

#### 5.4 Agricultural Credit

There are various formal credits available for agriculture production in the Philippines. Main credit channels are the Philippine National Bank (PNB), Development Bank of the Philippines (DBP), the Land Bank of the Philippines (LBP) and Rural Banks. These credits are not meeting necessarily rural farmers' needs because they need long administrative procedure, and require securities, while finances are limited and interest rate is high. However some members of agricultural cooperatives ask their cooperatives the loan for agricultural production.

According to the farmers' household survey, about 70% of the farmers in the Study area use agricultural credit for mainly purchasing farm inputs. About 50% of them apply to the Provincial government the short term loan (interest of 6% per 6 months, maximum ₱5,000 per ha). This loan is financed mainly for vegetable growing farmers based on the project program called KAUNCARAN SA LAGUNA (KSL) specialized only in Laguna Province. About 25% of farmers used credit borrow money from private persons and about 13% from cooperatives. The rest of the farmers operate their farming by their own funds. However, 70% of the farmers interviewed strongly complained shortage of capital for farming.

#### 5.5 Activities of Cooperatives

##### (1) Primary Cooperative

In 1991, Cooperative Development Authority (CDA) was established as the implementing agency of the Cooperative Code to accelerate the cooperative's activity and strengthen their organization. Then the number of registered cooperatives rapidly increased. In Laguna Province there are total of 548 cooperatives as of June 1994, out of which more than 80% have multi-purpose (more than 80 % is agricultural cooperatives). (see Table IV.5.1)

Fifteen (15) or more natural persons can organize a primary cooperative and submit the registration in accordance with the cooperative law and ordinances. The primary cooperative is run on the basis of its own article and is composed mainly of general assembly, board of directors, some committees and manager's office. The members of board of directors are elected by general assembly and are unsalaried. The manager and his staff are salaried.

In related three Municipalities, there are twenty-one (21) cooperatives in Nagcarlan, seven (7) in Liliw and fourteen (14) in Majayjay, respectively. Almost of which are multi-purpose cooperatives newly registered since 1991. The outline of the existing cooperatives in the Study area is as shown in Table IV.5.2.

All of the primary cooperatives in the Study area are multi-purpose cooperative. Except Bukal Multi-purpose Cooperative, all have already been registered by CDA. The Multi-purpose Cooperative of Silangang Napapatid, Bukal, Abo and San Fransisco are consist of the members only from the Barangay located. Masilayan Multi-purpose Cooperative consist of the members from Barangay Balimbing, Malinao, Silangang Lasaan, Kanlurang Lasaan, Bukal, Abo and 8 Barangays out of the Study area. Liliw Multipurpose Cooperative and Kaunlaran Sa Banahaw Multi-purpose Cooperative are organized by the members from Barangay Luquin and Novaliches respectively. The members of Banahaw Multi-cooperative come from all of 40 Barangays of Majayjay and another cooperative of Majayjay is currently dormant.

Their main activities are to supply farm inputs like seeds, fertilizers, agro-chemicals, feeds, etc., to make the loan, education and training for member farmers. The activities of some cooperatives include hog fattening, passenger transportation by jeepney, etc.

Generally primary cooperative borrows money from the Land Bank of the Philippines(LBP), Cooperative Rural Bank Laguna (CRBL), etc., at the rate of 12-14 % interest a year, and make loan them to the member farmers at the rate of 18-24 % interest a year. The margins are income of the cooperative. Usually farm inputs are supplied in kind based on the farm plan and budget prepared by production technician (PT) from DA and the credit for wages to hired labors are paid by cash. The expenses of member farmers to the cooperative are the admission fee and monthly or yearly dues both of which are generally very cheap.

Generally the member scale of primary cooperatives in the Study area very small ranged from 30 to 120. According to the farmers' household survey, approximately half of the farmers join any of these cooperatives, however, as interviewed farmers were relatively advanced the portion of member farmer in whole Study area is estimated lower than this. Most of the cooperatives are subject to face lack of capital, lack of competent management staff and auditors, and inadequate bookkeeping, etc.

## (2) Federation of Cooperatives

There are only seven (7) cooperative federations in Laguna Province and the municipalities concerned in the Study area have no registered cooperative federation yet. However in Nagcarlan, there is the movement to organize a federation of cooperative aimed at marketing activity, named KASAMA KANA consisting of nine (9) primary cooperatives, of which five (5) cooperatives are from the Study area of Nagcarlan.

