58 %	2.99	89.1 %	4.00
Twice	18 %	3.45	10.1 %	4.58
Thrice	1 %	3.67		
Frequency of Spraying(Insecticide)				
None	66 %	2.67	58.8 %	4.01
Once	28 %	3.22	31.0 %	3.92
Twice	6 %	3.69	7.04 %	3.45
Thrice			1.06 %	3.92
4 x			0.35 %	4.19
No Data			1.76 %	3.54
Net Income	P 5,300.00		P 8,857.00	

ATTACHMENT

6 - 1

DETAIL INFORMATION ABOUT APC AND PHILIPPINE DEVELOPMENT PLAN, etc.

Bohol APC in Relation to National Development

Based on the operations of the National DA, Bohol APC is assigned to the development of the Crops Sector. As proposed will be under the RIARC structure, she is designated as ROS for lowland irrigated development zone in Region VII.

Allotment Plan of Budget and Project Personnel to BAPC

For Fiscal Year 1996, a total budget of P8,365,000.00 broken down into:

Personnel Services	(PS)	=P2,076,000.00
Maintenance, Operating & Other Exp.		= 6,319,000.00

Expected Cooperation of Japanese Government to BAPC

Another Project Type Technical Cooperation Program (PTTCP) to further develop and strengthen research and development programs of the Crops Sector. The project will be conducting participatory researches on technology adaptation and verification particularly on rice-based cropping system giving emphasis on post production technology, marketing, soil and water management and integrated farming system with vegetables and upland crops . She will also improve and intensify technology transfer activities through extension and training in line with the needs and thrusts of the LGUs and support to ATI.

Opinion Regarding APC and ATI Project in Bohol

APC and ATI are complimentary agencies. The ATI as the Training arm of the DA tap APC as technical resource persons specifically with regards to the Crops Sector. Outside of ATI's targets, BAPC conducts training programs requested by the LGUs and NGOs.

Division of Work or Task of LGU and DA in Agricultural Sector

The extension function of DA had been turned over to the DA-LGU. Municipal Agricultural Office had been devolved to the Local Government Unit last Fiscal Year 1993.

Expected Activity and Contribution of APC

Provide the LGUs with

a) technical assistance in undertaking on-site research projects,

b) training for the staff on the conduct of research,

c) technical supervision on research project implementation,

d) initial foundation stock

e) support services for the implementation of TD / piloting activities through:

e.1 training of LGU specialist
e.2 packaging of research results for technology dissemination
e.3 provision of prototype informal material
e.4 evaluation of extension and research strategies

Evaluation of DA in Regard to Accomplishment / Achievement Made by APC

APC made a headway along the line of its objective by integrating its research, extension and training functions, creating a total component in answer to farmers needs. It has generated crop technologies for Bohol and formulated Extension and Training approaches, relying on feedbacks to improve its program. The rippling technology adoption led to increased in crop production and net family income of Boholano farmers.

Practically, APC had penetrated the entire province in close linkage with the LGUs and line agencies Its direction is clear, relevant and necessary for the Crop Sector, and an asset to the operation of the Regional Field Unit.

Role and Functions of National Food Authority

Under the NFA's reoriented thrusts, the focus has been shifted from one of direct market intervention to stabilize grains supply and prices, to a service - oriented corporation whose main objective is to provide food security to all Filipinos at all times, and still indirectly stabilize grains supply and prices.

As a Service Corporation, the NFA will be taking a more pro-active role in national development. Through its various flagship programs, the agency offers its helping hand further increasing the viability of farmers cooperative and ensuring their rightful contribution to countryside development.

6 - 2
RICE CULTIVATION / AGRICULTURAL EXTENSION AND TRAINING

1. Covering Area of GPEP in the Province and Area Allotment of Municipalities.

	Municipality	Area Allotted (has.)
1.	Alicia	250
2.	Batuan	200
3.	Bilar	165
4.	Candijay	350
5.	Carmen	250
6.	Clarin	150
7.	Dimiao	125
8.	Duero	150
9.	Garcia - Hernandez	487
10.	Guindulman	110
11.	Inabanga	65
12.	Jagna	110
13.	Lila	75
14.	Loboc	25

15.	Mabini	50
16.	Maribojoc	100
17.	Pilar	500
18.	Sierra - Bullones	200
19.	Talibon	100
20.	Tubigon	75
21.	Ubay	350
22.	Valencia	190

Total = 4,077 has.

