B.13 Luzon ARC (No. 12)

a) History

Luzon ARC located in the municipality of Cabatuan was established in 1994 that include one Barangay, namely Luzon. The Barangay was formerly called Sarrateno. It got its name from the former owner of the land who hails from Sarrat, Ilocos Norte. The area was an estate owned by Mr. Severo Macapay Sr. The owner sold the land to its tenant after the implementation of the CARP program in 1972. Its name was changed to Luzon after it was transferred to the tenants. The residents of the area are mostly Ilocanos from Ilocos and Nueva Ecija.

b) Location

Luzon Barangay is located in Municipality of Cabatuan approximately ten (10) km away from Cauayan which is mostly center of Isabela Province at left bank of Cagayan river. Magat river flows on north boundary of the Luzon. And it bounds on the north by Aurora municipality with Magat river, on the south by Canan Barangay, on the east by Luna municipality and on the west by Sampaloc Barangay.

c) Socio-economic Conditions

The Barangay 1999 internal revenue allotments amounting to 500,575 pesos correspond to 322 peso/head. It has a total population of 1,552 with a male-female population of 821 and 731, respectively. The number of households is 228 with an average family size of 6.8. Out of the 228 household, 164 or 71 % are ARBs. The number of female ARBs is 20, 3 of who belong to some organization.

The total land area of the Barangay is 965 ha with a total agricultural area of 462 ha about 415 and 28 ha of which are planted to irrigated and non-irrigated palay, respectively. The DAR LAD working scope is 311 ha. All area has been distributed as of third quarter of 1999. The average landholding of an ARB is 1.9 ha.

d) Natural Conditions

Topographic Condition

The Luzon has a total land area of 965 ha of which farm land is 462 ha with flat generally.

e) Agricultural Conditions

Of 462 ha total agricultural land, 415 ha are planted with rice, and the rest with corn. Soil type is different depending upon the fields. Soils in the cornfields contain much sand rather than in the rice fields. A Farmer holds about 1.7 ha on average. Cropping intensity is 200 % in the ARC.

Rice is grown twice a year under MARIIS. Average yield is usually 100 cavans/ha in the wet season from May to August or September. Once calamity happens in the wet season, yield drops down 50 to 70 cavans/ha. Dry season rice yields 120 cavans/ha on average from November or December to March. Price of rice ranges from 5.00 to 7.00 pesos/kg, depending upon the moisture content of grains. In the Barangay, there is a mechanical dryer whose capacity is 200 cavans/10hr owned by Cabatuan Multi-purpose Cooperative (CAMPUCO), a secondary cooperative in Cabatuan Municipality, but it is not functional now. The production cost is estimated 13,500 to 16,500 pesos/ha. The net income from rice production is worked out 12,000 pesos to 26,000 pesos/ha.

Only 10 farmers cultivate yellow corn in the rainfed 19 ha fields along the Cagayan. Yellow corn is grown twice a year, it yields 60 to 80 cavans/ha on average, and the price fluctuates from 3.80 to 5.00 pesos/kg, earning 3,400 to 13,000 pesos/ha. White corn or tobacco is sometimes grown instead of yellow corn.

Vegetables and fruits are grown at the backyard for home consumption. Animals are kept in a small scale. Farmers need financial support and solar dry yard, and rice is affected by rice tungro virus disease. (refer to Table B-2-1)

f) Economic Condition of Farm Household

The average production for irrigated palay is 90 cavans sold to private traders at 8.00 peso/kg. After deducting the production cost of 12,000 peso/ha for irrigated palay, the net income per hectare is estimated at 48,000 pesos for two cropping seasons.

Swine breeding is common off-farm income source with approximately 378 heads being sold to the traders annually accruing a net income of about 567,000 pesos on a total ARC basis. The average ARB household generates around 105,403 pesos of total net income, 94 % of which are derived from farm income.

g) Farmer Beneficiaries and Organization

There are five organizations in the ARC, namely, the Luzon Multi Purpose Cooperative Inc. and the four other informal organizations namely, Rural Improvement Club, Luzon Women's Club, IGLO and the Damayan.

The Luzon MPCI was organized in 1990 and registered with CDA in 1991 with a total CBU of 36,000 pesos generated from their former organization, the Samahang Nayon. It has at present a CBU of 48,000 pesos deposited at the FICO Bank. The MPCI's present activity is the collection of loans from members amounting to 60,000 pesos. The cooperative is affiliated with the Cabatuan Federation of Cooperatives (CAFEDCO). The cooperative is now inactive.

The Rural Improvement Club, composed mostly of women are engaged in the clean and green program of the Barangay. The RIC members attended training on dressmaking, floor wax/soap making, meat processing, straw making, vegetable raising. The RIC was provided 6 piglets in 1997 for dispersal and from these 11 piglets has been re-distributed. The program is still on-going. The Luzon Women's Club was organized to mobilize the social activities of the Barangay while the Damayan to assist members in times of need like deaths, weddings and emergency situations. Members composed of 100 contribute 100 pesos each for the needs of other members. All these organizations are active only as need arises.

h) Marketing and Credit

The sale of products is carried out by the farmer individually. Both rice and corn are sold to the private traders. Livestock products are sold to private individuals.

Most of farmers avail credit from traders with interest of 30 % payable within 5 to 6 months after each cropping season.

The cooperative has acquired a loan with the FICO Bank in the amount of 80,000 pesos that is long due. Only loan interest is being paid. The money was used for palay trading that was undertaken only for two cropping seasons. The payment to the loan will come from the share capital deposited in the bank and the collection of loan payments from members. The loan is over due.

j) Agricultural and Rural Infrastructures

Irrigation System

Out of 543 ha total agricultural land, 416 ha is irrigated by four (4) lateral canals named Lat.12a-12, 12a-12a, 12a-12b and A2A-11 canals with total length of 3.9 km diverted from MARIIS under NIA. Furthermore, Ten (10) numbers of deep tube well small pumps are used for supplementary irrigation supplying to lateral canals during dry season.

Road and Farm to Market Road

Distance of municipal roads connecting to provincial road which is crossing the Luzon is one (1) km from town proper of Luzon, and from Highway to poblacion of Cabatuan and Cauayan are 2.5 km and 10 km respectively. Total Length of barangay roads within the ARC is 5 km.

Post-Harvest

There are solar dryer and MPP in the ARC for drying of rice and warehouse as follows;

	Number	Size	Total area
Solar Dryer	2	15 x 28 m	840 sq.m
MPP	2	307 x 4 m	1,228 sq.m

There is no mechanical dryer and warehouse.

Potable Water Supply System

There are wells as potable water resources as follows;

	House Hold	Well	Percentage
Level –1	257	221	86 %
Level –2	0	-	-
Level –3	31	31	100 %

It was not found remarkable bacteria in the drinking water from well, according to the simplified bacteriological testing paper.

k) Operation and Maintenance

Irrigation System

According to interviews of IA members, IA also engages maintenance of lateral canals once a month other than major works. And farm ditches are fully maintained by IA in cutting

grass and repairing the slope before irrigation season starts. And IA pays 1.5 cavan/ha at wet and 2 cavan/ha at dry season for water charge.

Road and Farm to Market Road

In general, Barangay roads are maintained by Barangay councils with assistance of LGU. LGU provides heavy machinery and materials, and Barangay shoulders to supply fuel for machinery, food and miriyanda to operators and so on.

Potable Water Supply System

Wells for drinking water are maintained by the users. When pump repairing is required, the cost is contributed equally by neighbors using the pump.

B.14 Progreso ARC (No. 13)

a) History

Progreso ARC located in the municipality of San Guillermo was established in 1994 that include one Barangay, namely Progreso. The Barangay was formerly a logging area in the 1950's. Most of the residents' area Ilocanos coming from Nueva Ecija and Ilocos. The Barangay is located in one of the most remote areas of San Guillermo. It is isolated mainly during the rainy season due to the unpassable roads. The Barangay is more accessible to Cauwayan than to San Guillermo. Residents of the Barangay go to San Guillermo only when doing transactions with the municipality. However, they prefer to exit through Cauwayan and from Cauwayan proceed to San Guillermo. During the rain season, it will take almost one day to travel on foot from Progreso to the nearest passable road going to San Guillermo. The Cauwayan route is shorter because the residents travel on foot for one hour to Barangay Rogus where jeepney is available enroute to Cauwayan. However, there is only one jeepney plying the area that travels in the morning and back to the same Barangay in the afternoon.

b) Location

Progreso Barangay is located at northeastern part of San Guillermo municipality which is mostly rolling hilly area. The Progreso is approximately 20 km to the east from poblacion of San Guillermo through Colorado and 35 km to the southeast from Cauayan town via Rogus. And it is bounded on the north by Cauayan municipality, on the south by Dietban Barangay, and on the west by Villa Rose Barangay and facing forest area at east.

c) Socio-Economic Conditions

The Barangay has an annual revenue allotment amounting to 268,000 pesos in 1999 that correspond to 777 peso/head. It has a total population of 394 with a male-female population of 205 and 189, respectively. The number of households is 82 with an average family size of 4.8. The ARC has 270 Arabs. The number of female ARBs is 140, all of who belong to some organization.

The total land area of Progreso is 721 ha. The ARC total agricultural area is about 284 ha, 137 ha of which are planted to corn, 87 ha to rice and 60 ha to banana. The DAR LAD working scope is about 1,286 ha, of which about 1,238 ha or 96 % has been distributed as of third quarter of 1999. The average landholding of an ARB is 4.6 ha.

d) Natural Conditions

Topographic Condition

Progreso Barangay has a total land area of 721 ha of which farm land is 284 ha with hilly area. Approximately 50 % of agricultural land is cultivated by Banana and 20 % by corn..

e) Agricultural Conditions

Of 284 ha total agricultural land, 60 ha are planted with banana, 137 ha with corn, and 87 ha is with rice. There are 195 ha idle land due to its steep slope. Soils in the field are clayey loam. A Farmer holds about 8.0 ha on average. The ARC is impossible to reach by car in the rainy season, and it takes 3 to 4 hr on foot.

Progresso is one of the most famous Banana production areas in the province of Isabela. Out of 325 ha of banana, 60 % of them are "Sava" which is a cooking banana and the rest 40 % are Lakatan, table banana. It is possible to harvest monthly, average yield of Sava is 42,000 pieces/ha/year, and Lakatan, 30,000 pieces. Price of Sava ranges from 25 to 40 pesos/100 pieces. That of Lakatan ranges from 50 to 70 pesos/100 pieces. Although gross income is low (14,000 to 18,000 pesos/ha/year), the net income is 10,000 to 15,000 pesos/ha because the cost of production is 3,400 to 4,500 pesos/ha only for weeding and hauling. In the dry season, private traders come to pick up the products. In the wet season, Canvasser, a middleman who lives in the Barangay, transports the products to the market by Carabao cart or sleigh.

Yellow corn is grown twice a year, and it yields 60 cavans/ha on average in both cropping. The price fluctuates from 3.00 to 5.00 pesos/kg, and earns 7,600 to 16,000 pesos/ha. At the bottom of hills, rice is grown for home consumption. It is possible to grow twice a year under spring irrigation, but productivity is low, ranges from 20 to 40 cavans/ha.

Vegetables and fruits are grown at the backyard, pineapple and pomelo are sometimes sold in the local market. A farmer feeds 2 Carabaos, 2 pigs and 10 chickens on average in this ARC. Out of 12 existing fishponds in the ARC, 8 fishponds were damaged due to heavy rain at the beginning of this November. Farmers need farm machines (tractor, hand tractor), advanced farm technology and they suffer from typhoon and flood. (refer to Table B-2-1)

f) Economic Condition of Farm Household

The average production for corn and palay are 60 and 50 cavan/ha sold to private traders at 6.00 and 8.00 peso/kg, respectively. The average production of banana is 48,000 pieces quarterly. After deducting the production cost of 10,000 peso/ha for corn and 12,000 peso/ha for

palay, the net income per hectare is estimated at 32,000 pesos for both corn and palay for two cropping seasons. With production cost of 20,000 annually for banana, the net income is 56,800 annually.

Swine breeding is common off-farm income source with approximately 10 heads being sold to the market annually accruing a net income of about 15,000 pesos on a total ARC basis. The average ARB household generates around 68,708 pesos of total net income.

g) Farmer Beneficiaries and Organization

There is only one organization in the ARC, namely, the RIC Auto Savings Group. The other organizations in the area did not continue to become an organization due to non-willingness of farmers to form the cooperative organization.

The RIC Auto Savings Group is the only existing and active organization in the Barangay. It is composed entirely of women engaged in the activities of the Barangay such as clean and green program, in-charge of the social activities and visitors of the Barangay. The RIC is divided into four Puroks. Every Purok has a Purok Leader, own fund from membership collection (2 gantas of corn) and income from communal garden. The activities of the RIC are beautification, home and communal gardening, sewing activities where members sew children's shorts, pant, and hats that they sell to nearby Barangays. The RIC has a mutual aid program whereby amount of 300 pesos is given to relatives of dead residents in the Barangay. The RIC members attended training on soap making, floor wax making, banana vinegar making and herbal medicine use. The RIC want to engage in soap making activities, however, the solution for the making of soap is not readily available. The RIC is very active in the Barangay.

h) Marketing and Credit

The sale of products is carried out by the farmer individually. Corns are sold to the private traders in Barangay Villa Concepcion and or Cauwayan. Bananas are brought to Barangay Rogus or Villa Concepcion (part of Cauwayan) and are sold to private traders. During summer season when the roads became passable, the products are sold directly to traders in Cauwayan or in the case of banana are picked by buyers at the site. Only small volumes of palay are sold to the market as it is produced mainly for home consumption. The main problem of the Barangay is the marketing of produce during the wet season. Corn and Banana are brought to the market areas by carabao sled or carried on their back to the nearest market center, in Barangay Villa Concepcion. Big volumes of banana are brought to the river and placed in a bamboo barge that travels to Villa Concepcion for about two days (depending on the depth and condition of the river).

Credit is provided by traders in Villa Concepcion, a Barangay of Cauwayan with interest rate of 30 %. The RIC also provide small cash to its members in the amount of 50 to 100 pesos from the revolving fund. The credit availed are for emergency purposes and re-paid back immediately after selling of banana products.

j) Agricultural and Rural Infrastructures

Irrigation System

There is no irrigation system in the Progreso. About 60 ha of paddy land are cultivated by spring and rainfed twice a year.

Road and Farm to Market Road

The Progreso is quite isolated area. There are two (2) ways going to markets, one is access to Cauayan through Rogus, other one is for poblacion of San Guillermo via San Francisco, Villa Sanches and Colorado during dry season, if market roads are maintained after wet season. During wet season, access roads to the Progreso become mud due to non-gravel pavement. Then, no agricultural product cannot transport to the markets except transporting by carabaos or bamboo boats through creeks.

Post-Harvest

There are solar dryer and MPP as a dryer in the Progreso for drying of rice or corn and warehouse as follows;

	Number	Size	Total area
Solar Dryer	1	15 x 28 m	420 sq.m
MPP	0	-	-

There is no mechanical dryer and warehouse.

Potable Water Supply System

There are wells as potable water resources as follows;

	House Hold	Well	Percentage
Level –1	79	14	18 %
Level –2	0	-	-
Level –3	0	-	-

It was not found remarkable bacteria in the drinking water from well, according to the simplified bacteriological testing paper.

k) Operation and Maintenance

Road and Farm to Market Road

In general, Barangay roads are maintained by Barangay councils with assistance of LGU. LGU provides heavy machinery and materials, and Barangay shoulders to supply fuel for machinery, food miriyanda to operators and so on.

Potable Water Supply System

Wells for drinking water are maintained by the users. When pump repairing is required, the cost is contributed equally by neighbors using the pump.

B.15 Yeban Norte/Benito Soliven ARC (No. 14)

a) History

Yeban ARC located in the municipality of Benito Soliven was established in 1994 that include two Barangays, namely Yeban Norte and Yeban Sur. Yeban was formerly known as Hacienda Zulueta during the early fifties. The tenants of the Hacienda planted tobacco and native corn under a lease sharing system. When Benito Soliven became a municipality in 1967, Barangay Yeban was divided into Yeban North and Yeban Sur. The residents of the two Barangays are mostly Ilocanos.

b) Location

Yeban Norte/Benito Solive ARC consists of two (2) Barangays of Yeban Norte and Yeban Sur. Yeban Sur is located at 2.5 km south of Yeban Norte and 2.5 km north of poblacion of Benito Soliven which can reach by National Highway from Naguilian to San Mariano. Yeban Norte and Yeban Sur is located at west of the Pinacanauan river. The Yeban Norte is bounded on the north by Ilagan municipality, on the east by Pinacanauan River, on the south by the Yeban Sur Barangay and on the west by the Naguilian municipality and Punit Barangay. The Yeban Sur is on the north by Yeban Norte Barangay, on the east by Pinacanauan river, on the south by District No. 2 Barangay, San Carlos Barangay and Sta. Cruz and on the west by Punit Barangay.

c) Socio-economic Conditions

The two Barangays has an Internal Revenue Allotment amounting to 785,000 pesos in 1999 that correspond to 233 pesos per head. It has a total population of 3,361 with a male-female population of 1,725 and 1,636, respectively. The number of households is 828 with an average family size of 4.1. Out of the total households, 766 or 92% are ARBs. The number of female ARBs is 57, 36 of who belong to some organization.

The total land area of the two Barangays is 1,552 ha. The ARC has a total of 1,103 ha of agricultural land, approximately 936 ha of which are planted to corn and the remaining area to palay and other crops. The DAR LAD working scope is 1,286 ha. Of this, about 1,238 ha or 98.1 % has been distributed as of third quarter of 1999. The average landholding of an ARB is 1.1 ha. The average land holding area is 1.6 ha for Yeban Norte and 2.6 ha for Yeban Sur..

d) Natural Conditions

Topographic Condition

East side of Yeban Norte and Yeban Sur is formed as river terrace area along river, this flat area may be inundated during the flood season. Remaining area is hilly with undulation. There are steep slope between hilly area and flat area, roads on this slope became muddy because of rain and no pavement.

Water Resources

There are some creeks in the hilly area and this creek may be resources for irrigation water, however hilly area might not be developed for irrigation area because of few total runoff, few irrigable area, steep hilly area, etc.

The Pinacanauan river is one of the major sources of water in case the pump irrigation project will be perused. This will provide full irrigation to rice area as well as corn as there will be sufficient supply of water throughout the year, however it is very difficult to protect the proposed pumping station from flood.

There are two springs at root of slope, which are used as miscellaneous water use such as washing, bathing, etc. The spring water is not enough for irrigation use.

e) Agricultural Conditions

Yeban ARC consists of two Barangays, Yeban Norte and Yeban Sur. Of 1,103 ha total agricultural land in both Barangays, 936 ha are planted with corn and 116 ha with rice. Soils in the field are clayey loam. A Farmer holds about 1.7 ha on average.

Yellow corn is grown twice a year with natural rainfall. Average yield is 75 cavans/ha in both season. In this ARC, Integrated Pest Management (IPM) and application of organic manure or planting mung bean as green manure are introduced widely. These advanced technologies lower the production cost, it ranges from 8,000 to 9,000 pesos/ha. The price fluctuates 3.50 to 6.00 pesos/kg, and earns 4,200 to 15,000 pesos/ha. In some fields, upland rice or vegetables are planted in the dry season after rice. Tobacco is grown under a contract with Lancaster, but planted area is less than 5 ha. Average yield of rice is 70 to 100 cavans/ha in the irrigated fields, 40 to 60 cavans/ha in the rainfed fields. Price of rice ranges from 4.00 to 8.00 pesos/kg, and earns 8,900 to 21,000 pesos/ha.

Vegetables (mung bean, peanuts, watermelon etc.) and fruits (pineapple, calamansi etc.) are grown mainly for home consumption at the backyard. Except for Carabao and cattle as a draft animal, pig is kept 3 to 4 heads per household for selling. 5 month-aged pig is sold at the price of 50 pesos/kg. Farmers need water reservoir, solar dry yard, and farm to market road, farm machines and pumps. (refer to Table B-2-1)

f) Economic Condition of Farm Household

The average production for corn and rice are 60 and 80 cavans per ha sold to private traders at 6.00 and 8.00 peso/kg, respectively. After deducting the production cost of 10,000 peso/ha and 12,000 peso/ha, the annual net income per hectare is estimated at 28,000 pesos for corn and 12,000 pesos for rice (for two croppings).