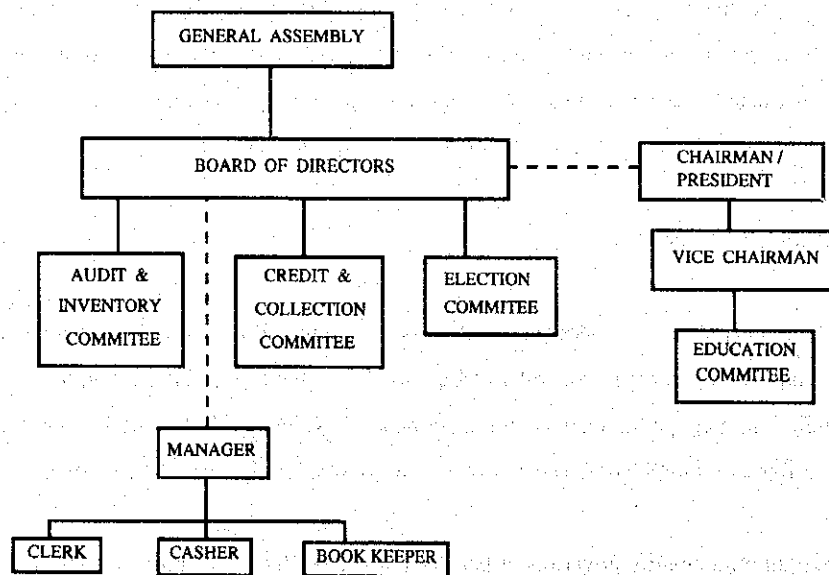
Nagcarlan municipality government has been organized the Cooperative Development Council headed by mayor to assist the operation of existing cooperatives in the municipality. The member of this council is consist of a municipal councilor, a representative of primary cooperatives, marketing vendors' cooperatives, farmers, DA and CDA. The main activities of this council are to promote the organization of multi purpose cooperatives, to identify problems of existing cooperatives, to coordinate with the different existing

cooperatives, to monitor and evaluate cooperative activities, and to recommend possible solutions to the problems of cooperatives.

Apart from that, a cooperative federation named the Crisbasierra Federation of Laguna Cooperatives Inc., including some cooperatives in Nagcarlan and Liliw, has been organized. After a strong earthquake hit Baguio City where most of the vegetable supply to Metro-Manila comes from, the National Government paid attention to Laguna Province as one of alternative vegetable sources to supply Metro-Manila. In response to this movement, this federation was organized and registered in 1992. Presently this federation has twenty-five (25) members of the primary cooperatives from nine (9) Municipalities of Rizal, Nagcarlan, Liliw, Majayjay, Magdalena, Luisiana, Cavinti, Pagsanjan and Lumban. Six (6) primary cooperatives located at the Study area (All of 5 cooperatives in Nagcarlan and Liliw Multi-purpose Cooperative) have joined this federation. Although the main objective of this federation is to promote the vegetable production in mount foofs of Mt. San Cristobal, Mt. Banahaw and Sheramadre mountain range, at present the actual activity of this federation is only limited to the education and preparing saving program for member farmers.

(3) The structure of the existing cooperatives

As mentioned in (1), there are some multi purpose cooperatives in the Study area. Though the structure of cooperative is a little different from case to case, one of the typical organizational structure is as following chart:



**Organization Chart of Typical Existing Cooperative**

Generally the members of 'Board of Directors' is not less than five (5) and not more than ten (10), and members of each committee are about three (3). In small cooperatives management staff are not fixed but

rotated among the members. The Board of Directors are elected for a term of two years by secret ballot by the members at the annual general assembly.

(4) Proposed Marketing Cooperatives

To establish strong marketing cooperatives for efficient production and sales of vegetables in the project area is a matter of great urgency. As mentioned 5, there are 9 multi-purpose cooperatives in the Study area, but none of them are currently in marketing activity. Therefore it is indispensable to establish some new marketing cooperatives or reorganized existing multi-purpose cooperatives. The establishment or reorganization of cooperatives should be promoted on a scale of each territory of proposed trading post.

In the newly established cooperatives or improved existing cooperatives, the organization structures shown in Fig. IV.5.1 is recommended to strengthen its marketing activities which include scheduled crop production planning, price negotiation with middle men, and collection of market information. As shown in the chart, in the new marketing cooperatives most of the activities should be focused to production and marketing of vegetables, and in the reorganized existing cooperatives special section attached to marketing activities will be necessary and the section of education should be strengthen for training of member farmers.

Furthermore it is to be desired that these primary marketing cooperatives establish a federation of marketing cooperative with joining forces near future. As mentioned before the movement to organize a federation of existing primary cooperatives has already been realized in Nagcarlan, and such movement must be accelerated with the Project. The federation of marketing cooperatives covered over the Project area will have a very strong power for marketing of vegetables. However, considering that the strong cooperative federation can be founded on the strong primary cooperatives, it is firstly indispensable to establish the primary marketing cooperatives with actual strong power.

The financial and man power situations of existing cooperatives are so different each other that sufficient assistance, instruction and mediation by the national and rural governments will be essential for establishing the primary cooperatives and their federation.

**Table IV.1.1 Categorized Land Use of the Study Area**

Category	Nagcarlan	Liliw	Majayjay	Total
<b><u>A&amp;D land</u></b>				
Agricultural land	860	550	220	1,630
[Vegetables]*	[215]	[255]	[60]	[530]
Forest / scrub	0	0	0	0
Towns / villages	40	10	5	55
Others**	40	70	25	135
Sub-total	940	630	250	1,820
<b><u>Public Forest land</u></b>				
Agricultural land	240	90	0	330
[Vegetables]*	[75]	[75]	[0]	[150]
Forest / scrub	10	50	0	60
Towns / villages	0	0	0	0
	0	0	0	0
Sub-total	250	140	0	390
<b><u>National Park</u></b>				
Agricultural land	60	40	0	100
[Vegetables]*	[50]	[30]	[0]	[80]
Forest / scrub	530	160	0	690
Towns / villages	0	0	0	0
	0	0	0	0
Sub-total	590	200	0	790
<b><u>Grand Total</u></b>				
Farm land	1,160	680	220	2,060
[Vegetables]*	[340]	[360]	[60]	[760]
Forest / scrub	540	210	0	750
Towns / villages	40	10	5	55
Others	40	70	25	135
Sub-total	1,780	970	250	3,000

Source: JICA Study team

Remarks: \* : The area of vegetable in brackets is shown as the gross area included in agricultural land.