2. **Subsidy or any supporting services provided to GPEP farmers beside fertilizer revolving fund.**

    1. Seed production - production of registered seeds for seed growers.

    2. Facilitate in the conduct of Season - Long Trainings on KASAKALIKASAN Integrated Pest Management on Rice [Training of Trainers (TOT) and Farmers Field School (FFS)].

    3. Facilitate in the conduct of Rice Techno Demo throughout the province.

    4. Two (2) APC personnel as seed inspectors to seed growers in ten (10) GPEP municipalities. They also served as coordinators of the newly trained seed inspectors assigned in said municipalities.

    5. Assist in facilitating the construction of multi - purpose drying pavements in GPEP municipalities.

3. **Important production factors to maximize production (in order of importance) :**

    1. Irrigation water - its availability and management

    2. Farmers' Technical knowledge on production techniques:

        - Maintenance of Soil Fertility and Productivity - Proper soil management through the utilization of indigenous organic materials as fertilizer in combination with chemical organic fertilizer and proper cultural management practices.

- Proper Pest and Disease Management - Management of pest and diseases with environmental consideration for sustainable agriculture development.

3. Capital for the following:

   - seeds
   - fertilizers
   - labor for farm operations
   - machineries & implements

4. **Cooperation and supporting plan to agricultural sector of the LGU :**

   1. Seed Production - Production and multiplication of new rice varieties for seed distribution to the farmers.

   2. Fertilizer Assistance through the APC - JICA fertilizer revolving fund - granting of fertilizer loans to farmers which are payable after harvest without interest.

   3. Technical Assistance - in terms of
      - demo farms establishment
      - conduct of Season - Long Training on KASAKALIKASAN Rice IPM through Farmers Field Schools (FFS).

   4. Institutionalization and strengthening of assisted farmer groups - continued assistance and supervision on the capital - build up (CBU) scheme with the guidance on the proper financial management such as bookkeeping, record keeping and the formulation of the financial policies.

5. **Role and Function of NFA**

   1. NFA will buy the grains produce by the members of the farmers' group, subject to NFA specifications and conditions.

   2. To extend the lease / rental program to farmers' group on available post harvest facilities and to grant all allowable procurement incentives in accordance with NFA existing guidelines and procedures.

3. To allow the farmers' group availment of the NFA's MTS lending program in accordance with NFA existing guidelines and procedures.

6. Present activity of APC with Irrigators' Association in CIP

1. Rice Seed Distribution - Distribution of New Rice Varieties to some farmer beneficiaries for multiplication and redistribution to other farmers.

2. Fertilizer assistance through the APC - JICA Fertilizer Revolving Fund.
3. Establishment of rice demo farms.

4. Strengthening of farmer groups (Irrigators Association)

    * through capital build-up scheme (CBU) - to strengthen the groups financial capability

    * through trainings on record keeping and bookkeeping

    * through social technology training (value reorientation) - to promote sound interpersonal relationship among group members.

It is envisioned that these farmer groups (Irrigators Associations) will become a full pledge cooperative in the future.

7. Rice Cropping status in Capayas Irrigation Project (CIP) and reaction of the beneficiaries.

Generally, the farmer beneficiaries of the Capayas Irrigation Project (CIP) enjoy two (2) cropping seasons per year. This follow the pattern of rice-rice then fallow period. However, synchronize planting is being affected by the following constraints :

1. Irrigation Water Distribution - This is the most common complain of the farmer beneficiaries particularly in Lateral C and part of Lateral B, which in effect cause the delay in planting.

2. Delay in Land Preparation - This is a product of the aforementioned

problem which is also coupled with the dependence of most farmer - beneficiaries on work animals like carabaos. The farmers are very optimistic that this problem can be solved or minimized provided that farm machineries and equipment are available.

Past records showed that 96% of the farmer beneficiaries planted the PSB varieties while the remaining 4% planted other modern high yielding varieties. The average yield for the last cropping season was 5.25 tons per hectare.