Swine breeding is common off-farm income source with approximately 40 heads being sold to the market annually accruing a net income of about 60,000 pesos on a total ARC basis. The average ARB household in Yeban Norte generates around 60,000 pesos of total net income, 95 % of which are derived from farm income.

The total net income for the ARBs in Yeban Sur is about 55 % less than that of Yeban Norte. The farmers supplement their income by seasonal river fishing, which brings about 3,000 peso/month of additional income. About 25 % of total household in Yeban Sur are engaged in fishing. Cattle raising are expected as another income source because the Barangays have a number of hilly vacant lots. Some residents of both Barangays have started raising cattle.

g) Farmer Beneficiaries and Organization

There are two MPCIs in the ARC, namely, Yeban Norte Multi Purpose Cooperative Inc. and Yeban Sur Multi Purpose Cooperative Inc. The Barangays also have support organizations namely, Green Ladies Organization (IGLO), Senior Citizens Organization, and Kabataang Barangay. Except for the Kabataang Barangay, all are inactive.

The Yeban Norte MPCI, was organized in 1988 and registered with the CDA in 1989 with 258 members and a total CBU of 77,400 pesos. As of October 1999, it has collected a CBU of 129,000 pesos. The cooperative has a cash on hand of about 15,000 pesos and loan's collectible of about 152,000 pesos. The cooperative has an existing consumer store of about 70 sq. m. located in a 200 sq.m. lot. The store inventory during the time of the interview was about 50,000 pesos. The MPCI also own a 420 sq.m. solar dryer.

The MPCI was once very active engaged in consumer store operation, production loan and production marketing. The cooperative was supported by LBP and has been provided credit many times since 1989. However, the after the release of the latest loan in 1991 in the amount of 996,000 pesos, the area was affected by typhoon causing the flooding of the area that brought damages to their crops. The non-payment of the insurance was claimed by members as the reason for the non-payment of their loan to LBP. The organization weakened and became inactive as a consequence of the non-payment of loan to LBP. In 1998, the cooperative re-organized and elected their new officers. The cooperative offered to pay 50 % of their loan to LBP after a series of

discussions on re-structuring. However, LBP rejected the offer citing that condonation of loan interest and penalty can be effected only upon full payment of loan balance. The non-acceptance of the LBP on the conditions of the cooperative closed the door for the cooperative to function effectively. The cooperative officers have indicated that they will now concentrate only on the expansion of their consumer store operation.

The Yeban Sur MPCI was organized in 1989 and registered with the CDA in the same year with 50 members and CBU of 10,000 pesos. From 1992 to 1993, the cooperative was very active. It was involved in production loan, consumer store operation and marketing. In 1992, the cooperative obtained a loan of 400,000 pesos from LBP that was paid in full after the cropping season. It was again provided loan by LBP in the next cropping season in the amount of 800,000 pesos. During the same year, the ARC was affected by calamity causing damage to crops. During the calamity, the cooperative store and building were severely damaged. The contents of the store and cooperative documents were all damaged. Due to the calamity, the members did not pay their loan to the cooperative. The members expected that the crop damage will be covered by crop insurance. However, according to the members, the PCIC did not pay the crop insurance. Also due to loss and damage of cooperative documents, the officers and members started to deny loans obtained from the cooperative. As a consequence, the cooperative started to weaken and disintegrate. The officers and members had disagreements regarding loans causing the cooperative to become dormant and inactive.

h) Marketing and Credit

The sale of products is carried out by farmers individually. Limited palay are sold to the market because it is consumed locally. Palay is milled locally and sold within the Barangay at 35 pesos per ganta or 50 % cheaper than retail price. Corn is sold to the private traders. Livestock products are sold to private slaughters.

The other source of income of the ARBs is fishing. The river along the area is abundant with "Tilapia". Also, during the months of November and December, a rare fish commonly called "Golden Fish" is caught in the river providing a good source of income to residents of the area. Though fishing of Tilapia is good source of income sold at 40 to 50 peso/kg, the rare Golden Fish is sold at 75 peso/kg. One Golden Fish weighs about 4 to 6 kilos. Main market of fish is poblacion, and especially, Golden fish is sold to rich Chinese residents.

The loan from LBP of the two cooperatives were re-lend to the cooperative members as production loan. The loan/credit extended to members were:

	Yeban Norte	Yeban Sur
Year loan was acquired	1990	1990
Source of Loan	LBP	LBP
Loan Acquired by Cooperative	996,000 pesos	800,000 pesos
Number of persons availed credit	131 members	no record
Amount acquired per ha	6,000 peso/ha	6,000 peso/member
Interest rate	20%	20%
Maturity of loan	6 months due in 1991	6 month (past due)
Security to the Loan	Share capital	Share capital
Status of loan	No payment has been made	30% paid
Reasons for non payment	Calamity and non-payment of crop insurance	Calamity and non-payment of crop insurance

j) Agricultural and Rural Infrastructures

Irrigation System

There is one irrigation system (20 ha of irrigated area) which is implemented by DA under SWIP in Yeban Sur. Other than this irrigation system, there are 5 private pumps covering 1.0 ha/one pump in average with engine drive in Yeban Norte and 10 private pumps covering 0.7 ha/one pump in average in Yeban Sur, which were purchased and operated by each farmer.

Road and Farm to Market Road

There is one municipal road from municipal center to Yeban Norte through Yeban Sur which is paved by gravel. Beside of the above, roads paved by gravel in the each barangay are tabulated below;

Barangay	Yeban Norte	Yeban Sur
Roads in town proper	5.0 km	5.0 km
Roads in farm	8.0 km	5.0 km

Post Harvest facilities

Following table shows number of facilities as post-harvest.

Barangay	Yeban Norte		Yeban Sur	
	Number	Area	Number	Area
Solar Dryer	3	2,790 sq.m	3	1,500 sq.m
MPP	0	-	0	-
Mechanical Dryer	0	-	0	-
Warehouse	0	-	0	-

Drinking Water Supply

There are wells as drinking water resources as follows;

Barangay	Yeban Norte			Yeban Sur		
	House Hold	Well	Percentage	House Hold	Well	Percentage
Level – 1	448	239	53 %	302	96	32 %
Level – 2	0	-	-	0	-	-
Level – 3	0	-	-	0	-	-

It was not found remarkable bacteria in the drinking water from well, according to the simplified bacteriological testing paper.

k) Operation and Maintenance Conditions

Road and Farm to Market Road

Maintenance of the municipal roads and Barangay roads have been done by municipal office based on the request of Barangay. However, maintenance of road is not enough because municipal office has not enough maintenance equipment

Potable Water Supply System

Wells for drinking water are maintained by the users. When pump repairing is required, the cost is contributed equally by neighbors using the pump.

B.16 Canan ARC (No. 15)

a) History

Canan ARC located in the municipality of Cabatuan was established in 1995 that include one Barangay, namely Canan. The Barangay residents are mostly Ilocanos. The ARC is very accessible and only about four km from the poblacion.

b) Location

Canan Barangay is designated for Canan ARC only. The Canan is situated at the northeastern part of Cabatuan and about four (4) km away from the poblacion. The Canan is bounded on the north west by Sampaloc and Luzon Barangays, on the west by Centro Barangay, on the south by La Paz Barangay and on the east by the of Cauayan municipality.

c) Socio-Economic Conditions

The Barangay has an annual revenue allotment amounting to 515,437 pesos in 1999 that correspond to 399 pesos per head. It has a total population of 1,291 with a male-female population of 669 and 622, respectively. The number of households is 258 with an average family size of 5. Out of the 258 household, 115 or 44 % are ARBs. The number of female ARBs is 5, 3 of who belong to some organization.

The total land area of the Barangay is 901 ha. The ARC has a total agricultural area of 678 ha, about 558 ha of which are planted to irrigated palay and the remainder with other cash crops. The DAR working scope is 155 ha. All land has been distributed as of third quarter of 1999. The average landholding of an ARB is 1.4 ha.

d) Natural Conditions

Topographic Condition

The Topography of Canan is flat area wherein it is used for rice and vegetable production and agriculture.

Water Resources

The irrigation water resources is the canal system under Magat River Integrated Irrigation System (MRIIS). The Canan is located at about 20 km far from Magat river, therefore no other irrigation water resources is available except ground water.

e) Agricultural Conditions

This ARC is characterized as rice growing area of 678 ha paddy fields with irrigation. Soil type is quite different in the lower area and in the higher area. Soils in the lower area are sandy loam, flooding inundation in the fields can be recovered easily. On the other hand, there are many ill-drained fields in the higher area due to heavy clay. A Farmer holds about 1.5 ha on average. Cropping intensity is 200% in Canan.

Rice is grown twice a year under MARIIS. Average yield is usually 80 cavans/ha in the wet season from May to September. In the wet season, farmers prefer to planting RC10 which is resistant to rice tungro virus compared with IR line varieties. Dry season rice yields 100 cavans/ha on average from December to March. Some farmers achieve high yield (120 cavans/ha) by applying unique water management which means making the fields dried up 10 days after transplanting in order to rise the effectiveness of fertilizer. An experiment showed 190 cavans/ha of yield with hybrid rice in Canan. Price of rice ranges from 6.00 to 8.00 pesos/kg, depending upon the moisture content of grains. The cost of production is estimated from 11,000 to 13,000 pesos/ha. The net income from rice production is worked out 13,000 pesos to 27,000 pesos/ha. In some fields, mung bean is planted between two rice cropping.

Vegetables are grown only at the backyard just for home consumption. A few heads of animals are kept at the homestead, such as Carabao, cattle, pig, chicken, duck, etc. Fish, telapia makes good money. A farmer grows telapia in 2 ha fishponds. Farmers need farm to market road, mechanical dryer, capital for farming and drainage of the paddy, and rice yield is seriously affected by rice tungro virus disease. (refer to Table B-2-1)

f) Economic Condition of Farm Household

The average production for irrigated rice is 120 cavans sold to NFA and private traders at 8.00 peso/kg. The reason of high productivity is i) good soil conditions, ii) original technology of fertilizing, iii) special cropping schedule to avoid typhoon occurrences and iv) availability of irrigation facilities. After deducting the production cost of 12,000 peso/ha for irrigated rice, the net income per hectare is estimated at 72,000 pesos for two croppings.

Swine breeding is common off-farm income source with approximately 20 heads being sold to the market annually accruing a net income of about 30,000 pesos on a total ARC basis. The average ARB household generates around 167,000 pesos of total net income, 98 % of which are derived from farm income.

g) Farmer Beneficiaries and Organization

There are two organizations in the ARC, namely, the FACREDCO. and the Canan Rural Improvement Club, with a total member of 74 and 215, respectively.

The FACREDCO, was organized in 1990 and registered with the CDA in 1994 with total members of 25. It has at present a CBU of about 215,000. The cooperative cash/bank on hand is about 11,500 pesos. Accounts receivable is about 3.1 million pesos. The assets of the cooperative consist of land with improvements (building and warehouse), trading post at the Cabatuan market (2 stalls), truck and passenger jeepney, iron works housing, solar and mechanical dryer, thresher and water pump. The cooperative is affiliated with CAVALCO. The activities of the cooperative are: a) production loan to members; b) Consumer trading; c) palay and input trading; d) transportation rental; e) warehouse rental; and f) post harvest facility rental summarized as follows.

Project	Earning Ratio	Achieve-ment	Main Reason for present status
Production Loan	1%	x	No payment due to Calamity, Typhoons
Livestock	Break-even	x	Hog cholera- Foot & Mouth Decease
Ironworks	Break-even	x	No capital, No market
Hog Dispersal	Break-even	x	Hog cholera- Foot & Mouth Decease)
Grocery	2%	o	
Fish Cage	Negative	x	El Nino
Concrete making	2%	x	Lack of capital
Trucking	2%	o	
Solar Drying	5%	o	
Threshing	2.5%	o	
Ware Housing	1%	o	

Source) JICA Study Team

The first three years of the cooperative was very viable and active. The activity of the FACREDCO is slowing down after the calamity in 1998. This has resulted in the poor collection of loan payment from members affecting the cooperative credit standing with LBP and others. The cooperative has obtained loan from many sources. However, many of the cooperative's activities/projects are not operating well. The cooperative is now on the verge of collapse due to

the many loans that are now overdue. However, even with the present condition of big loan liability, the cooperative members are still hopeful that they will survive the present crisis.

The Rural Improvement Club, composed mostly of women is engaged mainly in the clean and green program of the Barangay. The RIC members attended training on floor wax making, meat processing, sewing and tray basket making. Except for the clean and green activity, the RIC is inactive. Each member has disposal income at 3,000 pesos in average; nevertheless, their annual due is only 25 pesos, which is insufficient to establish fruitful project.

h) Marketing and Credit

The farmer carries out the sale of products individually. The cooperative has no function to sell products jointly. Both rice and corn are sold to the private traders. Livestock products are sold to private slaughters.

The cooperative was able to obtain loan from different sources for its operation. However, the cooperative invested in some activities that were not earning like the hollow block making and the iron works. The swine and livestock dispersal program were affected by cholera and foot and mouth decease problem while the fish cage project was affected by calamity. Due to the occurrence of many calamities, the members have not paid their loan to the cooperative. The FACREDCO's current loans and liabilities are as follows:

Source of Loan	Type of Loan	Current Balance (Pesos)
LBP	Production Loan/Transport (Jeep)	3,184,375
LBP Leasing	Transportation	27,147.27
CAVALCO	Operating Capital	532,000
PCO	Swine Dispersal	25,000
QUEDANCOR	Warehouse/Operating Capital	837,500
DTI	Trading Business	200,485.34
LGU	Livelihood	13,000

j) Agricultural and Rural Infrastructures

Irrigation System

The Canan can get irrigation water from main canal and lateral canal under MRIIS. Total length of irrigation canal in the Canan is about 6.0 km for Irrigated area of 696 ha.

Road and Farm to Market Road

Roads in the barangay are divided as follows;

-Roads in the town proper	3.0 km	(Width of road is ranged from 4 m)
-Roads in the agricultural field	1.5 km	(Width of road is about 4.0 m)
-Service roads of irrigation canal	6.0 km	(Width of road is about 5.0 m)

Post Harvest facilities

Below table shows number of facilities as post-harvest.

	Number	Size	Total area
Solar Dryer	5	15 m x 28 m	2,100 sq.m
MPP	1	400m x 4 m	1,600 sq.m

There are mechanical dryer (90 cavan/day in capacity) and warehouse (2,000 cavan in storage capacity) owned by cooperative.

Potable Water Supply

There are wells as drinking water resources as follows;

	House Hold	Well	Percentage
Level – 1	221	221	100 %
Level – 2	0	-	-
Level – 3	35	35	100 %

It was not found remarkable bacteria in the drinking water from well, according to the simplified bacteriological testing paper.

k) Operation and Maintenance Conditions

Road and Farm to Market Road

Maintenance of the municipal roads and Barangay roads have been done by municipal office based on the request of Barangay. However, maintenance of road is not enough because

municipal office has not enough maintenance equipment

Potable Water Supply System

Wells for drinking water are maintained by the users. When pump repairing is required, the cost is contributed equally by neighbors using the pump.

B.17 Andarayan ARC (No. 16)

a) History

Andarayan ARC located in the municipality of Delfin Albano was established in 1996 that include one Barangay, namely Andarayan. The Barangay residents are mostly Ilocanos, with about 15 % Gaddangs.

b) Location

Andarayan Barangay is designated for Andarayan ARC only. Andrayan Barangay is one of 29 Barangays of Delfin Albano municipality, formerly Magsaysay municipality is 38 km away or one hour drive and crossing the Cagayan river by ferry boat from Ilagan, the capital town of Isabela province. The Andarayan is bounded on the northwest by Capitol Barangay, on the west by Sto. Rosario Barangay, on the south by San Iisidro Barangay and on the east by the of Ragan Sur Barangay.

c) Socio-economic Conditions

The Barangay has an annual revenue allotment amounting to 332,350 pesos that correspond to 289 pesos per head. It has a total population of 1,149 with a male-female population of 597 and 552, respectively. The number of households is 244 with an average family size of 4.7. Out of the 244 household, 61 or 25 % are ARBs. There is no female ARB in this ARC.

The total land area of the Barangay is 475 ha. The ARC has a total agricultural area of 353 ha, about 15 ha of which are planted to corn and 353 ha to palay. The DAR Working Scope is 77 ha. Of this, about 71 or 92 % has been distributed as of third quarter of 1999. The average landholding of an ARB is 1.37 ha.

d) Natural Conditions

Topographic Condition

The Andarayan is formed as flat river terrace along Cagayan river.

Water Resources

The Cagayan river is one of the major sources of water in case the pump irrigation project will be perused. This will provide full irrigation to rice area as well as corn as there will be sufficient supply of water throughout the year.

e) Agricultural Conditions

The total farmland is 353 ha in the ARC. Rice is planted in 135 ha with irrigation and 180 ha under rain fed condition. Corn is grown only in 15 ha. Soils are clayey loam. A farmer holds 2 ha of land on average. Cropping intensity is estimated 151 % in the ARC.

Rice with shallow well irrigation is grown twice a year, the first crop from May to September in the wet season, and second crop from October to February, and some farmers practice continuous cropping, i.e., nearly 3 times of planting in a year, planting immediately after harvesting. The yield of rice is approximately 70 to 80 cavans/ha. The rain fed rice is grown once a year from September to January, yielding 80 cavans/ha. The price of palay fluctuated between 7.00 and 8.00 pesos/kg in last December, 9.50 pesos/kg in last April. The cost of production is 16,200 pesos without irrigation and 19,000 pesos/ha with irrigation. Rice earns 5,500 pesos/ha to 19,000 pesos/ha.

Corn is planted only in 18 ha, mainly white corn or sweet corn, grown once a year from May to August. Vegetables are grown at the backyard, such as eggplant, cassava, string bean, mung bean, squash, bitter gourd and tomato, and eggplant brings good money sometimes when sold to market. Fruit trees as mango, banana, coconut, guava, star apple and tamarind are grown at the backyard as well. Animals such as Carabao, cattle, pig, goat, chicken, duck are kept in small scale at the homestead. Telapias are grown in 8 fishponds. Farmers need irrigation, capital for farming, farm machines (hand tractor, thresher, rice mill, truck), mechanical dryer, solar dryer, and farm to Barangay road. Rice is infested with rice tungro virus disease. (refer to Table B-2-1)

f) Economic Condition of Farm Household

The average production for corn and rice are 40 and 74 cavans sold to private traders at 6.00 and 8.00 peso/kg, respectively. After deducting the production cost of 10,000 peso/ha for corn and 12,000 peso/ha for palay, the net income per hectare is estimated at 4,000 pesos for corn and 35,200 pesos for palay.

The cooperative (Capital Andarayan and Santo Rosario Multi Purpose Cooperative Inc.) members consisting of 148 households benefit from drying and marketing of palay and purchasing of farm inputs. It is estimated that the contribution by the cooperative to farm budget is more or less 3,500 peso/household.

Swine breeding is common off-farm income source with approximately 50 heads being sold to the market annually accruing a net income of about 75,000 pesos on a total ARC basis. The average ARB household generates around 31,000 pesos of total net income, 84 % of which are

derived from farm income.

g) Farmer Beneficiaries and Organization

There are three organizations in the ARC, namely, the Capital-Andarayan-Santo Rosario (CAS) Multi Purpose Cooperative Inc., Andarayan Multi Purpose Cooperative Inc. and the Rural Improvement Club, with a total member of 148, 33 and 25, respectively.

The CAS MPCI was organized in 1991 and registered with the CDA in the same year with a CBU of 11,000 pesos. It has at present a CBU of 672,000 pesos from additional share collection and increasing business lines. The Cooperative has 3.8 million pesos' liability, of which 3.4 million pesos were obtained from credit institutions. CAS's Financial Statement (BS and PL) illustrates the following characteristics.

- Total asset has exceeded 5.4 million pesos, and Fixed Asset ratio is 34 %. This is healthy figure for the cooperative.
- Debt ratio is slightly high at 70 %, but improving year by year
- Net profit at 134,000 pesos as of October 1999, but Rate on Return to Asset is still only 0.08

At the present, CAS MPCI is considered one of the more advanced cooperatives in the Study area, for the following reasons: i) it has appropriate business line as cooperative, ii) management is functioning in the same manner as business enterprise, and iii) it makes profit and refund a suitable portion to the members. According to their financial statement they are repaying credit even in calamity year from their earning. The cooperative has high capital share collection rate. Even without campaign, many individuals are interested to join the cooperative.