\*\* : "Others" includes river beds, scattered forest /scrub areas, etc.

Table IV.1.2 Crops in the Philippines

## (1) Agricultural area

Crops	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
<b>Cereals</b>										
Palay	3,054.3	3,162.3	3,306.5	3,464.2	3,255.9	3,392.7	3,497.3	3,318.7	3,425.0	3,198.1
Corn	3,132.0	3,227.0	3,510.9	3,595.0	3,682.6	3,745.1	3,689.2	3,819.6	3,589.5	3,322.6
<b>Major Crops</b>										
Coconut	3,201.3	3,222.9	3,270.3	3,284.0	3,251.6	3,221.8	3,110.4	3,112.0	3,093.3	3,093.0
Sugarcane	411.4	409.5	368.5	300.1	269.3	215.7	261.7	235.3	271.5	267.0
Banana	277.7	285.7	289.8	292.7	298.9	294.6	295.5	300.2	311.3	317.4
Pineapple	61.3	59.0	58.0	60.9	63.1	60.5	61.0	59.7	57.6	58.4
Coffee	132.2	138.3	137.2	141.3	143.2	142.5	143.2	143.2	143.1	142.0
Mango	52.0	52.7	53.7	54.4	55.5	55.7	56.4	56.7	56.9	57.0
Tobacco	66.8	70.0	60.2	64.2	68.7	61.4	63.3	64.6	67.9	92.0
Abaca	131.6	124.6	120.4	116.8	114.8	108.3	107.7	106.7	107.4	107.0
Rubber	76.5	77.8	80.7	82.6	83.9	84.6	86.1	86.3	88.0	84.2
Cacao	12.8	13.9	15.5	16.8	17.5	17.7	18.2	18.4	17.1	17.2
Cassava	175.5	201.5	204.6	211.4	209.7	217.1	213.1	213.8	211.0	204.3
Camote	150.6	149.7	150.2	155.2	149.6	144.1	138.3	136.7	136.6	137.1
Peanut	48.1	46.5	50.4	50.9	55.3	51.0	50.4	44.5	39.1	44.6
Mongo	33.6	33.8	35.5	36.0	34.7	36.7	35.7	36.7	34.3	32.7
Onion	6.5	7.8	7.1	6.6	7.0	5.8	6.5	6.4	6.4	5.8
Garlic	5.9	5.5	6.3	6.8	6.3	5.6	6.1	6.3	4.4	4.2
Tomato	15.3	16.3	16.7	18.1	18.0	18.4	19.7	20.0	19.5	18.2
Eggplant	14.2	14.7	14.4	14.5	14.8	15.3	15.4	16.4	14.5	15.5
Cabbage	6.0	5.9	6.2	6.4	6.5	6.4	6.9	6.4	6.9	7.5
Citrus	27.7	27.8	27.8	27.9	28.7	29.3	29.4	29.2	29.1	29.1
<b>Other Crops</b>										
Other fiber crops	97.8	81.9	92.2	89.2	35.0	40.0	37.0	33.4	31.5	33.0
Other root crops	147.0	125.5	106.8	109.7	112.9	113.5	108.0	109.6	107.6	109.2
Tubers	102.7	96.5	101.0	111.0	109.4	122.0	125.7	135.7	134.9	132.8
Spices	49.6	44.9	42.6	42.6	39.6	35.3	35.9	38.6	36.1	36.9
Fruit bearing Vegetables	348.9	326.2	333.1	368.1	306.9	304.1	313.2	328.0	314.5	313.9
Leafy / Stem Vegetables	151.4	147.0	151.7	159.4	147.4	157.1	166.7	171.2	172.8	174.5
Other Legumes	25.2	21.6	25.6	26.0	27.4	28.5	30.2	30.5	31.1	31.2
Other Fruits	274.0	291.3	299.2	304.5	299.6	316.8	331.7	327.7	338.1	339.2
Others	96.9	101.0	89.0	83.1	73.1	80.0	87.2	85.1	86.4	84.9
<b>Agricultural Crops</b>	<b>12,386.8</b>	<b>12,589.1</b>	<b>13,032.1</b>	<b>13,300.4</b>	<b>12,986.9</b>	<b>13,127.6</b>	<b>13,147.1</b>	<b>13,097.6</b>	<b>12,983.4</b>	<b>12,510.5</b>