6 - 3

AGRICULTURAL MACHINERY

1. Future Plan and Scope of Farm Mechanization

The proposed farm mechanization program under phase II is aimed at the possibility of mechanizing the major farm operations like land preparation, planting, weeding and harvesting. This would answer to the problem of labor availability during peak periods which is expected to worsen in the future, and lack of draft animals for farm operations. The scope of the farm mechanization program includes:

a) the assessment of the needs of farmers in terms of machinery
b) testing, evaluation and improvement of the performance of existing farm machineries
c) identification and introduction of farm machineries / equipment suited for Bohol farming conditions
d) design and improvement of identified farm machineries / equipment suited for Bohol farming conditions
e) establishment of a mechanized model farm which will serve as a show window for farmers.

2. Why IRRI type or prototype machinery (local made) are not introduced for Bohol province ?

For the past years, Bohol APC had very limited programs on farm mechanization. Very few farm machineries were tested. No other agency in the province is promoting farm mechanization program. However, at present under the GPEP, a lot of farm machines will be introduced to our local farmers. This machines are mostly developed by PhilRice engineers.

3. **To expand the activities in the Irrigation Project area, do you have plan to introduce mechanization?**

Yes, mechanization is necessary in big irrigated areas. This is to ensure that farm operations are done in time with irrigation schedule. Mechanization of labor - requiring activities like transplanting, weeding and harvesting is important to minimize problems on labor availability especially during peak periods.

6 - 4

WATER MANAGEMENT

- **What do you request for Preparatory Study on water management for better irrigation in the newly built Capayas Terminal Irrigation Project ?**

The following are the proposed areas of concern or researches for preparatory study on water management :

A. Maximization of Water Utilization

a.1 Crop Water Requirement / Consumptive Use
a.2 Control or Reduction of Water Losses (Conveyance, Distribution & Farm Losses)
a.3 Develop Suitable Scheme of Distribution and Application of Irrigation Water through :
- Reduction of Drainage Problems
- Timely Delivery & Re-use of Water

B. Rice - Water Responses Studies

b.1 Crop Production Responses to Different Levels of Water Application
b.2 Impact of Water Stress at Different Stages in Plant Growth on Yields
b.3 Interactions Among Irrigation, Fertilizer and Other Inputs Influencing Yields

C. Other Crops (Upland & Vegetables) - Water Responses
[more or less the same parameters with B]

D. Agro-Economic Study on the Returns to Water from Rice, Upland and Vegetable Crop Production

E. Establishment of Cropping Pattern/s and Cropping Calendar

With the proposed researches, the following inputs will be needed in the implementation :

A. Technical Assistance

1 Irrigation Engineer
1 Soil and Water Conservation Engineering Expert

B. Instruments / Equipment / Facilities

Meteorological Stations fully equipped with highly sophisticated equipment
Staff Gages
Streamflow Gauging Stations
Lysimeters
Tensiometers
Soil Augers
Weirs
Portable Parshall Flumes
Stop Watches
Soil Moisture Meter
Soil Sample Buckets
Computer Units with Printer
Photocopier
Vehicles
Other accessories and materials needed in conducting water management studies

- **Present situation of water shortage in Capayas Irrigation Project (CIP)**

(NIA did not give the data. They will be the one to present it during the discussion.)

- **Situation of coordination between APC and Irrigation Project Office of NIA in water management fields.**

At present, there is no coordination between APC and Irrigation Project Office of NIA in water management fields; but in the future wherein R & D activities on water management will be conducted, a lot of coordination will be done between the two parties particularly on the provision of first hand or available data, use of irrigation facilities in the conduct of researches, and some collaborative undertakings in technology transfer.

- **Present situation and progress of farm improvement in CIP**

(NIA will be the one to present.)

- **Information regarding " The Irrigation Crisis Act of 1995 "**

(NIA did not give us the information. They will be the one to discuss it.)