Plan International established the ANDARAYAN MPCI in 1998 for the poor farmers who can not afford to join the CAS MPCI. Due to the lack of leadership, the cooperative is still inactive.

The Rural Improvement Club, composed mostly of women is engaged mainly in the clean and green program of the Barangay. The RIC members have tried several activities but all these activities did not last long. The members have no intention to collect additional cash for fund resources inspite of the availability of excess and usable money (without asking from their husband) of 1,500 pesos on the average.

h) Marketing and Credit

The CAS MPCI has a set of mechanical dryer use for drying palay. The cooperative buys palay at 7.00 peso/kg regardless moisture content. The cooperative, after drying the palay bought from members sell the produce to millers in Cauwayan at 8.20/kg. The cooperative has their own 4-ton truck to transport farm products to the market. About 60 % of members participate in this marketing arrangement. For others not involve, the products are sold individually to private traders. Livestock products are sold to private slaughters.

The CAS MPCI has obtained loan from the following agencies, as follows:

Type	Source	Amount in Pesos	Interest Rate	Repaid %	Main reason for Non-Payment
Working Capital	LBP	1,725,000	14 %	25 %	Paying properly
	DTI	325,000	12 %	50 %	paying properly
	PCO	320,000	14 %	0 %	-
Warehouse	Quedancor	1,023,750	30 %	25 %	Paying properly

Source) JICA Study Team

Of the 1,725,000 pesos' loan from LBP, about 495,000 pesos are utilized as production loans re-lend to 8 members in the form of hand tractor. The conditions of re-lending are; i) 13,000 peso/cropping, ii) payable within 3 years, and iii) if the member can not repay, the cooperative has the right to take back the hand tractor and lease it to others. Although, three members out of eight dropped out, the cooperative manages this condition well. According to the financial statement, 63,000 pesos of lease contract receivable (LCR) has been appropriated in 1999. This LCR seems inadequate to repay LBP, however, it is notable that the cooperative is taking the risk completely.

It is observed that marketing through cooperative has strong possibility in Andarayan ARC. Considering the financial statement of CAS MPCI, technical assistance to strengthen marketing and accounting skill will make sense in CAS MPCI to improve ROA and ROI.

j) Agricultural and Rural Infrastructures

Irrigation System

There is no irrigation system provided by NIA or DA, however there are 17 private pumps covering 1.0 ha/one pump in average with engine drive which were purchased and operated by each farmer.

Road and Farm to Market Road

Roads in the barangay are divided as follows;

-Roads in the town proper 3.0 km (Width of road is ranged from 5 m)
-Roads in the agricultural field 2.0 km (Width of road is about 4.0 m)

Post Harvest facilities

Below table shows number of facilities as post-harvest.

	Number	Size	Total area
Solar Dryer	3	15 m x 28 m	1,260 sq.m
MPP	0	-	-

There is no mechanical dryer and warehouse.

Potable Water Supply

There are wells as drinking water resources as follows;

	House Hold	Well	Percentage
Level – 1	246	30	12.2 %
Level – 2	0	-	-
Level – 3	0	-	-

It was not found remarkable bacteria in the drinking water from well, according to the simplified bacteriological testing paper.

k) Operation and Maintenance Conditions

Road and Farm to Market Road

Maintenance of the municipal roads and Barangay roads has been done by municipal office based on the request of Barangay. However, maintenance of road is not enough because municipal office has not enough maintenance equipment

Potable Water Supply System

Wells for drinking water are maintained by the users. When pump repairing is required, the cost is contributed equally by neighbors using the pump.

B-18 Bantug Petines ARC (No. 17)

a) History

Bantug Petines ARC located in the municipality of Alicia was established in 1996 that include one Barangay, namely Bantug Petines. Majority of the migrants is Ilocanos from Nueva Ecija and Ilocos provinces. The name of the Barangay was derived from the first settlers of the community, the Petines family who hails from Nueva Ecija.

b) Location

Bantug Petines Barangay is designated for Bantug Petines ARC only. Bantug Petines Barangay is one of 34 Barangays of Alicia municipality is located on west-south-west from Ilagan, the capital town of Isabela Province. The Bantug Petines is bounded on the north and east by Bagnos Barangay, on the east by Bagong Sikat Barangay, on the south by Bonifacio Barangay and on the west by Ramon municipality.

c) Socio-Economic Conditions

The Barangay has an annual revenue allotment amounting to 430,926 pesos in 1999 that correspond to 268 pesos per head. The Barangay has a total population of 1,606 with a male-female population of 763 and 843, respectively. The number of households is 353 with an average family size of 4.5. Out of the 353 households, 222 or 62 % are ARBs. The number of female ARBs is 16, 7 of who belong to some organization.

The Barangay has a total area of 464 ha, the total agricultural area of 450 ha about 444 ha of which are planted to irrigated palay. The DAR LAD working scope is 307 ha with about 294 ha or 95.8 % distributed as of third quarter of 1999. The average landholding of an ARB is 1.6 ha.

d) Natural Conditions

Topographic Condition

The Bantug Petines is the part of central plan between the Cagayan and the Magat and formed flat area,

Water Resources

The irrigation water resources is the canal system under MRIIS. The Bantug Petines is located at about 20 km far from Magato river, therefore no other irrigation water resources is

available except ground water.

e) Agricultural Conditions

Out of 450 ha total agricultural land, 444 ha are planted with rice. Soils in the field are clayey loam. A Farmer holds about 1.3 ha on average. Cropping intensity is 200 % in the ARC.

Full-irrigation under MARIS makes double cropping a year possible. Average yield is usually 100 cavans/ha in the wet season from May to November as well as 100 cavans/ha in the dry season from November to April. Price of rice ranges from 6.00 to 7.22 pesos/kg, depending upon the moisture content of grains. The production cost is estimated 12,000 to 13,000 pesos/ha. The net income from rice production is worked out 18,000 to 23,000 pesos/ha.

Vegetables and fruits are grown at the backyard for home consumption. Number of animals is very few, 41 Carabaos, 18 cattle, 110 pigs, 113 goats in this ARC. There are few fishponds because of its high construction cost. Farmers need capital for farming, warehouse and mechanical dryer. (refer to Table B-2-1)

f) Economic Condition of Farm Household

The average production for irrigated palay is 100 cavan sold to private traders at 8.00 peso per kg. After deducting the production cost of 12,000 peso/ha irrigated palay, the net income per hectare is estimated at 56,000 pesos for two cropping seasons.

The other sources of income are farm work in other farms (25 %), backyard fishpond (2 %), ducks raising (15 households), small consumer store (15 households), employment (22 households) and remittance from relatives working abroad (22 households). The average ARB household generates around 94,526 pesos of total net income, 84 % of which are derived from farm income.

g) Farmer Beneficiaries and Organization

There are two organizations in the ARC, namely, the Bantug Petines Multi Purpose Cooperative Inc., and the Rural Improvement Club, with a total member of 116 and 38, respectively.

The Bantug Petines MPCI was organized in 1992 and registered with CDA in the same year with a total CBU of 26,000 pesos. It has at present a CBU of 266,924 pesos. The sources of funds of the cooperative are from share capital, savings deposit, profit from lending and marketing operations and loan from LBP. The cooperative cash on hand and on bank is about 369 thousand pesos. Loans' collectible from members is about 2.2 million pesos. The cooperative started a

saving's program in June 1999 where 2 % of loan amount go to savings and included as additional share of member. The total saving generated since June 1999 is 31,560 pesos.

The present activities of the Bantug Petines MPCI are production, working capital and providential loan, palay marketing, agri-input support to members, hand tractor and thresher rental. The assets of the cooperative are land, land improvements (solar dryer), thresher, hand tractor and office equipment. The cooperative is affiliated with CAVALCO and FICO. The Board of Directors and management staff are provided incentive allowances ranging from 100 to 2,500 pesos per month.

During the first years of its organization the cooperative was very active until 1994. However, the organization encountered collection problems with 10 member borrowers who have not paid their loan. As a consequence, the cooperative became inactive from 1995 to 1996. It was re-organized in 1997 after it was launched as an ARC area by DAR. New sets of officers were elected. With the re-organization, the cooperative was able to forge a marketing tie-up with the NFA for palay. However, the cooperative is disappointed with NFA because of it's limited capacity to buy palay. The cooperative plans to engage in trading of palay to support the marketing requirements of its members for it can not rely solely on the NFA. To expand operation, the cooperative will need additional trading capital, warehouse, solar and mechanical dryer. The cooperative intends to expand membership by recruiting from nearby Barangays. The cooperative has cited the need to provide more in-site training to get more participants. The training needs cited are more on strategy on debt collection, management of delinquency control, value of debt payment, and bookkeeping.

The Rural Improvement Club, composed mostly of women are engaged mainly in the clean and green program of the Barangay. Of the 38 members about 10 to 12 are actively involved in the RIC activities. The RIC members attended training on floor wax making, food processing like banana chips, sweets, meat processing, and Christmas decor making. During the municipal 50th activity, the Barangay won the biggest fruit contest. The RIC has been dormant since 1994. It was re-activated in 1999 by the LGU in time for the celebration of the Golden Jubilee year of the municipality.

h) Marketing and Credit

The sale of products is carried out by the farmers through the cooperative. However, not all produce are sold to the market by the cooperative because of limitations on buying capacity of the NFA. The schedule of selling to NFA is on a limited day only. Once the schedule for the area has lapse, the farmers sell their produce individually to the private traders.

The Bantug Petines MPCI was able to obtain loan from Land Bank of the Philippines (LBP) and Department of Agriculture. The current loan balance with LBP is 1.994 million pesos while from DA is 82,838 pesos. Loan extended to members are:

Production Loan:	1,831,238 pesos
Working capital	282,493 pesos
Emergency loan	18,000 pesos
Number who availed credit	82 members
Maximum loan amount	80,000 pesos
Production loan amount	12,000 pesos per ha (7,000 pesos in inputs and 5,000 pesos' cash)
Collateral: Production loan Working capital	Promissory Note & Trust Receipt Land Title
Interest rate	30% per annum
Maturity of Loan	5 months
Payment schedule	Per cropping season
Repayment rate	Difficulty of collection for 20 of 75 members who obtained production loan

The cooperative was able to obtain from DA thresher in 1996 and hand tractor in 1998. The farm machinery is payable to DA within 5 years without interest.

j) Agricultural and Rural Infrastructures

Irrigation System

The Bantug Petines can get irrigation water from Main canal and Lateral E-Extension under MRIIS. Total length of irrigation canal in the Bantug Petines is 5.7 km for Irrigated area of 450 ha.

Road and Farm to Market Road

Roads in the barangay are divided as follows;

-Roads in the town proper 7.0 km (Width of road is ranged from 5 m)
-Roads in the agricultural field 5.0 km (Width of road is about 2 to 4.0 m)

Post Harvest facilities

Below table shows number of facilities as post-harvest.

	Number	Size	Area
Solar Dryer	2	15 m x 28 m	840 sq.m
MPP	3	200 m x 4 m	1,600 sq.m

There is no mechanical dryer and warehouse.

Potable Water Supply

There are wells as drinking water resources as follows;

	House Hold	Well	Percentage
Level – 1	345	275	80 %
Level – 2	0	-	-
Level – 3	0	-	-

It was not found remarkable bacteria in the drinking water from well, according to the simplified bacteriological testing paper.

k) Operation and Maintenance Conditions

Irrigation System

Irrigation system has been maintained by IA in cutting the grass on inside and outside of irrigation canal. Operation of Main and Lateral canal should be done by MRIIS office.

Road and Farm to Market Road

Maintenance of the municipal roads and Barangay roads have been done by municipal office based on the request of Barangay. However, maintenance of road is not enough because municipal office has not enough maintenance equipment

Potable Water Supply System

Wells for drinking water are maintained by the users. When pump repairing is required, the cost is contributed equally by neighbors using the pump.

B.19 Dalena & Simanu ARC (No. 18)

a) History

Dalena & Simanu ARC located in the municipality of San Pablo was established in 1996 that include three Barangays, namely Dalena, Simanu Norte, and Simanu Sur. The Barangay residents of Simanu Norte are mostly Ilocanos, while, Barangay Dalena and Simanu Sur are Ibanag. Barangay Simanu Norte was supported by Plan International, which constructed a day care center assisted by the villagers. The villagers' counterpart for the project was their labor corresponding to 45,000 pesos' value.

b) Location

Dalena-Simanu ARC is located at northeastern astern in San Pablo municipality which is the most northern of Isabela Province at Right Bank of Cagayan river. The ARC is consists of three (3) Barangays, Darena, Simanu Norte and Simanu Sur. Pinacanuan river flows through the ARC to divide Dalena Barangay and Simanu Barangays and Simanu river divides Simanu Norte and Sur as Barangay boundary. And the ARC is approximately 3~7 km away from poblacion of San Pablo located on National Highway to Tuguegarao.

c) Socio-economic Conditions

The three Barangays have an annual revenue allotment amounting to about 927,000 pesos in 1999 that correspond to 251 pesos per head on a total ARC basis. It has a total population of 3,690 with a male-female population of 1,879 and 1,811 respectively. The number of households is 514 with an average family size of 7.2. The ARC has 816 ARBs. The number of female ARBs is 75, 12of who belongs to some organization.

The total area of the three Barangays is 2,039 ha. The ARC has a total agricultural area of 1,035 ha, about 411 ha of which are planted to palay and 600 ha to corn. The LAD working scope is 1,111 ha. Of this, about 592 or 53 % has been distributed as of third quarter of 1999. The average landholding of an ARB is 1.36 ha.

d) Natural Conditions

Topographic Condition

Dalena-Simanu ARC has a total land area of 1,591 ha occupied by Dalena 963 ha, Simanu Norte 638 ha and Simanu Sur 438 ha respectively. Land terrain of the ARC is mixture of flat and

hilly area with moderate slope except northern and eastern portion of Simanu Norte/Sur with mountainous.

e) Agricultural Conditions

Dalena is a typical river terrace, and Shimanu Norte and Sur are river terraces as well but including partly hillsides. Rice is grown with irrigation system and rain fed. Corn is grown entirely without irrigation. Soils are sandy loam with low water holding capacity.

Rice under irrigation is grown twice in the rainy season from April to September, yielding 80 cavans/ha in Dalena and 120 cavans/ha in Shimanu Norte, and in the dry season from November to April, yielding 60 cavans/ha in Dalena and 80 cavans/ha in Shimanu Norte. Rain fed rice is grown only once a year from October to February, yielding 40 to 60 cavans/ha. Corn is grown twice in a year in the rainy season from May to October, and in the dry season from November to April, yielding 60 to 80 cavans in both seasons.

Eggplant, mung bean, bitter gourd and tomato are grown in small scale, but they bring good money when the surplus is sold to the market. The other vegetables as sweet potato, squash, okra, string bean and sponge gourd are grown just for home consumption. Fruit trees are planted at the backyard for home consumption, but the surplus of mango, banana, avocado and orange make good money, and other fruits as pomelo, guava, jack fruit, star apple, tamarind, calamansi and coconut are just for home consumption. Farmers need road, capital for farming, solar dry yard, mechanical dryer, farm machines (hand tractor, tractor, corn sheller), irrigation pumps, and warehouse. All the farmers in the ARC borrow capital and sell rice and corn to only one trader. (refer to Table B-2-1)

f) Economic Condition of Farm Household

The average production for corn and irrigated rice are 50 and 87 cavans sold to private traders at 6.00 pesos and 8.00 peso/kg, respectively. After deducting the production cost of 10,000 peso/ha for corn and 12,000 peso/ha for irrigated palay, the net income per hectare is estimated at 10,000 pesos for corn and 45,000 pesos for irrigated palay for two croppings.

The income source and structure differ slightly by Barangay. Simanu Norte produces mainly palay, while corn production is dominant in the other two Barangays. Simanu Norte is more accessible to the poblacion so that 20 % of households has non-farm income source outside the Barangay.

The average household income is estimated at 26,000 pesos. About 80 % of which are derived from farming activity, and the remaining is from off-farm and non-farm income. The

proportion of off-farm income is higher in Dalena and Simanu Sur than that in Simanu Norte.

g) Farmer Beneficiaries and Organization

There are at least 6 organizations that exist in this ARC, namely, the San Pablo Agro-Forestry Multi Purpose Cooperative Inc., the Farmer's Credit Cooperative in Simanu Norte, Simanu Sur MPCI, Simanu Sur Rural Improvement Club, Simanu Sur Green Ladies Organization, and Simanu Sur Bayanihan Children's Club. The numbers of member are 232, 34, 62, 47, 50,and 32, respectively.

The San Pablo Agro-Forestry MPCI was organized in 1997 and registered with CDA in the same year with a CBU of 50,550 pesos. The cooperative was initiated by the DENR. It covers 6 Barangays including Simanu Sur and Norte. It has at present a total cash on hand of about 31,000 pesos with accounts receivable of about 50,000 pesos. The activities of the cooperative are buying and selling of agro-forest products, specifically firewood and planting of Gmelina trees in 60 ha of land for the cooperative use. It has planted coffee in a 6 ha area under the supervision of DENR. The cooperative has no business activity at present due to the ban on the cutting of trees. Since the cooperative area of coverage is wide, the cooperative meetings are generally held in the poblacion of San Pablo.

The Farmer's Credit Cooperative in Simanu Norte was organized in 1996 and registered with the CDA in 1998 with a CBU of 7,600 pesos. The present CBU is 32,700 pesos. The cooperative main activity is re-lending to members. The cooperative is now being re-vitalized by DAR-DF. They have intensified capital share collection. As a result, some 82 % of members have paid half of the required capital share.

The Simanu Sur MPCI is newly organized. It obtained a loan from LBP in 1998 for re-lending to members. Another 60,000 peso loan was granted to the cooperative by DA.

The organizations are generally weak. The organization activities are limited and focused on the effort to obtain credit and increase CBU through expansion of membership. The organization/cooperative are still considered as a conduit of loan source.

h) Marketing and Credit

The sale of products is carried out by farmer individually. Both rice and corn are sold to the private traders. The rice produced in Simanu Norte are usually sold to Simanu Sur however, on a limited basis because only few villagers buy rice. Livestock products are sold to private slaughters.

The Farmer's Credit Cooperative in Simanu Norte is providing credit to its members. The CBU collected is re-lend to members at the rate of 2,000 peso/member. The rate of interest is 10 % for 6 month payable after each cropping season. The total amount re-lend to members is about 28,000 pesos obtained by some 14 members.

Simanu Sur MPCI obtained a 1.2 million pesos' loan from LBP in 1998 for re-lending to members. Members were provided credit in the amount of 12,000 peso/ha with 9 % monthly interest payable within 6 months. The cooperative proposed one head of carabao per hectare as the collateral. From the CBU collected, the cooperative also provided credit of at least 500 pesos to members with 7 % interest rate. The collateral for the loan is 3 cavans of corn. Another 60,000 peso was granted as loan to the cooperative by DA in 1999. The money was used to buy a corn Sheller for the use of the cooperative.

Simanu Sur RIC also obtained 10,000 pesos' loan from DA payable within two years without interest. The amount was initially re-lend to 18 members at 500 pesos each payable within four months with 4 % per monthly interest. The amount re-paid by the initial borrowers are re-lend to other members on continuos and revolving basis.

j) Agricultural and Rural Infrastructures

Irrigation System

Part of Dalena Barangay is irrigated by lateral canals named A and a extra and B canals of San Pablo-Cabagan National Irrigation System (NIS) under NIA with irrigable area of 236 ha. And a part of Simanu Norte Barangay is occupied by Simanu Communal Irrigation System (CIS) with irrigated 186 ha and Simanu Sur has no irrigation system.

Road and Farm to Market Road

Town proper of Dalena is located at ten (10) km from poblacion of San Pablo, however, one (1) crossing of Pinacanuan river is not passable due to river sifting at present, detour route is available along irrigation service roads with 20 km of length to San Pablo. Length of market road to San Pablo from Simanu Norte is approximately eight (8) km with gravel paved. Simanu Sur barangay has direct access road to San Pablo, however during wet season, it is not motorable due to steep section unless taking a detour via Simanu Norte. Total Length of barangay roads within Dalena, Simanu Norte and Sur barangays are 6.5 km, 8.5 km and 6.5 km respectively.