Source: Bureau of Agricultural Statistics

## (2) Agricultural production

Crops	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992P*
<b>Cereals</b>										
Palay	7,294.9	7,828.9	8,805.6	9,246.8	8,539.9	8,971.0	9,458.8	9,319.4	9,673.3	9,128.9
Corn	3,134.1	3,250.3	3,862.8	4,090.7	4,278.1	4,428.0	4,522.2	4,853.9	4,654.9	4,558.7
<b>Major Crops</b>										
Coconut	12,368.3	11,737.6	12,827.8	14,334.9	13,730.5	12,481.8	11,810.4	11,940.4	11,290.9	11,404.9
Sugarcane	24,014.1	23,944.2	17,542.1	14,831.1	13,797.0	17,275.0	21,424.8	18,666.9	21,824.5	21,511.3
Banana	3,015.7	3,058.3	3,127.1	3,192.6	3,157.4	3,067.3	3,190.3	2,913.3	2,951.1	3,059.2
Pineapple	967.0	1,035.6	1,030.0	1,273.2	1,303.4	1,181.2	1,178.8	1,155.8	1,117.1	1,135.2
Coffee	122.1	124.7	137.3	145.3	140.1	141.9	155.9	134.1	133.4	127.6
Mango	303.3	339.3	355.7	372.9	367.1	361.1	370.1	337.6	307.0	330.1
Tobacco	86.3	98.1	74.3	74.2	82.8	76.4	79.9	81.7	85.2	116.7
Abaca	84.3	86.2	81.3	83.6	82.0	84.1	88.4	80.5	85.2	84.3
Rubber	96.0	140.7	145.9	146.0	147.2	156.4	171.9	185.4	180.7	172.5
Cacao	5.6	6.0	7.0	8.0	8.8	9.1	9.4	9.8	9.6	9.7
Cassava	1,151.9	1,491.1	1,686.7	1,724.1	1,784.3	1,865.9	1,846.9	1,854.0	1,815.7	1,797.8
Camote	731.4	692.9	701.7	726.2	716.9	695.0	660.3	668.9	662.3	677.2
Peanut	33.7	40.0	41.3	42.2	43.0	39.9	37.6	34.8	31.4	34.0
Mongo	24.9	25.1	25.3	25.9	25.3	26.6	25.1	26.7	25.1	23.2
Onion	42.5	52.5	53.1	54.2	60.9	45.9	65.3	61.5	60.3	55.5
Garlic	14.6	13.3	15.0	15.5	15.4	14.1	17.2	17.9	12.4	11.8
Tomato	133.3	149.0	150.4	165.7	166.9	167.9	178.7	184.0	177.2	165.4
Eggplant	112.1	110.4	102.7	104.5	107.7	109.8	111.6	112.7	104.0	110.4
Cabbage	63.0	62.1	66.1	69.0	71.3	70.3	75.9	68.3	75.8	83.2
Citrus	122.8	115.8	129.5	139.3	156.3	157.7	149.6	150.2	142.2	142.8
<b>Other Crops</b>										
Other fiber crops	245.7	198.5	204.8	195.1	68.0	76.0	64.6	58.4	55.1	57.8
Other root crops	245.9	197.8	121.1	126.4	126.8	127.5	121.3	132.3	128.7	129.3
Tubers	147.3	140.2	146.8	162.0	159.6	198.0	214.0	201.4	198.4	199.3
Spices	21.3	22.9	25.6	26.1	24.9	25.5	26.3	27.0	26.5	26.7
Fruit bearing Vegetables	2,677.8	2,503.4	2,633.3	2,740.8	2,691.4	2,680.6	2,887.6	2,910.2	2,820.2	2,831.3
Leafy / Stem Vegetables	1,108.9	1,092.0	1,122.4	1,141.7	910.5	1,058.0	1,097.2	1,080.2	1,124.6	1,134.5
Other Legumes	28.6	29.7	30.1	31.8	31.3	32.0	34.0	34.3	35.0	35.3
Other Fruits	2,882.5	2,852.3	3,104.7	3,239.6	3,451.0	3,595.2	3,639.3	3,764.9	3,794.3	3,820.2
Others	409.8	426.9	474.1	480.7	439.5	481.2	493.7	499.9	507.2	513.1
<b>Agricultural Crops</b>	<b>61,689.7</b>	<b>61,865.8</b>	<b>58,831.6</b>	<b>59,010.1</b>	<b>56,685.3</b>	<b>59,700.4</b>	<b>64,207.1</b>	<b>61,566.4</b>	<b>64,109.3</b>	<b>63,487.9</b>

Source: Bureau of Agricultural Statistics

Table IV.1.3 Estimated Area and Production of Selected Crops, Laguna (1/2)

Crop	1991			1992			1993		
	Area ha	Yield/ha kg/ha	Production tons	Area ha	Yield/ha kg/ha	Production tons	Area ha	Yield/ha kg/ha	Production tons
Cowpea (dry)	1	1,000	1.0	1	1,000	1.0	1	1,000	1.0
Peanut	15	1,213	18.2	15	1,225	18.4	15	1,225	18.4
Mongo	12	600	7.2	12	592	7.1	12	597	7.2
String beans	47	5,298	249.0	47	5,285	248.4	48	5,314	255.1
Winged beans	12	4,917	59.0	8	4,750	38.0	8	4,523	36.2
Banana	1,051	7,807	8,205.5	1,081	6,169	6,668.3	1,004	6,092	6,116.6
Calamansi	470	175	82.1	470	178	83.6	470	134	62.9
Coconut	71,096	1,545	109,835.0	66,830	1,558	104,133.9	66,800	1,459	97,455.9
Jackfruit			368.0			372.6			376.3
Mango	168	2,412	405.3	165	2,646	436.5	170	2,698	458.6
Pineapple	456	7,211	3,288.0	467	7,170	3,348.5	399	7,176	2,863.2
Bamboo shoots			0.3			0.3			0.3
Black pepper	15	733	11.0	15	748	11.2	15	763	11.4
Cacao	11	238	2.6	9	224	2.0	9	226	2.0
Coffee	1,020	443	452.2	1,020	440	448.4	1,002	440	440.6
Sugarcane	7,062	82,931	585,661.0	6,562	84,257	552,892.8	9,949	60,781	604,713.0