- **Present status and construction schedule of Bohol Irrigation Project (BIP)**

(c/o NIA)

- **Present Activity of APC with Irrigators' Association in CIP.**

APC has no activity on water management with Irrigators' Association in CIP; however its future plan will delve on the development and generation of suitable technologies on integrated water management. Presently, package of crop technologies developed by APC had been disseminated through its technology transfer programs. The beneficiaries of the CIP had adopted and applied the rice production technology since crop year 1991.

研修参加実績

COUNTERPART TRAINING IN JAPAN

NO.	NAME OF COUNTERPART	EDUCATIONAL ATTAINMENT	CONTENT OF TRAINING	TRAINING INSTITUTION	PERIOD OF TRAINING	ASSIGNMENT PERIOD AT BAPC	PRESENT OCCUPATION
1	Alejandro T. Piezas	BS Agriculture	Extension & Training Methods	TIC - JICA	Aug. 1985 - Nov. 1985	May. 1983 - present	Municipal Agriculturist Officer*
2	Ruperno V. Batingal	BS Agriculture	Physiology & Ecology of Upland Crops	Kyushu Nat'L. Agri. Expt. Stn.	July. 1986 - Feb. 1987	Oct. 1985 - present	Municipal Agriculturist Officer*
3	Vicente J. Malubay	BS Agriculture	Rice Production Course	Kyushu Nat'l. Agri. Expt. Stn.	Mar. 1986 - Oct. 1986	Oct. 1986 - June. 1994	Agriculturist***
4	German M. Makiling	BS Agriculture	Physiology & Ecology of Upland Crops	Kyushu Nat'l. Agri. Expt. Stn.	Aug. 1987 - Feb. 1988	Oct. 1984 - present	Agriculturist II
5	Maria Fe M. Dominise	BS Agriculture	Extension & Training Methods	TIC - JICA	Aug. 1988 - Nov. 1988	Aug. 1985 - Dec. 1992	Agri. Center Chief II**
6	Eugene C. Cahiles	BS Agr'l. Engineerin	Vegetable Production Course	TIATC - JICA	Feb. 1988 - Nov. 1988	Nov. 1984 - present	Agricultural Technologist
7	Abdel B. Apalisok	BS Agriculture	Rice Production Course	TIATC - JICA	Mar. 1988 - Oct. 1988	June. 1984 - present	Agricultural Technologist
8	Rolando T. Alaan	BS Agriculture	Vegetable Production Course	TIATC - JICA	Feb. 1989 - Nov. 1989	Aug. 1985 - present	Agricultural Technologist
9	Antonio S. Du	BS Agr'l. Engineerin	Irrigation and Drainage Course	TIATC - JICA	Feb. 1989 - Nov. 1989	Aug. 1985 - present	Agricultural Technologist
10	Erlindo L. Samblaceno	BS Agriculture	Extension & Training Methods	TIC - JICA	May. 1989 - July. 1989	Nov. 1986 - present	Agricultural Technologist
11	Concepcion B. Payapaya	BS Agriculture	Solls Laboratory/Analysis	Kyushu Nat'l. Agri. Expt. Stn.	May. 1989 - July. 1989	August 1985 - present	Agriculturist II
12	Tito L. Canas	BS Agr'l. Engineerin	Vegetable & Seed Production Course	TIATC - JICA	Feb. 1990 - Nov. 1990	Nov. 1986 - present	Agricultural Technologist
13	Marcial D. Agad	BS Agr'l. Engineerin	Farm Machinery Course	TIATC - JICA	Feb. 1990 - Nov. 1990	Oct. 1984 - present	Agricultural Technologist
14	Mary Jean C. Du	BS Agriculture	Rice Production Course	TIATC - JICA	Mar. 1990 - Oct. 1990	Oct. 1984 - present	Agriculturist II
15	Dolorosa E. Pariasca	BS Agr'l. Engineerin	Farm Machinery Course	TIATC - JICA	Feb. 1992 - Nov. 1992	Nov. 1986 - present	Agricultural Technologist
16	Rizalina G. Cahiles	BS Agriculture	Vegetable Production Course	TIATC - JICA	Feb. 1994 - Nov. 1994	Oct. 1984 - present	Agricultural Technologist
17	Aurea M. Madrio	BS Agriculture	Extension & Training Methods	TIC - JICA	May. 1994 - July. 1994	Nov. 1986 - present	Agricultural Technologist
18	Maria Wencisa B. Egama	BS Agriculture	Rice Production Course	TIATC - JICA	Mar. 1995 - Oct. 1995	Nov. 1986 - present	Agricultural Technologist
19	Maria Chona Maleza	BS Agriculture	Rice Cultivation Technology	TIATC - JICA	Feb. 1996 - Nov. 1996	Nov. 1986 - present	Agricultural Technologist
20	Grace Len C. Dagala	BS Agriculture	Vegetable Production Course	TIATC - JICA	Feb. 1996 - Sep. 1996	Nov. 1985 - present	Agricultural Technologist