Post-Harvest

There are solar dryer and MPP as a dryer in the ARC for drying of rice and corn, and warehouse of each barangays as follows;

Barangay	Dalena			Simanu Norte			Simanu Sur		
	Nos.	Size	T. Area	Nos.	Size	T. Area	Nos.	Size	T. Area
Solar Dryer	5	15 x 28 m	2,100 sq.m	3	15 x 28 m	1,260 sq.m	2	15 x 28 m	840 sq.m
MPP	0	-		2	17 x 4 m 100 m x 4 m	468 sq.m	2	75 x 4 m 100 m x 4 m	700 sq.m

There is no mechanical dryer and warehouse.

Potable Water Supply System

There are wells as potable water resources of each barangay as follows;

Dalena Barangay

Barangay	Dalena Centro			Flaviano Sitio			Barayong Sitio			Manique Sitio	
	H/H	Well	%	H/H	Well	%	H/H	Well	%	H/H	Well
Level-1	190	57	30%	99	89	90%	37	3	8%	6	River
Level-2	-	-	-	-	-	-	-	-	-	-	-
Level-3	-	-	-	-	-	-	-	-	-	-	-

Simanu Norte and Sur Barangays

Barangay	Simanu Norte						Simanu Sur		
	Town Proper			Nagbaralau Sitio					
	H/H	Well	%	H/H	Well	%	H/H	Well	%
Level-1	316	5	2%	32	0	0%	139	8	6%
Level-2	-	-	-	-	-	-	-	-	-
Level-3	-	-	-	-	-	-	-	-	-

It was not found remarkable bacteria in the drinking water from well, according to the simplified bacteriological testing paper.

k) Operation and Maintenance

Irrigation System

(Dalena Barangay)

Lat. A Extra Canal has completed in 1999 June constructed by NIA and financed by DAR, However, farmers cultivate corn, not rice. According to interviews of IA members, IA maintains in cutting glass and repairing the slope of lateral canals and barm six(6) times a year. And farm ditches are fully maintained by IA. And IA pays 1 cavan/ha at wet and 1.5 cavan/ha at dry season for water charge.

(Simanu Norte Barangay)

According to interviews of IA members, IA maintains in cutting glass and repairing the slope canals and barm once a month. And IA collects water charge 3.5 cavan/ha at wet and dry season.

(Simanu Sur Barangay)

There is no water system in the Barangay.

Road and Farm to Market Road

In general, Barangay roads are maintained by Barangay councils with assistance of LGU. LGU provides heavy machinery and materials, and Barangay shoulders to supply fuel for machinery, food and miriyanda to operators and so on.

Potable Water Supply System

Wells for drinking water are maintained by the users. When pump repairing is required, the cost is contributed equally by neighbors using the pump.

B.20 Dammao ARC (No. 19)

a) History

Dammao ARC was established in 1996 that include one Barangay, namely Dammao. The Barangay residents are mostly Ilocanos.

b) Location

Dammao Barangay is located at northeastern astern in Gamu municipality which is mostly center of Isabela Province. And the Dammao is at west of left bank of Cagayan and north of left bank of Magat River. The ARC is seven (7) km away from poblacion of Gamu and Main canal of MRIIS go round in the Dammao. And it is bounded on the north by Ilagan municipality, on the south by Buenavista Barangay, on the east by Cagayan river and on the west by Barcolan Barangay.

c) Socio-Economic Conditions

The Barangay has an annual revenue allotment amounting to 254,021 pesos that correspond to 542 peso per head. It has a total population of 469 with a male-female population of 239 and 230, respectively. The number of households is 102 with an average family size of 4.6. The number of ARBs is 123 all of who are males.

The area of the Barangay is 720 ha. The ARC has a total agricultural area of 171 ha, about 105 ha of which are planted to palay. The DAR LAD working scope is about 380 ha, of which 341ha or 89 % have been distributed as of third quarter of 1999. The average landholding of an ARB is 2.8 ha.

d) Natural Conditions

Topographic Condition

The Dammao a total land area of 720 ha of which farm land is 170 ha mixed area of flat and hilly area.

e) Agricultural Conditions

Rice is grown in 105 ha and corn is grown in 62 ha. But the rain fed paddy is planted with corn from May to October. The land is flat on a hill and soils are sandy loam. Cropping intensity is more than 126% except the pasture-land in the ARC.

Rain fed rice is grown once a year from August to December, yielding 40 cavans/ha on average. Palay was sold at 4.50 pesos/kg in wet and 6.00 pesos/kg after dried, earning merely 2,000 pesos/ha when dried, otherwise lost money in rice growing with this low yield. Some farmers grow corn during May and October and rice during September and March. Irrigated rice is grown twice a year from August to December, yielding 70 cavans/ha and from January to April, yielding 50 to 60 cavans/ha, and earning 1,125 to 18,000 pesos/ha. Corn is grown once in a year from May to August, yielding 60-70 cavans/ha, was sold at 4.90 pesos/kg and earned 7,700 to 10,150 pesos/ha.

Vegetables and fruit trees are planted at the backyard, but mung bean and peanut are sold to the local market. Animals are grown in small scale at the homestead, such as Carabao, cattle, pig, goat, chicken and duck. Farmers need capital for farming, irrigation, community center, farm to market road, reservoir for fish culture. They suffer from debt to private traders and rice tungro virus disease affects rice yield. (refer to Table B-2-1)

f) Economic Condition of Farm Household

The average production for palay and corn are 70 and 55 cavans sold to private traders at 6.00 and 8.00 peso/kg, respectively. After deducting the production cost of 12,000 peso/ha for rice and 10,000 pesos for corn, the net income per hectare is estimated at 32,000 and 13,000 pesos respectively for two croppings.

Vegetable gardening is common off-farm income source with approximately 15 households engaged in small-scale vegetable production. The common vegetables produced in the area are mongo, stringbeans, eggplants, ampalaya, etc. being sold mostly within and nearby Barangays. The average ARB household generates around 166,000 pesos of total net income, 98 % of which are derived from farm income.

g) Farmer Beneficiaries and Organization

There are two organizations in the ARC, namely, the Namnama MPCI and the Rural Improvement Club, with a total member of 38 and 26, respectively.

The Namnama MPCI was organized in 1992 and registered with CDA in the same year. After its registration in 1992, the cooperative was assisted by the Pangkaunlarang Development Association Inc. (PDAI), an NGO working for the World Vision Development Foundation. The NGO provided amount for the payment of 7 HP gasoline engine for the use of the cooperative. The loan to PDAI was already paid by the cooperative. Since the cooperative has not much activity, it became inactive until its re-organization in 1998. With the re-organization, new sets of officers were elected. The members decided to collect share capital from each member in the

amount of 500 pesos. However, the cooperative has collected only 900 pesos CBU including the membership fee of 25 pesos. The cooperative is still very weak and inactive. The cooperative cited the need for support from government organizations in terms of guidelines and direction and training like basic cooperative orientation and leadership training.

The Rural Improvement Club, composed mostly of women is engaged mainly in the clean and green program of the Barangay that includes planting of vegetables, plant gardening and beautification of the waiting shed area called "pergola" that also serves as meeting, reading and recreation area. The RIC members attended training on soap and candle making and meat processing. The RIC also attended training provided by the NGO like women in development, strategic direction planning and participatory active learning. Except for the clean and green activity, the RIC is inactive. Each member is required to pay their annual due of 25 pesos, however, not all members cannot pay the amount.

h) Marketing and Credit

The farmers sell products individually to private traders in Ilagan. Transportation cost from Dammao to Ilagan is 10 peso/cavan. There are no big traders in Gamu. The farmers also sell their excess vegetable products in Ilagan or Roxas.

The farmers secure credit from traders for farm production in terms of farm inputs and seeds with interest rate of 30 %. A 1000 peso is re-paid with cash of 1000 peso plus one cavan of palay. For basic necessities like rice and others, the farmers borrow cash or rice from more affluent Barangay residents. The farmer pays back in terms of labor during the planting or harvesting season.

j) Agricultural and Rural Infrastructures

Irrigation System

Out of 170 ha total farmland, only 24 ha is irrigated by main canal and five(5) lateral canals diverted from MRIIS through Pump station No. 3 under NIA. Original design of MRIIS was 100 ha, but irrigated 24 ha at present due to deficit of water volume in the main canal. And two (2) numbers of small pumps are used for supplementary irrigation pumping up from main canal during dry season.

Road and Farm to Market Road

Distance of market road to pobalacion of Gamu is about seven (7) km, however, access to Cauayan is more than 30 km away because of no bridge crossing at Magat river, even direct distance of Gamu and Cauayan is only less than 15 km. Total Length of barangay roads within the Dammao is 3 km.

Post-Harvest

Solar dryer and MPP as a dryer are shown below;

	Number	Size	Total area
Solar Dryer	4	15 x 28 m	1,680 sq.m
MPP	0	-	-

There is no mechanical dryer and warehouse.

Potable Water Supply System

There are wells as potable water resources as follows;

	House Hold	Well	Percentage
Level –1	102	12	12 %
Level –2	0	-	-
Level –3	0	-	-

It was not found remarkable bacteria in the drinking water from well, according to the simplified bacteriological testing paper.

Potable Water Supply System

There are wells as potable water resources as follows;

	House Hold	Well	Percentage
Level –1	102	12	12 %
Level –2	nil	-	-
Level –3	nil	-	-

It was not found remarkable bacteria in the drinking water from well, according to the simplified bacteriological testing paper.

k) Operation and Maintenance

Irrigation System

According to interviews of IA members, IA also engages maintenance of lateral canals once a month other than major works. And farm ditches are fully maintained by IA in cutting glass and repairing the slope and barm before irrigation season starts. And IA pays 5 cavan/ha at wet and 6 cavan/ha at dry season for water charge.

Road and Farm to Market Road

In general, Barangay roads are maintained by Barangay councils with assistance of LGU. LGU provides heavy machinery and materials, and Barangay shoulders to supply fuel for machinery, food and miriyanda to operators and so on.

Potable Water Supply System

Wells for drinking water are maintained by the users. When pump repairing is required, the cost is contributed equally by neighbors using the pump.

B.21 San Miguel ARC, Burgos (No. 20)

a) History

San Miguel ARC located in the municipality of Burgos was established in 1996 that include one Barangay, namely San Miguel. Majority of the Barangay residents are Ilocanos from Ilocos provinces. Plan International supports the Barangay.

b) Location

San Miguel Barangay is located in south part of Burgos municipality at left bank of Magat and left bank of Cagayan river. SIFFU MC-1 canal diverted by MRIIS traverses in the ARC from west to east. Poblacion of Burgos is about seven (7) km away from the San Miguel. And it is bounded on the north by Raniag, on the south by Catabban, on the east by San Roque, and on the west by Caliguian and Malasin Barangays.

c) Socio-Economic Conditions

The Barangay has an annual revenue allotment amounting to 342,902 pesos in 1999 that correspond to 317 pesos per head. The Barangay has a total population of 1,082 with a male-female population of 532 and 550, respectively. The number of households is 232 with an average family size of 4.7. Out of the 232 households, 106 or 45 % are ARBs. The number of female ARBs is 17, 2 of who belong to some organization.

The Barangay has a total area of 679 ha, the total agricultural area of which is 596 ha About 260 ha are planted to palay and 328 ha to corn. The DAR LAD working scope is 285 ha with about 219ha or 76.8 % distributed as of third quarter of 1999. The average landholding of an ARB is 2.1 ha.

d) Natural Conditions

Topographic Condition

San Miguel, Burgos Barangay has a total land area of 678.8 ha of which agricultural land is 646 ha with flat generally.

e) Agricultural Conditions

The total farmland is 596 ha in the ARC. Rice is grown in 260 ha with irrigation. Average holding of a farmer is 2 ha. The ARC is located at plain and soils are sandy loam with

low water holding capacity. Cropping intensity is estimated 139% in the ARC.

Rice is grown twice a year in the irrigated zone. The first is in the wet season from July to October, with yielding 60 cavans/ha. And a farmer earns merely 3,400 when sold after dry, but losing money when sold in wet palay (cost 17,000 pesos/ha). The second is in the dry season from December to April, with yielding 80 cavans/ha. A farmer earns 13,000 pesos/ha. Rice plant was heavily damaged with rice tungro virus in the wet season in the last 2 years, thus low yield in the season.

Vegetables are grown in small scale at the backyard, squash, eggplant, string bean and bitter gourd bring good money when they are sold to the local market. Fruit trees are planted at the back yard as well, and mango, santol, tamarind and banana earn well when the surplus is sold to the local market. Animals are kept in small scale at the homestead. Farmers need capital for farming, farm machines (hand tractor, thresher, and pumps), solar dry yard, mechanical dryer and warehouse. (refer to Table B-2-1)

f) Economic Condition of Farm Household

The average production for palay and corn are 85 and 47 cavans, sold to private traders at 8.00 and 6.00 peso/kg respectively. After deducting the production cost of 12,000 peso/ha for palay and 10,000 pesos for corn, the net income per hectare is estimated at 44,000 and 8,200 pesos for palay and corn, respectively for two cropping seasons.

The other sources of income are farm work in other farms (40 %), small consumer store (11 households), and remittance from relatives working abroad (5 households). The average ARB household generates around 45,394 pesos of total net income, 88 % of which are derived from farm income.

g) Farmer Beneficiaries and Organization

There are three organizations in the ARC, namely, the San Miguel Multi Purpose Cooperative Inc., Isabela Green Ladies Organization (IGLO) and the Rural Improvement Club (RIC). The San Miguel MPCI has a total member of 37. The RIC and IGLO have the same membership composition but with different set of officers.

The San Miguel MPCI was organized in 1992 and registered with CDA in the same year with a total CBU of 8,000pesos. It has at present a CBU of 18,500 pesos. The sources of funds of the cooperative are from collection of share capital, profit from lending and marketing operations. The cooperative cash on hand is about 1,600 pesos. Loans' collectible from members is about 36,900 pesos.

The present activities of the San Miguel MPCI are re-lending, palay marketing with NFA, collection of additional share capital and recruitment of new members. It has been a recipient of many training's since its re-organization in 1998 DAR, PCO, LBP, TESDA and DECS.

Though the cooperative has been organized and registered in 1992, it became active only in 1998 with the re-organization and election of new officers. From 1992 to 1997, the cooperative was dormant and inactive. With the re-organization, the cooperative was able to forge a marketing tie-up with the NFA for palay. However, the cooperative's major disappointment is its limited business activity due to limited capital. To expand operation, the cooperative need farm machinery, water pump for irrigation, solar and mechanical dryer. The cooperative intends to expand membership by recruiting more members. The training needs cited are value orientation, leadership training, cooperative ownership and management, skills on bookkeeping and accounting and skills on livelihood opportunities like livestock and poultry raising.

The Isabela Green Ladies Association, composed mostly of women are engaged mainly in the clean and green program of the Barangay (cleaning, fencing and planting of surrounding areas). Their other activities are assistance to Barangay Council during special occasions like food preparation and decorations and in the Barangay nutrition program.

The Rural Improvement Club (RIC) have the same activities as the IGLO. Some 25 members were given loan assistance through the People's Credit Financing Program of the DSWD. The IGLO and RIC members attended training dressmaking.

h) Marketing and Credit

The sale of products is carried out by the farmers through the cooperative. However, not all produce are sold to the market by the cooperative because of limitations on buying capacity of the NFA. The schedule of selling to NFA is on a limited day only. Once the schedule for the area has lapse, the farmers sell their produce individually to the private traders. The cooperative is given incentive by the NFA in the amount of .025 centavos per kilo of palay sold.

From the capital share collected and the income from palay marketing, the San Miguel MPCI was able to provide loans to its members. Loan extended to members are:

Total Loan extended to members:	36,900 pesos
Number who availed credit	23 members
Maximum loan amount extended	4,000 pesos
Minimum loan amount extended	1,000 pesos
Collateral:	Members are grouped into "seldas" of 5 with a group leader that will serve as credit guarantor/collector
Interest rate	20% for 4 month
Payment schedule	Per cropping season
Manner of collection	Deducted from sales to NFA

The RIC was able to get loan assistance from the Peoples Financing Program. Some 25 members were provided loan assistance in the amount of 5,000 each for livelihood generating activities like sari-sari store operation, buy and sell of vegetable, swine raising, etc. The amount is payable within six months with interest rate of 6 %. Collection of payment is every Friday in the amount of 239 pesos. From the amount of 239 pesos, some 10 pesos are deposited as savings and 5 pesos as mutual fund of the borrower. Until the time of interview, there has been no lapses in the payment of amortization.

j) Agricultural and Rural Infrastructures

Irrigation System

Out of 596 ha total farm land within the barangay, 56 ha is irrigated by individual small irrigation pump from SIFFU MC-1 canal of which water is pumped up by Station No.2 under District-III of MRIIS, NIA at the present. Furthermore, Lateral canal 2-C with length of 3 km is existed in the barangay from west to east of which water pumped by Station No. 3 connected through SIFFU MC-1. This canal has not been functioning due to water deficit since 1997.

Road and Farm to Market Road

Distance of municipal roads connecting to provincial road from town proper of San Miguel, is 2.5 km. Total Length of barangay roads within the San Miguel is about 16 km.

Post-Harvest

Solar dryer and MPP as a dryer are shown below;

	Number	Size	Total area
Solar Dryer	4	15 x 28 m	1,680 sq.m
MPP	2	10 x 4 m	80 sq.m

There is no mechanical dryer and warehouse.

Potable Water Supply System

There are wells as potable water resources as follows;

	Town proper			Singson Sitio		
	H/H	Well	%	H/H	Well	%
Level-1	232	143	62%	54	135	50%
Level-2	0	-	-	0	-	-
Level-3	0	-	-	0	-	-

It was not found remarkable bacteria in the drinking water from well, according to the simplified bacteriological testing paper.

k) Operation and Maintenance

Irrigation System

According to interviews of IA members, IA engages maintenance of lateral canals before

irrigation season starts. And farm ditches are fully maintained by IA in cutting grass and repairing the slope before irrigation season starts. And IA pays 3 cavan/ha for water charge.

Road and Farm to Market Road

In general, Barangay roads are maintained by Barangay councils with assistance of LGU. LGU provides heavy machinery and materials, and Barangay shoulders to supply fuel for machinery, food and miriyanda to operators and so on.

Potable Water Supply System

Wells for drinking water are maintained by the users. When pump repairing is required, the cost is contributed equally by neighbors using the pump.

B.22 San Ramon ARC (No. 21)

a) History

San Ramon ARC located in the municipality of Aurora was established in 1996 that include one Barangay, namely San Ramon. The area was formerly called Canol, a place inhabited by Kalingas, wild animals and birds. After World War II, the Pangasinenses cleared and settled in the place. In 1948, the municipality of Aurora was created. The area was recognized as a Barangay of Aurora. Ramon Lucas, a resident of the area was elected as one of its first municipal councilor. In 1950, the Barangay's name was registered and its name changed to San Roman in honor of Ramon, as their acknowledged leader. The Barangay residents are mostly Ilocanos.

b) Location

San Ramon Barangay is located at western part of Municipality of Aurora which is at western of Isabela Province at left bank of Cagayan river and about two (2) km from north of Magat river. And town proper of the ARC is approximately six (6) km away from Poblacion of Aurora located on National Highway. And it is bounded on the north by San Manuel municipal, on the south by Bannawag Barangay, on the east by San Andres Barangay and on the west by San Rafael Barangay.

c) Socio-Economic Conditions

The Barangay has an annual revenue allotment amounting to about 329,000 pesos that correspond to 397 peso/head. It has a total population of 829 with a male-female population of 420 and 409, respectively. The number of households is 180 with an average family size of 4.6. Out of the 180 household, 74 or 41 % are ARBs. The number of female ARBs is 12, 6 of who belong to some organization.

The Barangay has a total land area of 232 ha. The ARC has a total agricultural area of 225 ha, 135 ha of which are planted to palay and 87 ha to corn. The DAR Working Scope is 31 ha. Completely distributed as of third quarter of 1999. The average landholding of an ARB is 0.41 ha.

d) Natural Conditions

Topographic Condition

San Ramon Barangay has a total land area of 232 ha with flat generally.

e) Agricultural Conditions

Rice is grown in 135 ha with irrigation and corn in 87 ha located at the river terrace. Some farmers turned the cornfield into orchard of calamansi, good cash crop. Soils are clayey loam at the upper plain where rice is grown and sandy loam at the corn zone. The average holding is 2.0 ha per a farmer. Cropping intensity is 200 % in San Ramon.