Source: Bureau of Agricultural Statistics

Table IV.1.3 Estimated Area and Production of Selected Crops, Laguna (2/2)

Crop	1991			1992			1993		
	Area ha	Yield/ha kg/ha	Production tons	Area ha	Yield/ha kg/ha	Production tons	Area ha	Yield/ha kg/ha	Production tons
Ampalaya	30	2,082	62.5	31	2,131	66.1	31	2,157	66.9
Chayote	12	8,400	100.8	13	8,408	109.3	13	8,290	107.8
Cucumber	2	1,800	3.6	2	1,820	3.6	2	1,784	3.6
Eggplant	113	8,654	977.9	126	7,976	1,005.0	151	6,728	1,016.0
Gourd	14	9,550	133.7	14	9,646	135.0	14	9,820	137.5
Green pepper	3	4,067	12.2	3	4,113	12.3	3	4,154	12.5
Okra	10	11,500	115.0	10	11,895	119.0	10	12,088	120.9
Patola	4	3,000	12.0	4	3,090	12.4	4	3,074	12.3
Squash	75	20,000	1,500.0	85	19,988	1,699.0	84	19,895	1,671.1
Tomato	715	12,779	9,137.0	561	13,339	7,483.0	600	13,407	8,044.0
Watermelon	188	19,149	3,600.0	167	18,635	3,112.0	163	18,492	3,014.3
Arrowroots	58	7,328	425.0	58	7,401	429.3	59	7,422	437.9
Carrot	283	7,085	2,005.0	279	7,229	2,016.8	272	7,212	1,961.7
Cassava	244	12,291	2,999.0	204	12,934	2,638.6	207	12,779	2,645.3
Gabi	67	6,515	436.5	67	6,541	438.3	71	6,404	454.7
Garlic	50	3,850	192.5	51	3,850	196.3	55	3,891	214.0
Ginger	7	9,171	64.2	6	10,807	64.8	6	11,023	66.1
Radish	87	7,838	681.9	88	7,842	690.1	90	7,742	696.8
Ubi	16	4,625	74.0	16	4,718	75.5	16	4,812	77.0
Cabbage	229	6,367	1,458.0	231	6,347	1,466.2	231	6,319	1,459.7
Mustard	34	6,353	216.0	33	6,480	213.8	34	6,328	215.2
Pechay	14	9,857	138.0	16	8,884	142.1	16	8,926	142.8
String beans	47	5,298	249.0	47	5,285	248.4	48	5,314	255.1
Winged beans	12	4,917	59.0	8	4,750	38.0	8	4,523	36.2

Source : Bureau of Agricultural Statistics ( Radish and Cabbage were revised according to field survey of JICA Study Team in 1994.)



Table IV.1.4 Cropping Intensity in the Study Area

CROP	Nagcarlan				Liliv				Majayjay				Total						
	Dry		Wet		Dry		Wet		Dry		Wet		Dry		Wet				
	ha	%	ha	%	ha	%	ha	%	ha	%	ha	%	ha	%	ha	%			
Tomato	24.91	54	0.00	0	9.25	71	0.00	0	5.90	82	0.80	11	40.06	61	0.80	1	40.86	62	
Cabbage	12.61	28	3.75	8	2.75	21	0.80	6	0.40	6	0.50	7	15.76	24	5.05	8	20.81	32	
Radish	5.95	13	0.00	0	0.00	0	0.70	5	0.00	0	0.00	0	5.95	9	0.70	1	6.65	10	
Baguio Beans	1.14	2	0.50	1	0.50	4	0.00	0	0.40	6	0.50	7	2.04	3	1.00	2	3.04	5	
Sweet Potato	0.50	1	4.00	9	0.00	0	2.70	21	0.00	0	1.00	14	0.50	1	7.70	12	8.20	12	
Baguio Pechay	0.70	2	0.00	0	0.50	4	0.00	0	0.50	7	0.00	0	1.70	3	0.00	0	1.70	3	
Sayote	0.00	0	0.70	2	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.70	1	0.70	1	
Eggplant	0.00	0	0.50	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.50	1	0.50	1	
<b>Total</b>																			
Cropped Area	45.81	100	9.45	21	13.00	100	4.20	32	7.20	100	2.80	39	66.01	100	16.45	25	82.46	125	
Net Upland	45.81				13.00				7.20				66.01				66.01		
Total Land	112.40				23.65				14.40				150.45						
Households	74				19				10				103						

Source: The result of the farmers' household survey

**Table IV.1.5 Present Cropped Vegetables and Cropping Season in the Study Area**

(Unit: Number of farmers cropping the vegetable during the season)

Cropping Season	Tomato	Cabbage	Radish	Sweet Potato	Beans	Pachay	Sayote	Eggplant
JAN - MAR	2	5			1	2		
JAN - APL	11	7	1		1			
JAN - MAY	2	1			1			
FEB - MAR			1					
FEB - APL	8	8	1		1	2		
FEB - MAY	30	8	2					
FEB - JUN	6	2						
MAR - APL			1					
MAR - MAY	7	1				1		
MAR - JUN	12	4						
MAR - JUL	4							
APL - JUN		1						
APL - JUL	2							
MAY - AUG								1
MAY - OCT				1				
JUN - JUL		1						
JUN - AUG					1			
JUN - SEP	1	1	1		1			
JUL - AUG		1						
JUL - SEP		4						
JUL - OCT	1							
JUL - DEC				2				
AUG - OCT		1						
AUG - NOV	1	1						
AUG - DEC				1				
AUG - JAN				1			1	
SEP - JAN			1					
OCT - DEC	1	1						
OCT - MAR							1	
NOV - FEB	1							
DEC - FEB		1						
<b>TOTAL</b>	<b>89</b>	<b>48</b>	<b>8</b>	<b>5</b>	<b>6</b>	<b>5</b>	<b>2</b>	<b>1</b>

Source: The result of the farmers' household survey.