※ 視察型研修は含まず。
No.16 － 20は個別派遣専門家のc／pとして参加

付属資料③　アフターケア協力要請書

95. 7. 19
02357

第　0617　号
平成7年7月18日

外務大臣　殿

受付
7. 7. 19
経済開発協力局

7. 7. 19

在フィリピン
松田大使

件名		
プロジェクト方式技術協力 （ボホール農業振興センター／アフターケア、要請取り付け）		
引用公・電信 日付・番号		主管課（文書記号） 経協技

比国外務省より本件に関する正式要請書が当館に接到したところ、口上書写し及びＴｏＲを送付申し上げる。

（了）

7. 7. 18

本信送付先：	付属文書 付属電報（行）0 付属電送（DP）0
本信写送付先：	
省内写配布希望先：	

GA－12－1　　在外公館

（昭和六三・四・一改正）

No. 951142

The Department of Foreign Affairs presents its compliments to the Embassy of Japan and has the honor to request a two-year After Care Cooperation of JICA for the Bohol Agricultural Promotion Center (BAPC) project of the Department of Agriculture.

The proposed After Care Cooperation would enable the project to provide technical support in terms of research, training and extension in the implementation of the rice production component of the Capayas Irrigation Project. The BAPC project is in support of the Department of Agriculture's grains production enhancement program.

The Department would appreciate being informed of the Japanese Government's decision on the said request.

The Department of Foreign Affairs avails itself of this opportunity to renew to the Embassy of Japan the assurances of its highest consideration.

MAR 3 1 1995

28 March 1995

Republic of the Philippines
BOHOL AGRICULTURAL PROMOTION CENTER
Dao District, Tagbilaran City

I. NAME OF REQUESTING COUNTRY, ORGANIZATION AND PLACE :

Department of Agriculture
BOHOL AGRICULTURAL PROMOTION CENTER
Dao District, Tagbilaran City
P H I L I P P I N E S

II. PROJECT TITLE : BOHOL AGRICULTURAL PROMOTION CENTER- JICA Technical Cooperation Project (On-going)

III. REQUEST COOPERATION: Bohol Agricultural Promotion Center "AFTER CARE COOPERATION"

IV. BACKGROUND :

The Bohol Agricultural Promotion Center (APC) is a joint undertaking between the Japanese government represented by Japan International Cooperation Agency (JICA) and the Philippine government through the Bohol Integrated Area Development Project (NACIAD-BIADP).

In 1978, Bohol was identified as a priority area for development by the National Council on Integrated Area Development (NACIAD). Thus, a master plan of the province was formulated in 1979 by NACIAD and JICA. This was completed in February, 1980, identifying the establishment of the Agricultural Promotion Center, which is intended to accelerate agricultural development of the province.

In May, 1980, a series of JICA missions in cooperation with Bohol Integrated Area Development Project (BIADP) were dispatched to survey possible sites of the center, which were later identified to be at Dao, Tagbilaran City, Bilar and Ubay. Then in February, 1983, the Records of Discussion was signed by the Japanese government and the Philippine government which was represented by BIADP Director and Minister of Agriculture and Food.

Furthermore, BIADP requested the Japanese government to extend financial grant for the construction of the APC buildings. The grant was approved and signed in July

1983 assigning Kume Architects and Engineers of Japan to undertake the design of the center. In November, 1983, Kumagai-Gumi Company Limited of Japan was awarded the contract for the construction of the buildings given a time frame of twelve months to complete its work.