Rice is grown twice a year in the wet season from May to November, yielding 60 to 70 cavans/ha, and in the dry season from December to April, yielding 70 to 80 cavans/ha. Rice earns 6,000 to 30,000 pesos/ha (with 8.00 pesos/kg in April and 6.00 pesos/kg in November). Farmers practice direct seeding. Corn is grown twice a year, one in the wet season from April to September and another in the dry season from November to April, yielding 60 to 70 cavans/ha in both seasons.

Citrus, calmansi is extending its orchard. Vegetables such as string bean, mung bean, cabbage, egg plant, tomato, etc. are planted in small scale. Animals as Carabao, cattle, goat chicken, and duck are kept at the homestead. There are five fishponds to keep telapia and fish are caught in the river as well. Farmers need farm to market road, multi-purpose pavement, and more information on farm practice. Problems are debt to private traders and rice tungro virus disease. (refer to Table B-2-1)

f) Economic Condition of Farm Household

The average production for corn and irrigated palay are 80 and 100 cavans sold to private traders at 6.00 and 8.00 peso/kg, respectively. After deducting the production cost of 10,000 peso/ha for corn and 12,000 peso/ha for irrigated palay, the net income per hectare is estimated at 28,000 and 56,000 pesos, respectively.

Swine breeding is common off-farm income source with approximately 50 heads being sold to the market annually accruing a net income of about 75,000 pesos on a total ARC basis. The average ARB household generates around 57,000 pesos of total net income, 89 % of which are derived from farm income.

g) Farmer Beneficiaries and Organization

There are two organizations in the ARC, namely, the Aurora ARB Multi Purpose Cooperative Inc. and the San Ramon Rural Improvement Club, with a total member of 30 and 172, respectively.

The Aurora Agrarian Reform Beneficiaries MPCI was organized in 1998 and registered with the CDA in the same year with a total CBU of 33,000 pesos. At present, the MPCI has

already collected a CBU of 77,000 pesos. The cooperative buys rice at 800 pesos from NFA then sell the rice within the Barangay at 920 pesos. Likewise, the cooperative is also involved in farm input trade of fertilizer and chemicals but on a very limited scale. The cooperative earning from the small scale activity up to the time of interview amounted to 4,500 pesos. The cooperative officers and members are also members of other Barangay organizations like the Irrigator's Association, Barangay Council and women's group.

The cooperative is newly organized with very limited funds and activities. They have cited the need for more training on leadership and financial management and PMES for new members. To make the cooperative viable and sustainable, the officers indicated the need to expand and increase membership and secure additional funds. The cooperative needs further support in terms of organization building and management.

The Rural Improvement Club, composed mostly of women is engaged mainly in the clean and green program of the Barangay. The members of the RIC are also members of the IGLO but with different sets of officers. The RIC pays membership fee of 10 pesos, however only 50 % actually pay the fee required.

The organization is active. They many activities/projects such as: (i) swine dispersal; (ii) clean and green and beautification of the Barangay; (iii) maintenance of community vegetable garden (400 sq.m) planted with vegetable that are for sale; (iv) cooking and selling of food for capital generation; (v) join in other Barangay visit and assessment; (v) assistance to the Barangay Council activities/projects. The income generated from the RIC activities/project are added to the organization fund. The projects/activities of the organization are initiated by the active leaders. However, the ordinary members are not very active and this maybe: (i) absence of guidelines that will define the role of members, ii) absence of personnel administration policy and iii) lack of opportunity for participation to the project. Some members complain that the officials unfairly carry out the distribution of profit.

h) Marketing and Credit

The farmer carries out the sale of products individually. Both rice and corn are sold to the private traders. Livestock products are sold to private slaughters. Vegetables are produced and sold within the Barangay and are 20 to 30 % cheaper than those sold in the poblacion.

The farmers obtain their credit from private traders with interest of about 30 % payable after harvest season. The farmers' organization in this ARC has not been granted any loan.

j) Agricultural and Rural Infrastructures

Irrigation System

Out of 232 ha a total land area, 140 ha is irrigated by four (4) Lateral DC-3 Canal with length of 1 km from Main Canal of MRIIS under NIA. Furthermore, about 9 ha of Tobacco is cultivated by 9 nos. of deep tube well small pumps in contract basis with Tobacco company.

Road and Farm to Market Road

Distance to poblacion of Aurora on National Highway is 6 km with gravel pavement road. Length of farm roads within the barangay is 1.2 km, and about 4.3 km is in residential area.

Post-Harvest

Solar dryer and MPP as a dryer shown below;

	Number	Size	Total area
Solar Dryer	2	15 x 28 m	840 sq.m
MPP	0	-	-

There is no mechanical dryer and warehouse.

Potable Water Supply System

There are wells as potable water resources as follows;

	House Hold	Well	Percentage
Level –1	250	84	34 %
Level –2	0	-	-
Level –3	0	-	-

It was not found remarkable bacteria in the drinking water from well, according to the simplified bacteriological testing paper.

k) Operation and Maintenance

Road and Farm to Market Road

In general, Barangay roads are maintained by Barangay councils with assistance of LGU. LGU provides heavy machinery and materials, and Barangay shoulders to supply fuel for machinery, food and miriyanda to operators and so on.

Water Supply System

Wells for drinking water are maintained by the users. When pump repairing is required, the cost is contributed equally by neighbors using the pump.

B.23 Viola Estate Cluster ARC (No. 22)

a) History

Viola Estate ARC located in the municipality of Reina Mercedes was established in 1996 that includes four Barangays, namely Santiago, Banquero, Binarsang and Sallucong. Majority of the Barangay residents in Santiago and Sallucong are Ilocanos while those from Binarsang and Banquero are Ibanag. Plan International Inc supports Barangays Santiago and Banquero.

b) Location

Viola Estate Cluster is located at northwestern astern in Reina Mercedes municipality where Magat river traverses east to west and is at left bank of Cagayan river. The Cluster is consists of four (4) Barangays, Satiago, Banquero, Sallucong and Binarsang. And the Cluster is bounded on the north by Burgos and Gamu municipalities, on the south & east by Magat river, and on the west by Luna municipality. And the Cluster is located in direct distance of only 10 km from Cauayan, however, there is no direct connection to Cauayan even poblasion of Reina Marcedes.

c) Socio-Economic Conditions

The Viola Cluster has an annual revenue allotment amounting to about 1,072,200 pesos in 1999 that correspond to 321 peso/head. It has a total population of 3,340 with a male-female population of 1,736 and 1,604, respectively. The number of households is 655 with an average family size of 5.1. Out of the 655 households, 84 or 13 % are ARBs. The number of female ARBs is 36.

The Viola Cluster has a total area of 1,262 ha, the total agricultural area of which is 993 ha. About 982 ha are planted to corn and 11 ha to other crops. The DAR LAD working scope is 658 ha with about 513 ha or 78 % distributed as of third quarter of 1999. The average landholding of an ARB is 1.3 ha.

d) Natural Conditions

Topographic Condition

Viola Estate Cluster has a total land area of 1,262 ha occupied by Satiago 402 ha, Banquero 481 ha, Sallucong 145 ha and Binarsang 234 ha respectively. Land terrain of the ARC is flat area.

e) Agricultural Conditions

Viola Estate Cluster is located at the river terrace and characterized as corn growing area of 982 ha. Average holding is 3 ha per a farmer. Soils are sandy loam. Cropping intensity is more than 200 %. Road condition is hard to haul the farm products in the rainy season.

Cropping pattern is divided into two, continuous cropping of corn and mixed cropping of tobacco, corn and mung bean. Farmers plant 50 % corn and 50 % tobacco. Corn is grown continuously, corn after corn, therefore more than twice in a year. Corn yields 65 to 75 cavans/ha. Mung bean yields 10 to 15 cavans/ha. Corn makes profit from 10,000 to 13,000 pesos/ha. Mung bean can be harvested in 2 months and it is grown between tobacco and corn. In the mixed cropping pattern, tobacco is grown from November to March, corn from March to July, mung bean from July to October.

Vegetables are grown at the backyard, such as string bean, okra, egg plant, pechay, radish, tomato, and fruit trees as mango, banana, star apple, calamansi, coconut and guava are grown at the backyard as well. Animals as Carabao, cattle, goat, chicken, pig, duck, etc. are kept at homestead. The biggest problem in the ARC is flood and soil erosion caused by the Cagayan, and people want the flood control. Farmers need solar dry yard, road, farm machines (tractor, corn sheller, irrigation pump), warehouse and community center. (refer to Table B-2-1)

f) Economic Condition of Farm Household

The average production corn is 80 cavans per ha, sold to private traders at 6.00 peso/kg. After deducting the production cost of 10,000 pesos, the net income per hectare is estimated at 28,000 pesos for two cropping seasons.

The other sources of income are farm work in other farms, small consumer store, and remittance from relatives working abroad. In Barangay Santiago, about 25 families receive remittance from relatives abroad. The average ARB household generates around 39,000 pesos of total net income, 76 % of which are derived from farm income.

g) Farmer Beneficiaries and Organization

There are many organizations in the ARC, namely, the Agrarian Reform Beneficiaries Association Multi Purpose Cooperative Inc., and the Community Management Team in Santiago, the Banquero Multi Purpose Cooperative and Community Management Team in Banquero, the Sallucong Multi Purpose Cooperative Inc. in Sallucong and Isabela Green Ladies Organization (IGLO) and the Rural Improvement Club (RIC) in the four Barangays of the ARC Cluster. However, only the organizations in Santiago and the Community Management team in Banquero

are still operational and functional. The other organizations are inactive (RIC and IGLOs) or not functional (Banquero and Sallucong MPCI).

The Agrarian Reform Beneficiaries Association MPCI in Santiago was organized in 1993 and registered with CDA in the same year with a total CBU of 12,000pesos. It has at present a CBU of 68,880 pesos. The sources of funds of the cooperative are from collection of share capital and profit from lending operations. The cooperative cash on hand is about 14,000 pesos. Loans' collectible from members is about 83,420 pesos.

The present activities of the ARBA MPCI are re-lending, collection of additional share capital and management of IPM Corn Farm Demonstration Area of 4,000 sq. m. It has been a recipient of many training's since its re-organization in 1998 mostly from DAR. The Cooperative was a recipient of cattle dispersal program from DA in 1998. Four cattle were provided to four members. One cattle has already been dispersed to another one member. The cooperative has two solar dryers with area total area of 840 sq. m. Through the cooperative, 13 cooperative members availed of shallow tube well assistance from DA and 56 members availed of plant now pay later scheme program of DA.

Though the cooperative has been organized and registered in 1993, it became inactive after its organization when its loan application with LBP was disapproved. It became active only in 1998 with the re-organization and election of new officers. In 1997, the cooperative members decided to re-organized through the initiative of DAR. The cooperative members realized that they will not be able to avail of projects if they will not re-activate their cooperative. They were also encouraged by the example of successful cooperatives within their vicinity. To expand operation, the cooperative need warehouse, 4-wheel tractor, loan assistance and farm-to-market roads. The cooperative cited that since its re-organization in 1997, they have not encountered problems in the collection of share capital and loan payment. With good collection payment, the cooperative fund will continue to increase that will provide opportunity for the cooperative to expand business activity

The Rural Improvement Club (RIC) and the Isabela Green Ladies Association (IGLO), composed mostly of women are engaged mainly in the clean and green program of the Barangay (cleaning, fencing and planting of surrounding areas). Their other activities are assistance to Barangay Council during special occasions like food preparation and decorations.

The Community Project Management Team (CPMT) of Santiago and Banquero were organized to support the Plan International program in the community. The CPMT officers are elected by Plan International recipients. They maybe Planner (recipients) themselves or any other member of the community. They assist the Plan International in the coordination, monitoring and

implementation of projects. The usual officers of the CPMT organization are chairman, coordinator, bookkeeper, canvasser, purchaser, secretary, treasure, monitoring and evaluation officer and donor service volunteers. The membership composition of the Santiago and Banquero CPMT area 56 and 108, respectively.

The Banquero and Sallucong MPCIs have long been inactive and not functioning. The Banquero MPCI obtained loan from LBP that was not paid while the Sallucong MPCI provided loan to 14 members that has not been paid since then.

h) Marketing and Credit

The sale of products is carried out by the farmers individually to the private traders in Ilagan. Produce sold to Ilagan are corn, tobacco, and vegetables. The ARC Cluster is not very accessible to Reina Mercedes. It is more proximate to Ilagan.

From the capital share collected, the ARBA MPCI was able to provide loans to its members. Loan extended to members are:

Total Loan extended to members:	83,420 pesos
Number who availed credit	56 members
Basis for loan availment	Twice the capital share of member
Maximum loan amount extended	4,000 pesos
Minimum loan amount extended	2,000 pesos
Collateral/Guarantee:	Share capital
Interest rate	18% for 6 month
Payment schedule	Per cropping season
Manner of collection	Deducted from sales to NFA

Through the ARBA MPCI (Santiago), 13 members became recipient of Shallow Tube Well (STW) loan from DA. The cost of STW is 47,800. The farmer member will pay the amount directly to DA within five years without interest. Corn seeds were also loaned out to 56 cooperative members under the "Plant Now Pay Later Scheme" of DA. The farmers pay the actual cost of the seed after harvest without interest.

j) Agricultural and Rural Infrastructures

Irrigation System

There is no irrigation system in the Cluster. Small potion of agricultural land cultivated by rice and Tobacco are irrigated by deep tube small pump wells. In special, at Santiago and Banquero Barangays, tobacco is cultivated by pumps provided by Lancaster Philippines Company in contract basis.

Road and Farm to Market Road

It is not accessible to go to poblacion of Reina Mercedes due to cutting by Magat river. Nevertheless, direct distance of the ARC to poblacion is only five (5) km, two (2) barangays of Santiago and Banquero on eastern part of ARC depend on town proper of Gamu or Ilagan, and other barangays located on western part of ARC depend on Aurora or Roxas.

Post-Harvest

There are solar dryer and MPP as a dryer in the ARC for drying of rice and corn of each barangays as follows;

Barangay	Satiago			Banquero		
	Nos.	Size	T. Area	Nos.	Size	T. Area
Solar Dryer	6	15 x 28 m	2,520 sq.m	2	15 x 28 m	840 sq.m
MPP	0	-	-	0	-	-

Barangay	Sallucong			Binarsang		
	Nos.	Size	T. Area	Nos.	Size	T. Area
Solar Dryer	3	15 x 28 m	1,260 sq.m	6	15 x 28 m	2,520 sq.m
MPP	0	-	-	0	-	-

There is no mechanical dryer and warehouse in any barangay.

Potable Water Supply System

There are wells as potable water resources of each barangay as follows;

Barangay	Satiago			Banquero			Sallucong			Binarsang		
	H/H	Well	%	H/H	Well	%	H/H	Well	%	H/H	Well	%
Level-1	168	114	68%	400	100	25%	80	72	90%	65	12	18%
Level-2	0	-	-	0	-	-	0	-	-	0	-	-
Level-3	0	-	-	0	-	-	0	-	-	0	-	-

It was not found remarkable bacteria in the drinking water from well, according to the simplified bacteriological testing paper.

k) Operation and Maintenance

Irrigation System

There is no irrigation system in the ARC

Road and Farm to Market Road

In general, Barangay roads are maintained by Barangay councils with assistance of LGU. LGU provides heavy machinery and materials, and Barangay shoulders to supply fuel for machinery, food and miriyanda to operators and so on.

Water Supply System

Wells for drinking water are maintained by the users. When pump repairing is required, the cost is contributed equally by neighbors using the pump.

Appendix C Agriculture

C.1 Analyses Through The Questionnaire On Present Agriculture

C.2 Agriculture Development Plan

C.3 Livelihood Program

Appendix C Agriculture

C.1 Analyses through the questionnaire on present agriculture

A survey of farmers in the target ARCs was undertaken through 613 interviews with questionnaires and Important information related to agriculture and farming is collected here.

(1) Size of Land Holding

The range of sizes of land holdings of respondents from Isabela Settlement is from 0.02 to 22 hectares and from 0.06 to 19.8 hectares in the other ARCs. The average landholding of respondents from the Isabela Settlement is 4.3 hectares compared to 2.1 hectares in the other ARCs. The disparity can be due to the number of respondents with landholdings of more than four (4) hectares from the Isabela Settlement, compared with those from the other ARCs.

Table C.1.1 Sizes of Landholdings

Total Landholdings (ha)	Isabela Settlement		Other ARCs	
	number	percent	number	percent
0.5 and below	20	8.4%	45	11.8%
over 0.5 to 1 ha	26	11.3%	94	24.6%
over 1 to 2 ha	41	17.6%	104	27.3%
over 2 to 3 ha	38	16.2%	83	22.1%
over 3 to 4 ha	11	4.7%	12	3.2%
over 4 to 5 ha	5	2.2%	15	3.9%
over 5 to 7 ha	28	12.0%	10	2.7%
over 7ha	50	21.5%	11	3.0%
not specified/not clear	13	6.0%	7	1.8%
Total	232	100%	381	100%

(2) Sources of Seeds

Among the respondents who raise rice, 45.1% get their seeds from private dealers, 35.8% from their own harvests and 19.9% from the Department of Agriculture. Other sources are private lenders and Philrice.

Among corn farmers, about 72.6% obtain their seeds from private dealers, 15.1% from the Department of Agriculture and 7.3% from their harvests. Other sources are moneylenders.

Table C.1.2 Sources of Seeds

Sources	Rice		Corn	
	Number	Percent	Number	Percent
Private Dealers	138	45.1%	287	72.6%
Own harvests	110	35.8%	30	7.3%
Department of Agriculture	61	19.9%	60	15.1%
Other Sources	8	2.7%	20	5.0%

(3) Kinds of animal/machinery used

Of the 546 respondents who reported plowing as a farming activity, 46.7% harness the carabao, 23.6% use the 2-wheel tractor and 13.9% use the 4-wheel tractor. About 6.8% use a combination of carabao and 2-wheel tractor, 4.4% use both the carabao and 4-wheel tractor and 1.8% combine 2-wheel and 4-wheel tractors. Only 1.5% uses cattle for plowing.

For harrowing, carabao users comprise 58.9% of the 491 who reported performing this land preparation activity, 25.5% use 2-wheel tractor and 7.9% use 4-wheel tractor. About 2.9% use a combination carabao and 2-wheel tractor, 1.6% combine 2-wheel and 4-wheel tractors. Only 1.6 % use cattle for harrowing and 1% use both the carabao and 4-wheel tractor.

In huddling, which is usually performed by corn farmers, 83.8% of the 450 respondents who said they conduct this activity cited the use of carabao, 9.6% use 2-wheel tractor and 3.5% use cattle. Less than 1% each use the 4-wheel tractor and other different combinations of the animals and machines available to them.

Table C.1.3 Animal/Machinery Used for Land Cultivation

Animal/Machinery used	Plowing		Harrowing		Huddling	
	Number	Percent	Number	Percent	Number	Percent
Carabao	255	46.7%	289	58.9%	377	83.8%
2-wheel tractor	129	23.6%	125	25.5%	43	9.6%
4-wheel tractor	76	13.9%	39	7.9%	4	0.9%
Cattle	8	1.5%	8	1.6%	16	3.5%
Carabao/2-wheel tractor	37	6.8%	14	2.9%	4	0.9%
Carabao/4-wheel tractor	24	4.4%	5	1.0%	2	0.4%
2 & 4 wheel tractor	10	1.8%	8	1.6%	0	0%
Other combination	7	1.3%	3	0.6%	4	0.9%
Total	546	100%	491	100%	450	100%

For threshing, of the 546 who engage in the activity, 89.2% use machines, 4.6% employ manual labor or beating and another 4.6% use a combination of the two (2) methods. Others or 1.6 % use corn

shellers.

Of the 444 respondents who have their produce milled, 80.8% use private mills, 14.9% use communal mills 2.0% use the native pounding tool and 1.1% use corn mill. About 1.2% of the 434 respondents use more than one method.