Note: The figures show the number of respondents out of 103 interviewees in the survey.

**Table IV.1.6 Changes in Land Use by the Project**

Land Use	without Project	with Project	Difference
<b>A&amp;D land</b>			
Vegetable farm	<u>530</u>	<u>1,160</u>	+ 630
- Rainfed	530	890	+ 360
- Irrigated	0	270	+ 270
Coconuts	<u>1,020</u>	<u>390</u>	- 630
Others*	<u>270</u>	<u>270</u>	± 0
Sub-total	1,820	1,820	± 0
<b>Public Forest</b>			
Vegetable farm	<u>150</u>	<u>150</u>	± 0
- Rainfed	150	80	- 70
- Irrigated	0	70	+ 70
Coconuts	<u>180</u>	<u>180</u>	± 0
Forest/scrub	<u>60</u>	<u>60</u>	± 0
Sub-total	390	390	± 0
<b>National Park</b>			
Vegetable farm	<u>80</u>	<u>80</u>	± 0
- Rainfed	80	80	± 0
- Irrigated	0	0	± 0
Coconuts	<u>20</u>	<u>20</u>	± 0
Forest	<u>690</u>	<u>690</u>	± 0
Sub-total	790	790	± 0
<b>Total</b>	<b>3,000</b>	<b>3,000</b>	<b>± 0</b>

Remark: "Others" includes river beds, residential areas, rice land, etc.

**Summary of Land Use Changes by the Project**

Land Use	without Project	with Project	Difference
Vegetable farm	<u>760</u>	<u>1,390</u>	+ 630
- Rainfed	760	1,050	+ 290
- Irrigated	0	340	+ 340
Coconuts	<u>1,220</u>	<u>590</u>	- 630
Forest/scrub	<u>750</u>	<u>750</u>	± 0
Others	<u>270</u>	<u>270</u>	± 0
<b>Total</b>	<b>3,000</b>	<b>3,000</b>	<b>± 0</b>

**Table IV.1.7 Comparison of Existing and Potential Vegetables  
in terms of Profitability and Marketability**

Vegetables	Unit Yield (ton/ha)	Unit Price (P/kg)	Gross Income (TP/ha)	Production Costs			Net Income (TP/ha)	Profita- bility	Market- ability	Suit- ability	Overall Rank
				Labour (TP/ha)	Material (TP/ha)	Total (TP/ha)					
<b>Existing Vegetables</b>											
1. Tomato	14.7	6.22	91.1	17.3	17.3	34.6	56.5	B	A	A	A
2. Cabbage	17.6	7.64	134.5	14.5	33.9	48.4	86.1	A	A	A	A
3. Raddish	15.3	5.57	85.3	13.3	16.2	29.5	55.8	B	B	A	A
4. Baguio Beans	6.7	9.73	65.4	17.0	25.5	42.5	22.9	C	B	A	B
5. Sweet Potato	15.4	3.80	58.5	11.4	13.9	25.3	33.2	C	A	A	B
<b>Potential Vegetables</b>											
6. Ampalaya	15.8	7.14	112.5	21.9	51.2	73.1	39.4	C	B	B	C
7. Cucumber	12.6	4.88	61.5	11.9	17.9	29.8	31.7	C	B	B	C
8. Eggplant	16.1	6.55	105.5	22.8	27.8	50.6	54.9	B	A	B	B
9. Green Pepper	7.8	27.70	216.1	42.6	28.4	71.0	145.1	A	A	B	B
10. Okra	12.1	5.85	70.7	26.5	11.3	37.8	32.9	C	B	C	C
11. Squash	15.8	4.64	73.5	16.6	24.9	41.5	32.0	C	B	C	C
12. Upo	12.0	3.46	41.5	12.3	18.5	30.8	10.7	C	B	B	C
13. Water Melon	16.0	14.89	238.2	39.2	39.2	78.4	159.8	A	C	C	C
14. Califlower	9.4	16.81	157.3	23.2	34.9	58.1	99.2	A	B	A	A
15. Celery	12.6	17.57	222.1	47.3	31.5	78.8	143.3	A	B	A	A
16. Chinese Cabbage	13.9	14.74	205.2	28.6	43.0	71.6	133.6	A	B	A	A
17. Lettuce	11.9	16.11	192.0	44.0	29.3	73.3	118.7	A	B	A	A
18. Pechay	9.0	5.95	53.6	14.9	10.0	24.9	28.7	C	A	A	B
19. Peanuts	2.1	19.31	40.6	5.3	9.8	15.1	25.5	C	B	C	C
20. Sitao	10.3	9.16	94.5	12.9	12.9	25.8	68.7	B	A	A	A
21. Sweet Peas	3.1	29.55	92.2	22.1	33.2	55.3	36.9	C	B	B	C
22. Carrot	12.6	11.17	140.3	18.8	28.2	47.0	93.3	A	B	A	A
23. Garlic	3.0	58.25	172.4	24.6	37.0	61.6	110.8	A	A	C	C
24. Ginger	8.0	8.97	71.8	15.5	36.1	51.6	20.2	C	B	C	C
25. Irish Potato	13.8	7.29	100.3	19.7	45.9	65.6	34.7	B	A	B	C