HISTORICAL EVENTS OF APC

1980 - MASTER PLAN (1979) was completed, identifying agriculture as the most important and strategic sector of Bohol's economy, and the need for the establishment of Bohol APC to accelerate agricultural development.

Series of JICA mission teams in cooperation with BIADP was dispatched to survey center project sites, later identified to be in TAGBILARAN CITY, BILAR AND UBAY.

1983 - RECORD OF DISCUSSIONS for the 5-year APC PROJECT was signed by both governments, stipulating the grant of financial assistance by the Japanese government for the construction of the APC buildings.

Dispatch of JICA Short-Term and Long-Term Experts were initiated. Long-term Japanese Experts, headed by a Team Leader, would compose the JICA Team to supervise the working units of APC, together with their Filipino Counterparts.

1984 - CONSTRUCTION OF APC main center office facilities and experimental field was completed, and later on the completion of the experimental field and office facility in Bilar and Ubay sub-centers.

1985 - APC was inaugurated by Prime Minister Cesar E. Virata, Minister of Finance and NACIAD Chairman on February 16.

The Tubigon Vegetable Experimental Field for lowland vegetable production research and demo farm area was established.

1986 - AREA DEMO for vegetables under high elevation was set up, the program area called "Taytay-Mayana Intensive Vegetable Guidance Area".

The APC Carmen Pilot Farm was established, a 16-hectare rice demonstration area managed and cultivated by farmers. A 1.1 hectare experimental field is likewise set up within the pilot farm.

1987 - OVERALL REVIEW AND EVALUATION of the APC Project was conducted prior to the termination period in February 1988. Joint evaluation was conducted by the Japanese Evaluation Team headed by Eiji Yamagiwa, Executive Director of JICA together with the Filipino Evaluation Team headed by Mauricio C. Feliciano, BIADP Project Director.

The extension of the Technical Cooperation has been approved by both governments through Records of Discussions which was signed on January 22, 1988 by JICA and BIADP. Prior to the termination of the project on February 2, 1990, Minutes of Discussion on the Technical Guidance on Japanese Technical Cooperation for Bohol APC, both parties agreed to their authorities concerned the result of the overall review and recommendation signed on October 12, 1989. After the termination of the Technical Cooperation in February 1990, the Department of Agriculture took over the supervision and management of the project. After series of negotiations based from the review and recommendation of both governments, Japanese government dispatched two (2) individual type experts as a continuing support to the project in the field of agronomy impact of the JICA-Assisted Capayas Terminal Irrigation Project in Ubay, Bohol.

V. PROJECT JUSTIFICATION :

"After Care Programme" with JICA Technical Assistance to Bohol Agricultural Promotion Center.

The Bohol Agricultural Promotion Center was established with Technical Assistance from JICA. Activities of JICA assistance in Bohol APC came to a close in February 1990 and a joint evaluation was conducted by both Philippine and Japanese mission.

The Department of Agriculture took over the supervision and management of the project under locally funded.

As per discussion of Bohol APC and JICA experts, agreement was made to identify the areas that needs after-care services and made request to JICA for further assistance.

The following requests were made by Bohol APC for further assistance in order to ensure the sustainability of the Project.

1 Requested Cooperation - 2 years starting January 1995.

2. Renewal of previous machinery and equipment provided by JICA.

A. Agricultural machinery, spare parts and equipment

B. Laboratory equipment

C. Audio Visual equipment

D. Meteorological equipment

E. Office equipment and supplies

F. Vehicles

3. Experts :

- Farm Machinery
- Water Management
- Short-Term Experts as the need arises

4. Training in Japan :

- 3-4 Counterpart Trainings/Year
- 2 Observation Tours/Year

As part of the continuing thrust of Bohol APC to include the following components for the after care implementation :

1. Study on post harvest technology

2. Adaptability study of farm machinery suited for Bohol condition.

3. Continuous verification of the agronomic problems on rice cultivation in Bohol to formulate optimum farm recommendation.