About 49.9% of the 545 respondents who need drying facilities use the community multi-purpose pavement, 16.7% use public open space, 15.4% use private open space, and 6.2% the road. About 3.7% use a combination of the road and the community multi-purpose pavement, 3.3% use both their own open space and the community multi-purpose pavement, and the rest use other combinations.

Table C.1.4 Drying facilities in the community

Drying facility used	Number of users	Percent
Community multi-purpose pavement	272	49.9%
Public open space	91	16.7%
Private open space	84	15.4%
Road	34	6.2%
Road and community multi-purpose pavement	20	3.7%
Own open space and community pavement	18	3.3%
Other combinations	26	4.8%
Total	545	100%

Forty (40) respondents reported ownership of 2-wheel hand tractor. Nine (9) said they own portable rice thresher and five (5) have portable water pumps. Other equipment owned by a few respondents are private dryer, motor, diesel tractor, 4-wheel tractor and jeep.

(4) Fertilizer and Agricultural Chemicals

Of the 531 respondents who use fertilizer, 97.2% or 520 use the inorganic type. The commonly used fertilizer is urea, closely followed by 14-14-14 (complete). Other chemical fertilizers used by the respondents are Triple Super Phosphate and 16-20-0 (ammonium phosphate).

Only 1.8% or 11 use organic fertilizer. The most common organic fertilizer used for crop raising is animal manure. Forty (40) respondents said they produce organic fertilizer, but most of them use this for their backyard gardens, not for their main crops.

Only 306 or about 50% of the respondents use herbicides and 12.7% use fungicide. About 67% use insecticide. The herbicide brands used most often by the respondents are Power, Machete, Sofit and Athracine. Among the users of fungicide, the popular brands are Baylucide and Funguran. The overwhelming favorites among the insecticide users are Karate and Cymbush. Other brands of

agricultural chemicals used are Decis R, Furadan, Lannante, Lorsban and others.

Table C.1.5 Users of Fertilizers and Agricultural Chemicals

Fertilizers/Chemicals	Users		Non-users	
	Number	Percent	Number	Percent
Fertilizers				
Inorganic	518	84.5%		
Organic	11	1.8%		
Total	529	86.3%	82	13.4%
Agricultural chemicals				
Herbicides	306	50.0%	307	50.0%
Fungicides	78	12.7%	535	87.3%
Insecticides	410	66.9%	203	33.1%

(5) Production of Major Crops

Table C.1.6 Production of Major Crops at Present

ARCs	Farmland	RICE										CORN						orchard & other
		total	irrigated	rainfed	yield/ha(irri.)cav.		yield/ha	production in cavans				total	yield/ha, cavans		production in cavans			
	ha	ha	ha	ha	dry sea.	wet sea.	rainfed	dry sea.	wet sea.	rainfed	total	ha	Dry sea.	Wet sea.	dry sea.	wet sea.	Total	ha
A. Almost Flat																		
2. Quiling	229	151	151	0	108	80	0	16,308	12,080	0	28,388	69	84	63	5,796	4,221	10,017	9
5. San Miguel	436	327	297	30	88	127	39	26,136	37,719	1,170	65,025	76	78	78	5,928	5,928	11,856	33
6. Amalungan-Rizal	310	305	305	0	90	80	0	27,450	24,400	0	51,850	0	0	0	0	0	0	5
12. Luzon	462	415	415	0	148	103	0	61,420	42,745	0	104,165	28	78	82	2,184	2,296	4,480	19
15. Canan	696	678	678	0	129	120	0	87,462	81,360	0	168,822	0	0	0	0	0	0	18
17. Bantug Petines	450	444	444	0	105	100	0	46,620	44,400	0	91,020	0	0	0	0	0	0	6
20. San Miguel Burgos	596	260	260	0	56	53	0	14,560	13,780	0	28,340	328	72	78	23,616	25,584	49,200	8
21. San Ramon	225	135	135	0	120	110	0	16,200	14,850	0	31,050	87	96	120	8,352	10,440	18,792	3
sub-total	3,404	2,715	2,685	30	106	97	39	296,156	271,334	1,170	568,660	588	82	84	45,876	48,469	94,345	101
Mixture of Flat & Hilly and River Terraces																		
1. Lapogan	894	95	20	75	80	80	50	1,600	1,600	3,750	6,950	460	75	75	34,500	34,500	69,000	339
4. San Manuel	749	300	230	70	45	45	27	10,350	10,350	1,890	22,590	400	42	42	16,800	16,800	33,600	49
8. Minagbag	909	467	390	77	100	75	45	39,000	29,250	3,465	71,715	400	65	86	26,000	34,400	60,400	1,630
9. Cabaruan	513	183	53	130	69	64	43	3,657	3,392	5,590	12,639	320	74	74	23,680	23,680	47,360	10
10. Capirpiriwan	370	102	47	55	64	84	43	3,008	3,948	2,365	9,321	179	74	78	13,246	13,962	27,208	89
11. Fermeldy	311	0	0	0	0	0	0	0	0	0	0	306	84	108	25,704	33,048	58,752	5
14. Yeban Norte/Sur	1,103	116	48	68	98	98	42	4,704	4,704	2,856	12,264	936	80	80	74,880	74,880	149,760	51
16. Andarayan	353	315	135	180	90	85	68	12,150	11,475	12,240	35,865	15	78	75	1,170	1,125	2,295	23
18. Dalena & Shimanu	1,035	411	287	124	72	56	30	20,664	16,072	3,720	40,456	600	70	70	42,000	42,000	84,000	24
19. Dammao	171	105	73	32	74	78	37	5,402	5,694	1,184	12,280	62	72	72	4,464	4,464	8,928	4
22. Viola Estate	993	0	0	0	0	0	0	0	0	0	0	982	94	94	92,308	92,308	184,616	11
sub-total	7,401	2,094	1,283	811	77	74	43	100,535	86,485	37,060	224,080	4,660	73	78	354,752	371,167	725,919	2,235
C. Almost Hilly																		
7. Isabela Settlement																		
7-1 La Suerte Cluster	1,103	193	179	14	67	64	51	11,993	11,456	714	24,163	882	71	75	62,622	66,150	128,772	28
7-2 Depasive Cluster	1,172	92	72	20	47	34	32	3,384	2,448	640	6,472	489	80	77	39,120	37,653	76,773	591
7-3 Cenea Cluster	1,568	211	123	88	47	42	42	5,781	5,166	3,696	14,643	778	71	68	55,238	52,904	108,142	579
13. Progreso	284	87	87	0	46	32	46	4,002	2,784	0	6,786	137	66	61	9,042	8,357	17,399	60
sub-total	4,127	583	461	122	52	43	43	25,160	21,854	5,050	52,064	2,286	72	70	166,022	165,064	331,086	1,258
Total	14,932	5,392	4,429	963				421,851	379,673	43,280	844,804	7,534			566,650	584,700	1,151,350	3,594

Source: Agricultural Statistics, Isabela Province, 1997

Table C.1.7 Price of Farm Input

(unit: pesos)

No	Items	Cauayan	remark	Santiago	remark	Roxas	remark	Lapogan ARC	remark	San Vicente	remark
Farm machines											
1	Tractor(4 wheel)	2,100,000	80hp	2,400,000	86hp	2,400,000	88hp				
2	Hand tractor	35,000	gasol.	58,500	7hp	63,000	7hp	25,000	China		
3	Trailer	12,000		13,500				7,000	Phil.		
4	Thresher	79,000	d/p	71,500	d/p	94,000	d/p				
5	Corn sheller			51,500		75,000					
6	Mech. dryer	415,000	vert.			120,000		90,000			
7	Grass cutter	13,000		13,500		14,500					
8	Pump	58,000		58,000	2.5hp	13,500					
9	Knapsack sprayer			1,300				1,200		1,800	
Farm tools											
1	Plow(cattle)			85	blade						
2	Plow(carabao)	800						650			
3	Leveler(corn)	500						300		1,200	
4	Leveler(rice)							1,500		1,200	
5	Hoe	120		180				150			
6	Shovel	90		420						500	
7	Sickel	15		65				30		60	
8	Big knife (boro)	70		75						100	
9	Wtering can	120		150							
10	Rope			6	yard						
Fertilizer											
1	14-14-14	365	bag	370	bag	380	bag	390	bag	320	bag
2	16-20-0	360	bag	360	bag	380	bag	380	bag	320	bag
3	Urea	355	bag	385	bag	395	bag	320	bag	280	bag
4	Manure							210	bag		
Chemicals											
Insecticide											
1	Buci	420	L								
2	Karate	800	L	900	L	870	L	300	0.5L	600	L
3	Simbos	650	L	710	L			300	0.5L		
4	Fenom D			570	L						
5	Simbax					695	L				
6	Nobichiron									450	L
7	Parapest									450	L
Fungicide											
1	Kocide	290	kg								
Herbicide											
1	Machete(Granule)	600	kg								
2	Machete(Liquid)	420	L	420	L	385	L	350	0.5L		
3	Sufit	650	L	660	L						
4	Atracin	350	kg					310	0.5L		
5	Rilofh					460	L	350	1.5kg		
6	2-4-D			250	L	260	L			280	L
7	Polor									180	L
Corn seed											
1	Pioneer 3013	1,750	bag/40								
2	Pioneer 30A65	1,750	bag/40	1,800	bag/40						
3	Pioneer 3014	1,700	bag/40								
4	Pioneer 3030	1,500	bag/40			1,630	bag/40				
5	Pioneer 30A10	1,400	bag/40	1,550	bag/40						
6	Cargil 818			1,650	bag/40	1,650	bag/40				
7	Cargil 909			1,800	bag/40						
8	Cornworld 18			1,050	bag/40						
9	Cornworld 48			1,400	bag/40						
Rice seed											
1	IR 64 (Certified)					620	bag/40				
Vegetable seed											
1	Egg plant					30	pack				
2	Pechai					7	pack				
3	Tomato					15	pack				
4	Mustard					7	pack				
5	String bean					10	pack				
6	Okra					7	pack				
7	Kankon					20	pack				
8	Sponge gourd					7	pack				

Sources: Dealers in Cauayan, Santiago city and Roxas, and farmers in Lapogan ARC and San Vicente in La Suerte Cluster.

C. Agriculture Development Plan

Table C.2.1 Cropping Plan

No.	ARCs farmland (other)	Crops	Area ha	No. of cropping	Plan of Cropping Patterns											
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Lapogan	rice	270	2	rice						rice				rice	
		rice+mung bean	140	3	rice	mung bean					rice				rice	
		corn	110	2	corn					corn					corn	
	894ha (339ha)	fruit	35	continue												
2	Quiling	rice	101	2	rice							rice				rice
		rice+mung bean	50	3	rice		mung bean					rice				rice
		corn+tobacco	57	2	tobacco				corn							
	229ha(6ha)	corn+vegetables	15	2 or 3	vegetables or corn					corn or vegetables					veget. or corn	
4	San Manuel	rice irrigated	230	2	rice							rice				
		rice rain fed	70	1								rice				
		corn	300	2	corn						corn					
	749ha(49ha)	fruit	100	continue												
5	San Miguel	rice	227	2	rice							rice				rice
		rice+mung bean	100	3	rice		mung bean					rice				rice
		corn	60	2	corn						corn					
	436ha(29ha)	corn+vegetables	20	2 or 3	vegetables or corn					corn or vegetables						
6	Amulungan-Rizal	rice	205	2	rice							rice				
	310ha(5ha)	rice+mung bean	100	3	rice		mung bean					rice				rice
7	Isabela Settlement															
7-1	La Suerte Cluster	rice irrigated	179	2	rice							rice				rice
		rice rain fed	14	1								rice				
		corn	700	2	corn						corn					
	1,103ha(28ha)	fruit & trees	182	continue												
7-2	DIPASIVI Cluster	rice irrigated	72	2	rice							rice				rice
		rice rain fed	20	1								rice				
		corn	390	2	corn						corn					
	1,172ha(591ha)	fruit & trees	99	continue												
7-3	CENEA Cluster	rice irrigated	123	2	rice							rice				rice
		rice rain fed	88	1								rice				
		corn	620	2	corn						corn					
	1,568ha(579ha)	fruit & trees	158	continue												

No.	ARCs	Crops	Area ha	No. of cropping	Plan of Cropping Patterns											
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
8	Minagbag	rice irrigated	490	2		rice					rice					
		corn	300	2	corn					corn						
	909ha(42ha)	fruit & trees	77	continue												
9	Cabaruan	rice irrigated	153	2	rice								rice			
		rice rain fed	30	1									rice			
		corn	200	2	corn						corn					
	513ha(10ha)	fruit & trees	120	continue												
10	Capirpiriwan	rice irrigated	102	2	rice							rice				rice
		corn	100	2	corn						corn					
	370ha(89ha)	fruit, flower	79	continue												
11	Fermeldy	corn	151	2	corn					corn					corn	
		corn+tobacco	47	2	tobacco					corn						
		corn+tobaco+mung	47	3	tobacco				corn				mung bean			
		corn+vegetables	40	2 or 3	corn					corn or vegetables					vegetables or	
	311ha(5ha)	fruit	21	continue												
12	Luzon	rice	290	2	rice						rice					rice
		rice+mung bean	125	3	rice	mung bean					rice				rice	
		corn	15	2	corn					corn					corn	
	462ha(19ha)	corn+vegetables	13	2 or 3	corn					corn or vegetables					vegetables or	
13	Progreso	rice irrigated	87	2	rice						rice					rice
		corn	80	2	corn						corn					
	284ha60ha)	fruit & trees	57	continue												
14	Yeban Norte/	rice irrigated	48	2	rice							rice				rice
	Benito Solven	rice rain fed	68	1								rice				
		corn	750	2	corn					corn					corn	
	1,103ha(51ha)	fruit, trees, flowers	186	continue												
15	canan	rice irrigated	448	2	rice						rice					rice
	696ha(18ha)	rice+mung bean	230	3	rice	mung bean					rice				rice	
16	Andarayan	rice irrigated	210	2	rice						rice					rice
		rice+mung bean	105	3	rice	mung bean					rice				rice	
		corn	5	2	corn					corn					corn	
	353ha(23ha)	corn+vegetables	10	2 or 3	corn					corn or vegetables					vegetables or	

No.	ARCs	Crops	Area ha	No. of cropping	Plan of Cropping Patterns											
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
17	Bantug Petines	rice irrigated	294	2	rice						rice					rice
	450ha(6ha)	rice+mung bean	150	3	rice	mung bean					rice				rice	
18	Dalena & Shimanu	rice irrigated	287	2					rice					rice		
		rice rain fed	124	1					rice							
		corn	480	2	corn					corn					corn	
		corn+vegetables	30	2 or 3	corn				corn or vegetables						vegetables or	
	1,035ha(24ha)	fruit & trees	90	continue												
19	Dammao	rice irrigated	107	2			rice							rice		
	171ha(4ha)	rice+mung bean	60	3			rice		mung bean					rice		
20	San Miguel Burgos	rice irrigated	56	2		rice							rice			
		rice rain fed	114	1									rice			
		rice+mung bean	90	2	mung bean								rice			
		corn	260	2		corn						corn				
		corn+vegetables	18	2 or 3	vegetables or corn					corn or vegetables						
	596ha(8ha)	fruit	50	continue												
21	San Ramon	rice irrigated	55	2	rice						rice					rice
		rice+mung bean	80	3	rice	mung bean					rice				rice	
		corn	67	2	corn					corn						corn
		corn+vegetables	10	2 or 3	corn				corn or vegetables						vegetables or	
	225ha(3ha)	fruit	10	continue												
22	Viola Estate Cluster	corn	525	2	corn					corn						corn
		corn+tobacco+mung	260	3	tobacco				corn			mung bean				
		corn+vegetables	47	2 or 3	corn				corn or vegetables						vegetables or	
	993ha(11ha)	fruit	150	continue												

Table C.2.2 Crop Diversification Plan

ARCs	Conventional ha	Additional Mung bean ha	Diversified Crops ha	Diversified Crops								
1. Lapogan		100	46	Banana(20)	Calamansi(6)	Avocado(5)	Mango(5)	Santol(5)	Guyabano(5)			
2. Quiling	tobacco 2	50	12	String bean(3)	Egg plant(3)	Water melon(3)	Peanut(3)					
4. San Manuel	Community plant nursery		100	Banana(40)	Mango(5)	Avocado(5)	Santol(5)	Calamansi(5	Gmelina(30)	pineapple(10)		
5. San Miguel(Ramon)		100	16	Peanut(4)	Egg plant(4)	Water melon(4)	String bean(2)	Bitter gourd(2)				
6. Amalungan-Rizal		100	0									
7. Isabela Settlement												
7-1 La Suerte Cluster	Community Plant Nursery		182	Gmelina(80)	Mahogany(10)	Banana(50)	Pineapple(20)	coconut(5)	Calamansi(5)	Avocado(5)	Mango (5)	cassava(2)
7-2 Depasive Cluster	Community Plant Nursery		99	Gmelina(50)	Banana(20)	Guyabano(10)	Pineapple(10)	Avocado(5)	Mahogany(4)			
7-3 Cenea Cluster	Community Plant Nursery		158	Gmelina(80)	Mahogany(8)	Banana(30)	Pineapple(15)	Avocado(5)	Calamansi(5)	Pomelo(5)	Guyabano(10)	
8. Minagbag	Community plant nursery		88	Gmelina(50)	Banana(25)	Mango(5)	Calamansi(3)	Sweet potato(5)				
9. Cabaruan	(Private nursery existing		64	Mango(10)	Calamansi(10)	Guyabano(5)	Banana(10)	Avocado(5)	Pomelo(3)	Santol(2)	Gmelina(14	Bixa(5)
10. Capirpiriwan	Community plant nursery		36	Gmelina(10)	Mahogany(2)	Banana(10)	Mango(3)	Calamansi(3	Guyabano(3)	Cut flowers(5)		
11. Fermeldy	tobacco 94	47	61	Banana(21)	Peanut(20)	Water melon(10	Egg plant(5)	String bean(5)				
12. Luzon		140	7	Peanut(5)	Egg plant(1)	String bean(1)						
13. Progreso	Community Plant Nursery		28	Gmelina(10)	Banana(13)	Mahogany(5)						
14. Yeban Norte/Sur	Community plant nursery		186	Gmelina(50)	Mahogany(10)	Black pepper(50	Banana(46)	Mango(10)	Avocado(10)	Calamansi(10)		
15. Canan		226	0									
16. Andarayan		105	3	Egg plant(2)	Bitter gourd(1)							
17. Bantug Petinus		150	0									
18. Shimanu & Dalena			120	Gmelina(40)	Banana(30)	Avocado(10)	Peanut(10)	Egg plant(5)	Water melon(5	Bitter gourd(5	Squash(5)	Mango(10)
19. Dammao		56	0									
20. San Miguel(Burgos)		87	68	Calamansi(20)	Banana(20)	Mango(10)	Egg plant(5)	Peanut(5)	Water melon(2	String bean(2)	Squash(2)	Bitter gourd(2)
21. San Ramon		45	20	Calamansi(10)	Egg plant(5)	Water melon(3)	Peanut(2)					
22. Viola Estate Cluster	tobacco 260	260	197	Banana(40)	Black pepper(40	Calamansi(30)	Mango(20)	Santol(10)	Guyabano(10)	Peanut(20)	String bean(10)	
	Community plant nursery			water melon(10	Bitter gourd(2)	Chili(3)	Squash(2)					