Source: elaborated from various data obtained from DCIEP, BAS, BPI, MAS, Benguet Provincial Office and Second Laguna de Bay Irrigation Project-Vegetable Component

Unit Yield: Average unit yield of crops grown in Cavite and Beguet (see Table 5.6.4)

Unit Prices: Estimated annual average ex-trading post prices derived from annual wholesale prices at Divisoria (see Table 3.6.4)

Production Costs: Average of various cost data obtained from BAS, Second Laguna de Bay Irrigation Project - Vegetable Component and Provincial Agricultural Office, Benguet after adjusting to 1994 prices (see Table 5.6.3)

Rating: A: Recomendable, B: Acceptable, C: Not recommendable

**Table IV.1.8 Unit Vegetable Production Costs for Comparison**

(Unit : Pesos/ha)

Vegetables	Actual Production Costs (1993)		Average	Production Costs for Comparison
	Cavite	Benguet		
<b>Existing Vegetables</b>				
1. Tomato	43,100	26,000	34,550	34,600
2. Cabbage	57,100	39,600	48,350	48,400
3. Raddish	21,800	37,100	29,450	29,500
4. Baguio Beans	-	42,500	42,500	42,500
5. Sweet Potato	27,600	22,900	25,250	25,300
<b>Potential Vegetables</b>				
6. Ampalaya	73,100	-	73,100	73,100
7. Cucumber	29,800	-	29,800	29,800
8. Eggplant	57,900	43,200	50,550	50,600
9. Green Pepper	-	71,000	71,000	71,000
10. Okra	37,800	-	37,800	37,800
11. Squash	41,500	-	41,500	41,500
12. Upo	30,800	-	30,800	30,800
13. Water Melon	78,400	-	78,400	78,400
14. Califlower	-	58,100	58,100	58,100
15. Celery	-	78,800	78,800	78,800
16. Chinese Cabbage	-	71,600	71,600	71,600
17. Lettuce	-	73,300	73,300	73,300
18. Pechay	26,600	23,100	24,850	24,900
19. Peanuts	-	15,100	15,100	15,100
20. Sitao	25,800	-	25,800	25,800
21. Sweet Peas	-	55,300	55,300	55,300
22. Carrot	-	47,000	47,000	47,000
23. Garlic	61,600	-	61,600	61,600
24. Ginger	51,600	-	51,600	51,600
25. Irish Potato	-	65,600	65,600	65,600

Source: Cavite: Second Laguna de Bay Irrigation Project- Vegetable component  
Benguet: Provincial Agricultural Office, Benguet

Remarks: Averages of unit production costs per ha in Cavite (lowland) and Benguet (highland) are adopted as production costs under future condition with the Project, because the project area is located in-between lowland and highland.

**Table IV.19 Anticipated Unit Yield of Vegetables**

(Unit : ton/ha)

Vegetables	Actual Crop Yield (1993)		Average	Anticipated Crop Yield
	Cavite	Benguet		
<b>Existing Vegetables</b>				
1. Tomato	14.50	14.8	14.7	14.7
2. Cabbage	18.70	16.5	17.6	17.6
3. Raddish	14.50	16.1	15.3	15.3
4. Baguio Beans	-	8.4	8.4	6.7
5. Sweet Potato	14.60	16.2	15.4	15.4
<b>Potential Vegetables</b>				
6. Ampalaya	19.70	-	19.7	15.8
7. Cucumber	15.80	-	15.8	12.6
8. Eggplant	15.40	16.8	16.1	16.1
9. Green Pepper	-	9.7	9.7	7.8
10. Okra	15.10	-	15.1	12.1
11. Squash	19.80	-	19.8	15.8
12. Upo	15.00	-	15.0	12.0
13. Water Melon	20.00	-	20.0	16.0
14. Califlower	-	11.7	11.7	9.4
15. Celery	-	15.8	15.8	12.6
16. Chinese Cabbage	-	17.4	17.4	13.9
17. Lettuce	-	14.9	14.9	11.9
18. Pechay	9.50	8.5	9.0	9.0
19. Peanuts	-	2.6	2.6	2.1
20. Sitao	12.90	-	12.9	10.3
21. Sweet Peas	-	3.9	3.9	3.1
22. Carrot	-	15.7	15.7	12.6
23. Garlic	3.70	-	3.7	3.0
24. Ginger	10.00	-	10.0	8.0
25. Irish Potato	-	17.2	17.2	13.8

Source: Cavite: Second Laguna de Bay Irrigation Project- Vegetable component  
Benguet: Provincial Agricultural Office, Benguet

Remarks: Average unit yields of crops grown in Cavite (lowland) and Benguet (highland) are adopted as anticipated crop yield under the future condition with the Project, because the project area is located in-between lowland and highland. In case that only one data is available either from Cavite or Benguet, 80% of the actual unit yield record was adopted.