4. Dissemination of recommended technologies through extension and training activities.

5. Preparatory study on water management for better irrigation in the newly built Capayas Terminal Irrigation Project.

IV. PROJECT FINANCING :

A. JICA TEchnical Cooperation - (Request amount for equipment and machinery : P15M)

B. Recipient Givernment :

1. Personnel Compliment - presently Bohol APC has a total compliment of 104 personnel.

2. Yearly maintenance and operating expenses.

Prepared by :

ENGR. RICARDO D. OBLENA
Name

Bohol APC Project Manager
Designation

DATE : August 15, 1994

NOTED :

DIR. RODOLFO C. ORAIS
Head of Office

Department of Agriculture
Agency

DA-7 Regional Director/
Chairman APC Joint Committee
Designation

DATE: August 15, 1994

RCO/mdc '94

REQUEST OF MATERIALS/EQUIPMENTS/VEHICLES
FOR THE "AFTER CARE" PERIOD OF BOHOL APC

Materials/Equipments/Vehicles	No. of Units
VEHICLES	
1. Toyota Double Cab (4WD, diesel, complete with aircon and accessories)	3
2. Truck (diesel, power steering, 8 ton capacity with crane)	1
3. Toyota Coaster (diesel with aircon and complete accessories)	2
4. Toyota Land Cruiser (station wagon, 4WD, diesel with aircon and complete accessories)	2
5. Toyota Hi-Ace (diesel with aircon and complete accessories)	1
FARM MACHINERIES	
1. Iseki 4370 (with complete farm implements)	2
2. Hand Tractor (diesel engine K1230 Kubota with complete farm implements)	4
3. Overhead Sprinkler (with accessories)	10
TOOLS and EQUIPMENTS	
1. NISSALCO Uni-Multi 8" Welder	1
2. NISSALCO Spray Gun BP7166	1 set
3. NISSALCO Electric Disk Grinder BP7744	1

Materials/Equipments/Vehicles	No. of Units
4. NISSALCO Garage Jack (LM4394-M000)	2
5. HITACHI Electric Drill GW8360 (DU-PN2)	1
6. NISSALCO Mechanic Tool Kit	2 sets
7. NISSALCO Hydraulic Press GW217 19 ton capacity	1
8. NISSALCO Valve Seat Grinder EM0550	1 set
9. NISSALCO Air Impact Wrench with sockets WS3567	1 set
10. NISSALCO Car Washer "SUNRISE 100" CS6188	1
11. NISSALCO Pipe Bender BF7450 (1003RE8)	1
12. NISSALCO Acytelene Gas Welding Equipment (BF7820)	1 set
13. Electric Soldering Gun 100W, 200V	1
14. NISSALCO Mechanical Kit HT7253	1 set
15. Electric Piper and Bolt Threader	1
16. Electric Digital Tester	1
17. Brush Cutter	5
18. Chain Block 5 ton capacity	1
19. Airconditioning Unit (split type 3 ton capacity)	1
20. Computer with Printer	1
LABORATORY EQUIPMENTS	
1. Atomic Absorption Spectrophotometer (AA 6501 F)	1

Materials/Equipments/Vehicles	No. of Units
2. Computer with Printer & hard disk (Wearnes)	1 set
3. pH Meter (TOA Model HM-18-E)	1
4. Distilling Apparatus (Yamato, cat. no. N71-11)	1
5. Electric Soil Grinder	1
6. Fume Hood (Model FS A)	1
7. Semi-Micro Nitrogen Distillation Apparatus (KIYA H404)	1
8. Soil Volumenometer (DAIKI Model 100)	1
9. Soil pF Measuirng Apparatus	1
10. pH Stat (Model HSM-10A)	1
11. Sterilizer (KIYA KT-30LDFA 300x650 mm)	1
12. Nitrogen Rapid Digester	1
13. Hot Plates (Model HK-41, Yamato)	1
14. Analytical Balance (Libror 160)	1
15. Shaker	1
16. Portable pH Meter (TOA HM-1k)	1
17. Portable ORP Meter (TOA RM-1k)	1
18. Portable Conductivity Meter (TOA CM-1k)	1
19. Laboratory Carts	
20. Camera (Canon)	1
21. Inoculation Chamber	1
22. Air Conditioner	
23. Spectrophotometer (Shimadzu, UV-160)	1

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