Table C.2.3 Planned Production

No.	ARCs	Farm land	Wet Season						Dry Season						Additiona mung b.	Diversified Crops		Other
			Rice			Corn			Rice			Corn						
			Area	Yield	Product.	Area	Yield	Product.	Area	Yield	Product.	Area	Yield	Product.	Area	Crops	Area	Area
			ha	cav/ha	cavans	ha	cav/ha	cavans	ha	cav/ha	cavans	ha	cav/ha	cavans	ha		ha	ha
1	Lapogan	894	325	120	39,000	110	80	8,800	325	120	39,000	110	80	8,800	100	fruit	46	339
2	Quiling	229	151	120	18,120	57	80	4,560	151	120	18,120	57	80	4,560	50	vegetables	12	6
4	San Manuel	749	300	88	26,400	300	80	24,000	230	100	23,000	300	80	24,000	0	fruit	100	49
5	San Miguel(Ramon)	436	327	120	39,240	60	80	4,800	327	120	39,240	60	80	4,800	100	vegetables	16	29
6	Amulungan-Rizal	310	305	120	36,600	0	0	0	305	120	36,600	0	0	0	100		0	5
7	Isabela Settlement																	
7-1	La Suerte Cluster	1,103	193	80	15,440	700	70	49,000	179	80	14,320	700	70	49,000	0	fruit & trees	182	128
7-2	Dipasivi Cluster	1,172	92	80	7,360	390	70	27,300	72	80	5,760	390	70	27,300	0	fruit & trees	99	591
7-3	Cenea Cluster	1,568	211	80	16,880	620	70	43,400	123	80	9,840	620	70	43,400	0	fruit & trees	158	579
8	Minagbag	909	512	120	61,440	312	80	24,960	435	120	52,200	312	80	24,960	145	fruit & trees	77	1,630
9	Cabaruan	513	183	95	17,385	256	80	20,480	153	100	15,300	256	80	20,480	0	fruit & trees	64	10
10	Capirpiriwan	370	102	100	10,200	143	80	11,440	102	100	10,200	143	80	11,440	0	firuit, flower	36	89
11	Fermeldy	311	0	0	0	245	80	19,600	0	0	0	245	80	19,600	47	vege. fruit	61	5
12	Luzon	462	415	120	49,800	21	80	1,680	415	120	49,800	21	80	1,680	140	vegetables	7	19
13	Progreso	284	87	60	5,220	109	70	7,630	87	60	5,220	109	70	7,630	0	fruit & trees	28	60
14	Yeban Norte/Sur	1,103	116	88	10,208	750	80	60,000	48	100	4,800	750	80	60,000	0	fruit & trees	186	51
15	Canan	696	678	120	81,360	0	0	0	678	120	81,360	0	0	0	226		0	18
16	Andarayan	353	315	120	37,800	12	80	960	315	120	37,800	12	80	960	105	vegetables	3	23
17	Bantug Petines	450	444	120	53,280	0	0	0	444	120	53,280	0	0	0	150		0	6
18	Dalena & Shimanu	1,035	411	100	41,100	480	80	38,400	287	100	28,700	480	80	38,400	0	tree, fr, veg	120	24
19	Dammao	171	167	100	16,700	0	0	0	167	100	16,700	0	0	0	56		0	4
20	San Miguel(Burgos)	596	260	80	20,800	260	80	20,800	56	100	5,600	260	80	20,800	87	fruit, vege.	68	8
21	San Ramon	225	135	120	16,200	67	80	5,360	135	120	16,200	67	80	5,360	45	fruit. vege.	20	3
22	Viola Estate Cluster	993	0	0	0	785	80	62,800	0	0	0	785	80	62,800	260	fruit, vege.	197	11
		14,932	5,729		620,533	5,677		435,970	5,034		563,040	5,677		435,970	1,611		1,480	3,687

Prodcut. Total	1,183,573			871,940

Table C.2.4 Development Plan and Extension Services

No.	ARCs	Group	Development and extension services	Year
1	Lapogan	B	Hybrid rice & Mung bean	4-7
			Crop diversification program (fruit trees)	5-6
2	Quiling	A	RTV disease	2
			Hybrid rice & Mung bean	2-5
			Crop diversification program (vegetables)	2-3
4	San Manuel	D	Community plant nursery	2-6
			Crop diversification program (fruit trees)	5-7
			IPM & INM	2
			Sloping agriculture	5
5	San Miguel	A	RTV disease	2
			Hybrid rice & Mung bean	2-5
			Crop diversification program (vegetables)	1-2
6	Amulungan-Rizal	A	RTV disease	2
			Hybrid rice & Mung bean	2-5
7	Isabela Settlement			
7-1	La Suerte Cluster	E	Community plant nursery	2-6
			Crop diversification (trees)	5-7
			IPM & INM on corn	2
			Sloping agriculture	5
			Livestock development	2-5
7-2	DIPASIVI Culster	E	Community plant nursery	2-6
			Crop diversification (trees)	5-7
			IPM & INM on corn	2
			Sloping agriculture	5
			Livestock development	2-5
7-3	CENEA Cluster	E	Community plant nursery	2-6
			Crop diversification (trees)	5-7
			IPM & INM on corn	2
			Sloping agriculture	5
			Livestock development	2-5
8	Minagbag	C	RTV disease	2
			Hybrid rice & Mung bean	2-5
			IPM & INM	2
			Community plant nursery	2-6
			Crop diversification (trees)	5-6
9	Cabaruan	C	Sloping agriculture	2
			Crop diversification program (perennials)	2-3

10	Capirpiriwan	C	Community plant nursery	2-6
			Crop diversification	5-7
			Sloping agriculture	5
11	Fermeldy	B	IPM & INM	2
			Crop diversification program (vege. & fruit)	2-3
12	Luzon	A	RTV disease	2
			Hybrid rice & Mung bean	2-6
			Crop diversification program (vegetables)	2-3
13	Progreso	E	Community plant nursery	2-6
			Crop diversification (trees)	5-7
			Sloping agriculture	5
			Livestock development	2-5
14	Yeban Norte/ Benito Soliven	D	Community plant nursery	2-6
			Crop diversification	5-7
			Sloping agriculture	5
			IPM & INM	2
15	Canan	A	RTV disease	2
			Hybrid rice & Mung bean	2-5
16	Andarayan	B	RTV disease	2
			Hybrid rice & Mung bean	2-5
			Crop diversification	2-3
			Food processing	4-5
17	Bantug Petines	A	RTV disease	2
			Hybrid rice & Mung bean	2-5
18	Dalena & Shimanu	D	Crop diversification program (vege. & perenn.)	2-3
			IPM & INM	2
19	Dammao	B	RTV disease	2
			Hybrid rice & Mung bean	2-5
20	San Miguel Burgos	A	RTV disease	2
			Hybrid rice & Mung bean	2-5
			Crop diversification program (vege. & fruit)	2-3
			IPM & INM	2
21	San Ramon	A	RTV disease	2
			Hybrid rice & Mung bean	2-5
			Crop diversification program (vege. & fruit)	2-3
22	Viola Estate Cluster	B	Community plant nursery	2-6
			Crop diversification program (vege. & fruit)	5-7
			Mung bean introduction into crop rotation	2
			IPM & INM	2

C.3 Livelihood Program

Table C.3.1 Livelihood Projects in 1998 and 1999

ARCs	organizations	type of services	Activities
Lapogan	DOLE	loan	goat raising
	LGU-MAO	skills enhancement	ginger production
	LGU-MAO	skills enhancement	goat raising
	DTI	skills enhancement	talahib basket making
San Miguel	TESDA/DECS	skills enhancement	dress making
	DA-CVIARC	skills enhancement	goat production
La Suerte Cluster	BIDANI	loan	guidance
DEPASIVI Cluster	BIDANI	loan	guidance
Minagbag	PHILPHOS	skills enhancement	swine production
Cabaruan	DSWD	loan	food processing livelihood project
Fermeldy	DTI/Plan Intern'l	skills enhancement	Christmas balls and box making
Canan	DSWD	skills enhancement	cosmetology
Andarayan	DA/LGU-MAO	skills enhancement	establishment of demo farm on key commercial crops
	DA-CVIARC	skills enhancement	Ubi production
Bantug Petinus	DA-CVIARC	skills enhancement	upgrading of native chicken
	BFAR-CVROSFR	development & tech.	fish production
	DA-CVIARC	skills enhancement	legume seed production
Dalena & Shimanu	DA-CVIARC	skills enhancement	establishment of demo farm on key commercial crops
San Miguel Burgos	TESDA/DECS	skills enhancement	dress making
	DA-CVIARC	skills enhancement	goat production

Source: DAR, Accomplishment report on Program Beneficiaries Dvelopment, 3rd quarter, 1999

Table C.3.2 Livelihood Projects Plan

No.	ARCs	Group	Plans	year
			Livestock & poultry development	1-4
			Backyard gardening	1-3
1	Lapogan	B	Fish raising	2-4
			Livestock & poultry development	1-4
			Backyard gardening	1-3
			Fish raising	2-4
2	Quiling	A	Mushroom culture	1
			Livestock & poultry development	1-4
			Backyard gardening	1-3
			Fish raising	2-4
4	San Manuel	D	Mushroom culture	1
			Livestock & poultry development	1-4
			Backyard gardening	1-3
5	San Miguel	A	Fish raising	2-4
			Livestock & poultry development	1-4
			Backyard gardening	1-3
6	Amulungan-Rizal	A	Fish raising	2-4
7	Isabela Settlement			
			Backyard gardening	1-3
			Fish raising	2-4
			Mushroom culture	1
7-1	La Suerte Cluster	E	Simple food processing	3-4
			Backyard gardening	1-3
			Fish raising	2-4
			Mushroom culture	1
7-2	DIPASIVI Culster	E	Simple food processing	3-4
			Backyard gardening	1-3
			Fish raising	2-4
			Mushroom culture	1
7-3	CENEA Cluster	E	Simple food processing	3-4
			Livestock & poultry development	1-4
			Backyard gardening	1-3
			Fish raising	2-4
8	Minagbag	C	Mushroom culture	1
			Livestock & poultry development	1-4
			Backyard gardening	1-3
			Fish raising	2-4
9	Cabaruan	C	Mushroom culture	1
			Livestock & poultry development	1-4
			Backyard gardening	1-3
			Fish raising	2-4

10	Capirpiriwan	C	Mushroom culture	1
			Livestock & poultry development	1-4
			Backyard gardening	1-3
11	Fermeldy	B	Fish raising	2-4
			Livestock & poultry development	1-4
			Backyard gardening	1-3
12	Luzon	A	Fish raising	2-4
			Backyard gardening	1-3
			Fish raising	2-4
			Mushroom culture	1
13	Progreso	E	Simple food processing	3-4
			Livestock & poultry development	1-4
			Backyard gardening	1-3
	Yeban Norte/Benito		Fish raising	2-4
14	Soliven	D	Mushroom culture	1
			Livestock & poultry development	1-4
			Backyard gardening	1-3
15	Canan	A	Fish raising	2-4
			Livestock & poultry development	1-4
			Backyard gardening	1-3
16	Andarayan	B	Fish raising	2-4
			Livestock & poultry development	1-4
			Backyard gardening	1-3
17	Bantug Petines	A	Fish raising	2-4
			Livestock & poultry development	1-4
			Backyard gardening	1-3
			Fish raising	2-4
18	Dalena & Shimanu	D	Mushroom culture	1
			Livestock & poultry development	1-4
			Backyard gardening	1-3
19	Dammao	B	Fish raising	2-4
			Livestock & poultry development	1-4
			Backyard gardening	1-3
20	San Miguel Burgos	A	Fish raising	2-4
			Livestock & poultry development	1-4
			Backyard gardening	1-3
21	San Ramon	A	Fish raising	2-4
			Livestock & poultry development	1-4
			Backyard gardening	1-3
22	Viola Estate Cluster	B	Fish raising	2-4

Table C.3.2 Livelihood Projects Plan

No.	ARCs	Group	Plans	Activities
1	Lapogan	B	Livestock & poultry development	dispersal
			Backyard gardening	training
			Fish raising	SFR,dispersal
2	Quiling	A	Livestock & poultry development	dispersal
			Backyard gardening	training
			Fish raising	SFR,dispersal
			Mushroom culture	training
4	San Manuel	D	Livestock & poultry development	dispersal
			Backyard gardening	training
			Fish raising	SFR,dispersal
			Mushroom culture	training
5	San Miguel	A	Livestock & poultry development	dispersal
			Backyard gardening	training
			Fish raising	SFR,dispersal
6	Amulungan-Rizal	A	Livestock & poultry development	dispersal
			Backyard gardening	training
			Fish raising	SFR,dispersal
7	Isabela Settlement			
7-1	La Suerte Cluster	E	Backyard gardening	training
			Fish raising	SFR,dispersal
			Mushroom culture	training
			Simple food processing	training
7-2	DIPASIVI Culster	E	Backyard gardening	training
			Fish raising	SFR,dispersal
			Mushroom culture	training
			Simple food processing	training
7-3	CENEA Cluster	E	Backyard gardening	training
			Fish raising	SFR,dispersal
			Mushroom culture	training
8	Minagbag	C	Livestock & poultry development	dispersal
			Backyard gardening	training
			Fish raising	SFR,dispersal
			Mushroom culture	training
9	Cabaruan	C	Livestock & poultry development	dispersal
			Backyard gardening	training
			Fish raising	SFR,dispersal
			Mushroom culture	training
10	Capirpiriwan	C	Livestock & poultry development	dispersal
			Backyard gardening	training
			Fish raising	SFR,dispersal
			Mushroom culture	training

11	Fermeldy	B	Livestock & poultry development	dispersal
			Backyard gardening	training
			Fish raising	SFR,dispersal
12	Luzon	A	Livestock & poultry development	dispersal
			Backyard gardening	training
			Fish raising	SFR,dispersal
13	Progreso	E	Backyard gardening	training
			Fish raising	SFR,dispersal
			Mushroom culture	training
			Simple food processing	training
14	Yeban Norte/ Benito Soliven	D	Livestock & poultry development	dispersal
			Backyard gardening	training
			Fish raising	SFR,dispersal
			Mushroom culture	training
15	Canan	A	Livestock & poultry development	dispersal
			Backyard gardening	training
			Fish raising	SFR,dispersal
16	Andarayan	B	Livestock & poultry development	dispersal
			Backyard gardening	training
			Fish raising	SFR,dispersal
17	Bantug Petines	A	Livestock & poultry development	dispersal
			Backyard gardening	training
			Fish raising	SFR,dispersal
18	Dalena & Shimanu	D	Livestock & poultry development	dispersal
			Backyard gardening	training
			Fish raising	SFR,dispersal
			Mushroom culture	training
19	Dammao	B	Livestock & poultry development	dispersal
			Backyard gardening	training
			Fish raising	SFR,dispersal
20	San Miguel Burgos	A	Livestock & poultry development	dispersal
			Backyard gardening	training
			Fish raising	SFR,dispersal
21	San Ramon	A	Livestock & poultry development	dispersal
			Backyard gardening	training
			Fish raising	SFR,dispersal
22	Viola Estate Cluster	B	Livestock & poultry development	dispersal
			Backyard gardening	training
			Fish raising	SFR,dispersal

Appendix D Farm Economy

Appendix D.1 Nutrition Intake in Isabera Province

According to Food Intake Survey, an inhabitant in Isabera Province consumes at 126.6 kg of rice and 110.9 kg of corn annually, which is 3 % and 6 % above the national average. It is noted that high-level consumption of meat together with lesser consumption of roots and tubers bring about high cholesterol related diseases, such as heart attach, night eyes and beriberi.

Table D-1 Annual per Capita Consumption of Agricultural Food Commodities in ISABERA (1995)

	Annual (kg) (日)	National Level (kg) (月)	Comparison (日)/(月) (%)
Cereals	126.64	122.69	103%
Rice	110.94	104.27	106%
Corn	9.97	12.55	79%
Wheat	5.73	5.88	97%
Bread and Cakes	10.01	13.51	74%
Roots and Tubers	5.86	9.67	61%
Camote	3.03	5.94	51%
Cassaba	0.56	3.73	15%
Others	2.28	0	-%
Other Substitutes	22.84	20	114%
Banana	22.84	20	114%
Meat	22.9	19.6	117%
Pork	11.06	9.6	115%
Beef	2.2	1.93	114%
Carabeef	0.86	0.33	261%
Goat	0.01	0.22	5%
Chicken	8.31	7.37	113%
Duck	0.46	0.16	288%
Egg	6.07	4.78	127%
Chicken	5.82	4.33	134%
Duck egg	0.25	0.45	56%

Source: **Department of Health**

Appendix D.2 Philippine Crop Insurance Corporation (PCIC)

D.2.1 General Features of PCIC

The Philippine Crop Insurance Corporation is a government corporation created on June 11, 1978 by Presidential Decree 1467 as the implementing agency of the crop insurance program. It started operations on May 7, 1981 covering rice and corn. When RA 8175 was signed into law on December 29, 1995, it increased the capitalization of PCIC to P2 billion. This law mandated also the corporation to expand its coverage to other non-crop agricultural assets.

PCIC offers various program services intended to benefit small farmers by I) protecting their production investments against losses due to agricultural risks and ii) facilitating credit availments for agricultural production.

The Crop Insurance Program is a form of protection for farmers against losses due to natural disasters such as typhoon, flood and earthquake as well as plant diseases and pest infestations. Through nominal premium payments, farmers are assured that despite crop losses due to such calamities, they will have money for subsequent production expenses or to repay their production loans.

Eligible to avail of the rice and corn insurance are borrowing farmers and self-financed farmers whose production activities are supervised by duly authorized production technicians. Regular crop insurance is applied to palay and corn, while high value commercial crop insurance covers the following crops and fruits.

Sweet Potato, Asparagus, Cassava, Abaca, Rubber, Banana, Soybeans, Garlic Cotton, Tobacco Pineapple, Yemane, Onion, Peanut, Sugarcane, Tomato, Mango, Rice Seed Growers

Livestock Insurance Program took effect March 1, 1988 and covers losses due to diseases and accidents. As member of the Philippine Livestock Management Corporation (PLMC, former Pool of Livestock Insurers), PCIC offers three types of livestock insurance, I) backyard cover for cattle, carabao, swine and goat, ii) commercial cover for poultry.

In addition to its field personnel, PCIC underwriting/solicitation networks include: lending institutions such as government banks like the Land Bank of the Philippines, rural banks

and cooperative rural banks; DA-Production Technicians, farmer organizations, irrigators associations, samahang nayons, and National Irrigation Administration fieldmen and other agencies accredited to participate in underwriting/soliciting for crop insurance.

D.2.2 Crop Insurance in the Study Area

According to Philippine Crop Insurance Company (PCIC), crop insurance covered in Isabera Province in 1998 was 175 million pesos for palay, and 45 million pesos for corn, respectively. Out of which, 19 million pesos, and 7 million pesos are paid as indemnity. It was difficult to know the coverage area, but according to the estimation of the Study Team, it reaches more or less 3,000ha for rice and 1,000 ha for corn, taking into consideration the net income of per hectare of rice and corn, 56,000 pesos, and 42,000 pesos respectively.

The premium of insurance as follows:

Crop Insurance Premium

	Rice	Corn
Multi-risk Insurance	4% of loaned amount from LBP	9.48% of loaned amount from LBP
Natural Calamity Insurance	3% of loaned amount from LBP	8.14% of loaned amount from LBP

Source) PCIC Region II Office

There are two digible applicants, one is cooperative and the other is self-finance farmer. Also, there are two types of module, one covers all kind of damage, and the other is limited to natural disasters. The former is called "multi-risk insurance", and the later is called "natural calamity insurance".

There are seven adjusters of insurance in Isabera province. To supplement the shortage of adjuster, the PCIC is asking line agencies such as DA, LBP and NIA for inspection and evaluation of damages. However, the number of adjusters is still running short to meet with timely evaluation of damages. According the PCIC, an average period of duration from the notice of claims to actual investigation of the damage is 20days lately, which has been shorten by 9 days from October 1998.

The adjustment is carried out based on the formula owned by PCIC. Actually, one of the problems of this system is lack of campaign. Many of the farmers still believe that PCIC

will compensate an equal amount that farmers could get through the sell of an expected product to private trader (refer to Tables D-2-1 and D-2-2).

In national level, the discussion on minimize a running cost of PCIC is on going. Some insists to reduce the number of field staffs of PCIC, because they are not so busy throughout a year if there is no calamity. The target of operation cost is a approx. 75million peso, which indicates more or less 50% of budgetary reduction from the present conditions. The PCIC is considering a wider coverage of insurance toward perennial crops and a variety of high valued crops.

Table D-2-1 Rice Indemnity Schedule (Per Thousand Cover) : Upper Table

Table D-2-2 Corn Indemnity Schedule (Per Thousand Cover) : Lower Table

Rice Indemnity Schedule (Per Thousand Cover)

	Indemnity Factor Per Growth Stage				
Yeild Loss (%)	Early Vegetative	Late Vagetative	Early Reproductive	Late Reproductive	Maturity
10-15	117	119	121	123	125
15-20	159	163	168	172	175
20-25	199	205	213	220	225
25-30	236	246	257	267	275
30-35	270	284	300	314	325
35-40	302	320	341	360	375
40-45	331	355	381	406	425
45-50	358	387	421	451	475
50-55	382	418	459	496	525
55-60	404	447	495	540	575
60-65	423	473	531	584	625
65-70	439	498	565	627	675
70-75	453	521	598	669	725
75-80	464	542	630	711	775
80-85	472	561	661	753	825
85-90	478	578	690	794	875
90-100	482	612	759	894	1000
Dist.Factor=AC/DI	48.2%	61.2%	75.9%	89.4%	100.0%

Corn Indemnity Schedule (Per Thousand Cover)

	Indemnity Factor Per Growth Stage				
Yeild Loss (%)	Early Vegetative (1-37 DA-LS-LW)	Active Vagetative(38-60 DA-TASS)	Initial Filling(61-80 DA Silking)	Active Grain Filling (81-110 DAP) EM-LM	
10-15	117	120	122	125	Pre-Emer=0-4
15-20	159	165	170	174	LS=7-10
20-25	199	209	217	224	EW=11-20
25-30	236	251	263	273	MW=21-34
30-35	271	291	308	323	LW=35-42
35-40	303	330	352	372	TASS=43-63
40-45	333	367	396	421	Silk=64-76
45-50	360	403	438	470	EM=77-94
50-55	384	437	480	519	LM=95-110
55-60	406	470	521	568	
60-65	425	500	562	617	
65-70	442	530	601	666	
70-75	456	557	640	714	
75-80	463	583	678	763	
80-85	469	608	715	811	
85-90	476	631	751	860	
90-100	489	681	838	1000	
Dist.Factor=AC/DI	48.9%	68.1%	83.8%	100.0%	

Indemnity Formula
I=AC/1,000 x IF x AF

I=Final Indemnity
AC=Amount of Cover
IF=Indemnity Factor Per Schedule
AF=Adjustment Factor

Appendic D.3 Monthly Price of Farm Input and Output

Mono cropping pattern in the Study area weaken the bargaining power of the farmers and simultaneously, increase the market power of private traders. The year 1998 is called 'calamity year'. Severe drought called El Nino affect all over the Philippines from January to August, furthermore, several typhoons demolish wet season heaviest from September to October.

In the comparison of retail price with national level, the price of fertilizers in Region II shows cheaper by 10 -15%. It is reflection of big demand. Generally, retail price of fertilizer is increase from May to July, and again from November to December.

The price of urea is usually affected by peso value and international oil price, because most of urea is imported from Indonesia and Middle East countries, while the price of 14-14-14 reflects more on supply-demand balance. The retail price of urea has been reducing since June 1998. It is most probably due to the Asian currency crisis, which has undervalued Indonesian Rupiah.

To increase production, most farmers apply fertilizers. In the Study area, urea, and complete fertilizer (mostly 14-14-14) are commonly applied to both rice and corn. The farmers apply these fertilizers before and after transplanting, say, from May to June for wet season, and from November to December for dry season, respectively.

The figure illustrates the monthly price trend of major farm input and output in Isabera Province. The price of 14-14-14 increases corresponding to the demand, so that the farmers are obliged to buy them at peak price.

Selling of produce provides another tip. The field survey observed that the farmers sell palay from September to October at 7 pesos/kg and corn from August to September at 6 pesos/kg (dry season harvest). The figure indicates that the farm gate price of palay and corn meets at peak in August. The differential of farm gate price between peak and bottom is more or less 2 pesos/kg.

These facts indicate that the farmers shoulder the both financial burdens. They sell produce at price-bottom season and procure inputs at price-peak season (refer to Table D-3-1 and Figure D-3-1).

Table D-3-1 Monthly Price Trend of Farm Input (fertilizer) and Output

	Palay (pesos/kg)	Yellow Corn (pesos/kg)	Urea (pesos/bag)	14-14-14(pesos/bag)
January	7.84	6.48	365.34	377.82
February	8.13	6.31	373.05	379.49
March	8.45	5.96	375.1	379.52
April	8.40	5.85	370.99	374.04
May	8.70	6.26	371.6	386.2
June	8.96	6.8	371.4	388.8
July	9.23	6.8	378.75	397.16
August	9.44	7.6	368.36	394.85
September	9.08	5.83	364.45	394.43
October	7.83	5.7	352.33	403.85
Nobember	7.94	5.64	355.07	404.96
December	8.19	5.64	341.25	405.9

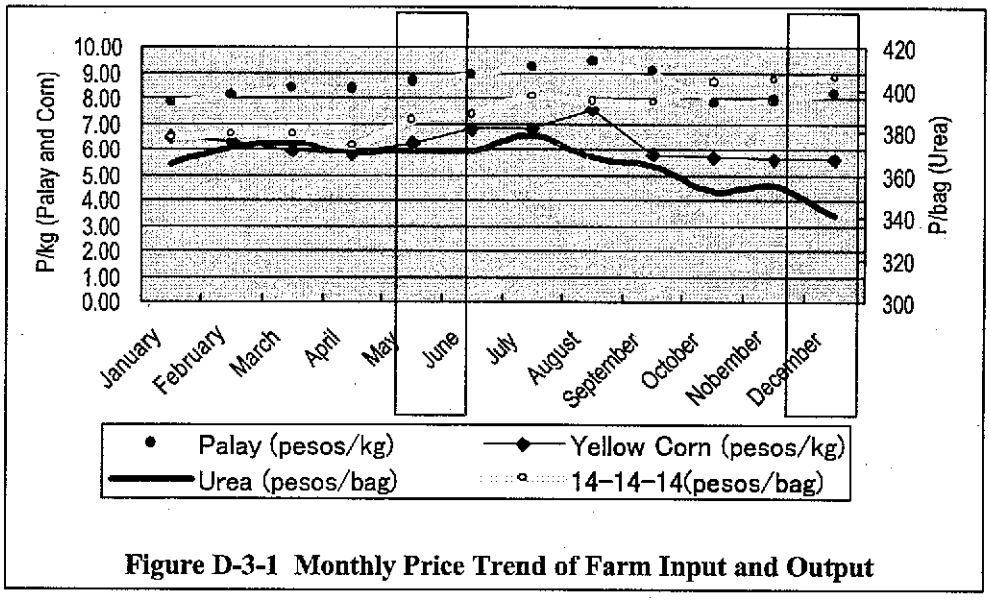

Figure D-3-1 Monthly Price Trend of Farm Input and Output

Source: JICA Study Team

Appendix D.4 Distribution of Farm Produce

(1) Market Share of Rice and Corn for the Study Area

Out of 498 thousand tons of annual production of palay in the Province, 42 thousand tons or 8.5% are produced in the Study Area. Appling the conversion rate at 40% weight-loss by drying, milling, and post harvest losses, 498 and 42 thousand tons of palay are equivalent with 299 and 25 thousand tons of rice. Then, deducting with 220 thousand tons of self-consumption (per capita consumption of rice in Isabera Province is 111 kg), it is estimated that 78 thousand tons of rice are forwarded to outside the Province. The Study Area contributes approx. 25% to the total forwarding volume.

Although the Study Area produces only 8.5% of total produce of the Isabera Province, marketable volume accounts for 25% of the total. Out of 25,344 tons of rice equivalent palay, 5,829 tons or 23% are consumed by the residents an the remaining 19,505 tons go to market (refer to Table D-4-1).

In the same way, 510 thousand tons of dried corn is produced in the provincial level, out of which the produce from the Study Area constitutes 42 thousand tons or 8.2 %. Taking into consideration the home consumptions at 526 tons, some 41 thousand tons or 8.5% of the total is marketed to outside Isabera Province (refer to Table D-4-2).

(2) Price Structure Model on the Process of Marketing

Based on the field interviews and succeeding analysis, the price structure of rice and corn is defined. It is noted that the price structure of rice follows more complex flow, because many of players intervene the market flow. Normally, a market mechanism explains that the commissions/margins are much higher in urban or Metro Manila than in province (refer to Figures D-4-1 and D-4-2).

Table D-4 -1 Distribution Volume of Palay and Rice

		Isabera Province	Study Area	% of the Study Area
	Production of Palay (ton)*	497,532	42,240	8.49%
	Weight Conversion Factor to Rice**	0.60	0.60	
①	Rice Equivalent (ton)	298,519	25,344	
	Population	1,985,000	52,600	2.65%
	Home Consumption per Capita (kg/yr)***	111	111	
②	Total Consumption (ton)	220,335	5,839	
③=①-②	Marketable Volume	78,184	19,505	24.95%

* Refer to TableC.1.1 in the previous pages.
** Weight loss by Drying, Milling, and post harvest losses are allowed for.
*** Refer to Appendix D.1

Table D-4 -2 Distribution Volume of Corn

		Isabera Province	Study Area	% of the Study Area
	Production of Corn (ton)*	728,565	59,905	8.22%
	Weight Conversion Factor to Dried Corn*	0.70	0.70	
①	Dried Corn Equivalent (ton)	509,996	41,934	
	Population	1,985,000	52,600	2.65%
	Home Consumption per Capita (kg/yr)***	10	10	
②	Total Consumption (ton)	19,850	526	
③=①-②	Marketable Volume	490,146	41,408	8.45%

* Refer to TableC.1.1 in the previous pages.
** Weight loss by Drying, Threshing, and post harvest losses are allowed for.
*** Refer to Appendix D.1

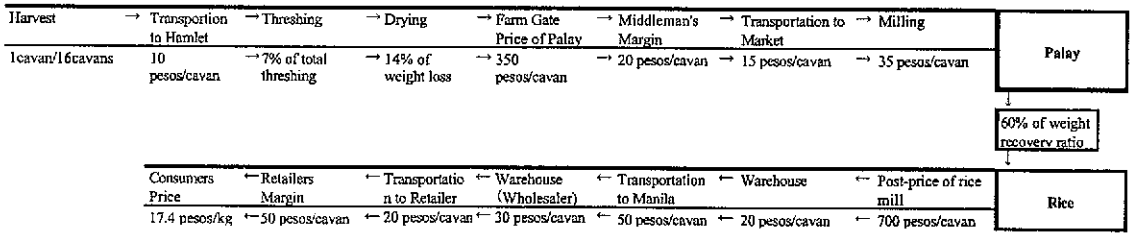

Figure D-4-1 Price Structure Model of Palay and Rice (Financial Price)

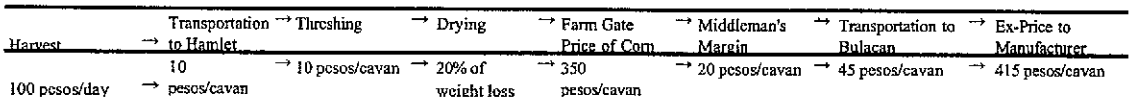

Figure D-4-2 Price Structure Model of Corn (Financial Price)

Appendix D.5 Situation of ARC Cooperatives with LBP Loan

(1) Cooperative Loans in 1990 and 1993

In 1990 and 1993, LBP Region II released P365 million to 313 small farmer coops. Of this amount, P226 million was released to 165 coops in Isabela province. The loan to Isabela province represents that about 62% of the total loan releases to cooperatives. Cooperatives assisted in Isabela represent 53% of total coops in Region II. Isabela cooperatives repayment is about 69% against other provinces of 67%.

(2) Cooperative Loans at Present

As of end of October 1999, there are an accumulative P94 million loans to a total of 32 ARC cooperatives in Isabera Province. 13 cooperatives in the Study Area are included in the inventory. Out of P94 million loans, P60 million or 64% are repaid so far, and the remnant is being paid or overdue. It is considered that of P34 million of the remaining, approximately 70 to 80% is non-collectable loan which is subject to embed to bad debt account (refer to Table. D-5-1)

(3) Cooperative Loans in the Study Area

Out of 31 MPCIs in the Study Area, 17 or 55 % have payable loans from financial institutions. The accumulative loans by a total of 17 MPCIs have reached to about 50 million pesos as of 3rd quarter of 1999, out of which 32 million pesos or 65 % are from LBP. Only few cooperatives are repaying loans constantly. Out of 13 MPCIs' loans from LBP, six (6) are already overdue. Similarly, out of 17 MPCIs' payable loans, nine (9) are classified as past due. Farmers tend to excuse their incompleteness for the reason of force majeure like typhoon and El Nino. On the other hand, they are repaying a loan to private lenders. The credit from private lender is still dominant. It is rendered to farmers with five (5) to seven (7) % of interest per month (refer to Table D-5-2).

Table D-5-1 The situation of Loan Repayment as of October 31, 1999

	NAME OF ARC COOP	ADDRESS	AMOUNT OF LOAN GRANTED	O/S BALANCE	STATUS OF ACCOUNT
1.	BAGONG SIKAT	Bagong Sikat, San Mateo, Isabela	2,278,000.00	1,007,175.00	CURRENT
2.	ARBEMCO	Quiling, Roxas, Isabela	3,236,000.00	2,005,240.00	PAST DUE
3.	MINAGBAG MPCI	Minagbag, Quezon, Isabela	8,974,796.00	1,742,187.65	PAST DUE
4.	SIEMPRE VIVA SN MPCI	Siempre Viva, Mallig, Isabela	13,628,105.00	2,860,447.00	CURRENT
5.	COLORADO FARMERS	Colorado, San Guillermo, Isabela	770,000.00	749,950.00	PAST DUE
6.	SAN GUILLERMO MPCI	Centro II, San Guillermo, Isabela	2,854,000.00	2,257,156.00	PAST DUE
7.	NEW BUKHAY MPCI	Centro, San Guillermo, Isabela	700,000.00	696,000.00	CURRENT
8.	BANTUG PETINES MPCI	B. Petines, Alicia, Isabela	1,640,000.00	430,289.00	CURRENT
9.	CORDON MPCI	Turod, Cordon, Isabela	2,887,000.00	2,657,815.05	CURRENT
10.	SAN MIGUEL SUPER	San Miguel, Ramon, Isabela	2,044,000.00	1,486,540.84	CURRENT
11.	IRRIGATORS INT'G.	Rizal, Santiago City	5,422,000.00	4,688,017.38	PAST DUE
12.	RIZAL AMULUNGAN	Rizal, Santiago City	8,228,832.00	7,288,925.24	PAST DUE
13.	BALLIGI TI BIAG	Pungpongan, Jones, Isabela	4,439,000.00	3,976,000.00	CURRENT
14.	AROMIN MPC	Aromin, Echague, Isabela	3,027,000.00	2,950,000.00	CURRENT
15.	SAN MIGUEL MPC	San Manuel, Echague, Isabela	3,317,000.00	3,225,000.00	CURRENT
16.	STA. MARIA CDCI	Cabisera 8, San Antonio, Isabela	10,446,152.83	5,366,388.82	CURRENT
17.	SAN FRANCISCO MPCI	San Antonio, Isabela	1,436,600.00	844,892.00	CURRENT
18.	SAN RAFAEL MPCI	Hancienda San Antonio, Ilagan, Isabela	1,179,498.00	736,416.00	PAST DUE
19.	NANGALISAN MPCI	Hancienda San Antonio, Ilagan, Isabela	1,066,000.00	656,166.73	PAST DUE
20.	SABLANG MPCI	Hancienda San Antonio, Ilagan, Isabela	1,165,663.00	836,520.00	PAST DUE
21.	CLARAVAL MPCI	Hancienda San Antonio, Ilagan, Isabela	395,000.00	293,262.30	PAST DUE
22.	CABURUTAN MPCI	Hancienda San Antonio, Ilagan, Isabela	1,447,515.00	1,385,710.00	PAST DUE
23.	AGBANNAWAG MPCI	Capellan, Ilagan, Isabela	1,658,157.70	1,562,952.91	PAST DUE
24.	CAPELLAN IGOROT	Capellan, Ilagan, Isabela	358,581.04	300,041.59	PAST DUE
25.	MASUERTE MPC	Fermeldy, Tumauini, Isabela	269,421.00	248,349.00	CURRENT
26.	LAPOGAN MPCI	Lapogan, Tumauini, Isabela	489,000.00	300,400.00	CURRENT
27.	CABARUAN	Cabaruan, Naguillan, Isabela	1,728,000.00	1,224,446.43	CURRENT
28.	GAPPAL MPCI	Gappal, Cauayan, Isabela	594,000.00	204,709.36	CURRENT
29.	SADIRI IA MPCI	Concepcion, Luna, Isabela	3,000,000.00	3,000,000.00	CURRENT
30.	YEBAN NORTE MPCI	Yeban Norte, Benito Soliven, Isabela	996,000.00	934,497.00	PAST DUE
31.	YEBAN SUR MPCI	Yeban Sur, Benito Soliven, Isabela	867,000.00	837,090.77	PAST DUE
32.	FARCREDECO	Canan, Cabatuan, Isabela	3,863,026.66	3,570,144.22	CURRENT
TOTAL			**94,405,348.23**	**60,322,730.29**	

Source: LBP Regional Office

Note: The cooperatives with shadowed color are locating inside the Study Area.

Table D-5-2 Financial Situation of ARC Cooperatives in the Study Area

No	Name of ARC	Organization Covered	Year Organized	Present CBU	Cash/ Bank Asset	Accounts/Loan Payable (incl. int/pen.)	Status Account/ Loan Payable	Acoount/Loan Receivable
1	Lapogan ARC, Tumauini	Lapogan MPCI	1988	47,500	50,800	542,964	Over due	
2	Quiling ARC, Roxas	Quiling MPCI	1993	32,901	7,822	-	-	22,749
4	San Manuel ARC	San Manuel MPCI	1990	429,075	162,341	2,379,347	Paid but a bit delayed	825,085
5	San Miguel ARC, Ramon	San Miguel Super MPCI	1988	2,500	0	408,000 (excluding int.)	Over due	
6	Rizal-Amulungan, Santiago city	Rizal MPCI	1988	262,575	400,731	14,029,302 (excluding int.)	Over due	4,963,797
7	Isabela Settlement							
7-1	La Suerte Cluster	La Suerte MPCI	1995	29,000	29,000	-	-	-
		San Marcelo MPCI	1998	0	0	-	-	-
7-2	DIPASIVI Cluster	Dipacamo-Palawan Settlers MPCI	1980	50,000	50,000	-	-	-
7-3	CENEA Cluster	Nakar ARB MPCI	1991	59,000	1,312	1,698,000	None	77,989
		San Guillermo MPCI	1989	311,261	10,767	2,570,000	Negotiation for re-structuring	-
8	Minagbag ARC, Quexon	Epiphany Multi-Purpose Coop	1989	7,300,000	399,417 1,300,000	2,863,500	Payment on time	-
		Minagbag MPCI	1989	200,000	0	5,824,000	over due	-
9	Cabaruan ARC, Naguilian	Cabaruan Mannalon MPCI	1991	5,000	0	1,532,354	over due	-
10	Capirpiriwan ARC	Rang-ayan MPCI	1991	20,586	1,300	-	-	-
11	Fermeldy ARC, Tumauini	Fermeldy Auto savings Group	1994	37,000	0	-	-	-
		Masuerte MPCI	1989	4,850	0	527,151 1,300,000	over due	-
12	Luzon ARC	LUZON MPCI	1990	48,000	0	80,000	overdue	60,000
13	Progreso	None						
14	Yeban ARC	Yeban Norte MPCI	1988	129,000	15,000	996,000 (excl. int)	overdue	-
		Yeban Sur MPCI	1989	10,000	10,000	800,000 (excl. int)	overdue	-
15	Canan ARC, Cabatuan	Farmer's Credit and Dev't. Cooperative	1990	215,000	11,500	4,819,507	some loans due; discussions with LBP and others for re-structuring	3,100,000
16	Andaravan ARC	CAS MPCI	1991	672,000	800,000	3,800,000	Payment on time	-
17	Bantug Petines, Alicia	Bantug Petines MPCI	1992	266,924	369,000	2,200,000	Pay in delay	-
18	Dalena/Simanu ARC (San Pablo)	San Pablo Agro-Forestry MPCI	1997	50,550	31,000	-	-	50,000
		Farmer's Credit Cooperative	1996	32,700	32,700	-	-	-
19	Dammao ARC, Gamu	Namnama MPCI	1992	900	1,675	-	-	-
20	San Miguel ARC, Burgos	San Miguel MPCI	1992	18,500	1,600	-	-	36,900
21	San Ramon ARC, Aurora	San Ramon ARB MPCI	1998	77,000	0	-	-	
22	Viola Estate ARC (Reina Mercedes)	Agrarian Reform Beneficiaries Association MPCI	1993	68,800	14,000	621400		83,420

Source: JICA Study Team