Table IV.2.1 Vegetable Production in Second Laguna Irrigation Project Area, Laguna (1993)

(1) Cropped area (ha)

Crops	Tanza	Naic	G. Trias	Imus	Bacoor	Kawit	Noveleta	Dasmariñas	TMC	Total
Ampalaya	3.80		31.52	17.49	0.25	0.20	0.00	52.71	0.40	106.37
Sitao	6.34	9.90	5.09	15.09	1.10	2.49	0.17	17.16	2.38	59.72
Pepper	1.63	1.68	14.57	7.40	0.08	16.93	0.15	1.94	0.05	44.43
Tomato	5.42	14.28	6.68	0.32	0.21	1.38	0.50	2.30	0.38	31.47
Eggplant	3.05	9.39	11.56	1.67	0.21	0.47	0.12	0.78	0.99	28.24
Okra	0.32	8.89	2.74	7.48	5.01	1.53	0.00	0.77	0.12	26.86
Squash		2.31	0.21	2.07	0.10	0.84	0.00	7.69	0.27	13.49
Patola	2.18	6.87	1.21	2.75	0.93	0.03	0.00	3.27	0.05	17.29
Upo	0.28	7.76	2.43	5.92	0.89	0.39	0.00	3.63	0.00	21.30
Onion	0.81	0.08	3.90	0.00	0.05	0.07	0.00	1.07	0.00	5.98
Garlic	10.70	0.62	19.70	5.26	1.36	3.29	0.00	0.53	0.00	41.46
Pechay	12.52	0.41	0.30	0.06	0.03	5.03	0.65	1.28	0.00	20.28
Cabbage	0.20	1.09	0.05	0.00	0.05	0.00	0.00	0.18	0.00	1.57
Watermelon	137.29	14.68	75.35	23.80	8.69	0.00	0.00	2.00	0.00	261.81
Mungbean	10.27	7.95	21.45	88.83	0.50	28.74	8.80	1.91	2.50	170.95
Corn	22.00	14.18	37.20	3.52	2.27	1.42	1.45	51.38	20.33	153.75
Cassava	2.41	6.32	3.25	0.00	0.00	0.00	0.00	2.00	6.42	20.40
Peanut	2.10	4.35	32.81	0.60	0.00	0.00	0.00	10.17	15.40	65.43
Radish	0.64		3.55	0.00	0.00	0.00	0.00	1.00	0.84	6.03
Sweet Potato		0.05	7.24	0.74	0.00	0.00	0.00	0.50	0.36	8.89
Cucumber	2.49	2.73	0.79	2.79	0.56	0.16	0.00	0.00	0.02	9.54
Muskmelon	64.36	2.00		14.21	0.56	0.03	0.20	0.00	0.00	81.36
Mustard	0.18	0.02	0.03	0.00	0.01	0.00	0.00	0.00	0.47	0.71
Gabi	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.11
Ginger	0.03	0.05	0.00	0.00	0.00	0.00	0.00	0.40	1.81	2.29

(2) Crop production (tonnes)

Crops	Tanza	Naic	G. Trias	Imus	Bacoor	Kawit	Noveleta	Dasmariñas	TMC	Total
Ampalaya	45.33		630.40	349.80	5.00	4.00	0.00	1054.20	8.00	2096.73
Sitao	72.98	48.50	76.28	226.35	16.50	37.35	1.00	257.33	35.70	771.99
Pepper	15.80	13.40	116.52	59.20	0.64	135.44	0.10	55.48	0.40	396.98
Tomato	63.90	214.20	100.20	4.80	3.15	20.70	9.50	34.40	5.25	456.10
Eggplant	58.12	140.85	173.25	25.05	3.15	7.05	2.00	11.70	14.85	436.02
Okra	6.40	133.20	41.10	112.20	75.08	22.95	0.00	11.50	1.80	404.23
Squash		46.20	4.20	41.40	2.00	16.80	0.00	153.70	2.40	266.70
Patola	43.50	103.00	18.08	41.25	13.95	0.45	0.00	48.48	0.75	269.46
Upo	5.60	116.00	36.45	88.80	13.28	5.85	0.00	54.45	0.00	320.43
Onion	9.00	1.20	58.43	0.00	0.75	1.05	0.00	16.05	0.00	86.48
Garlic	0.98	1.60	98.50	26.30	6.78	16.45	0.00	2.65	0.00	153.26
Pechay	85.36	4.10	3.10	0.60	0.25	75.45	10.89	12.80	0.00	192.55
Cabbage	2.00	21.80	1.00	0.00	1.00	0.00	0.00	3.60	0.00	29.40
Watermelon	10.00	220.13	1.51	357.00	260.70	0.00	0.00	60.00	0.00	909.34
Mungbean	11.06	9.54	25.74	106.50	0.60	34.49	10.50	2.29	3.00	203.72
Corn	206.45	94.80	111.60	52.80	34.05	21.30	7.40	770.70	304.80	1603.90
Cassava	10.13	65.25	48.75	0.00	0.00	0.00	0.00	30.00	96.30	250.43
Peanut	20.70	46.20	492.15	6.00	0.00	0.00	0.00	101.70	230.93	897.68
Radish	6.80		53.25	0.00	0.00	0.00	0.00	15.00	12.60	87.65
Sweet Potato		0.75	108.60	7.40	0.00	0.00	0.00	7.50	5.33	129.58
Cucumber	44.50	41.25	11.78	41.85	8.40	2.40	0.00	0.00	0.30	150.48
Muskmelon	676.50	30.00		213.15	8.40	0.45	3.00	0.00	0.00	931.50
Mustard	1.80	0.30	0.45	0.00	0.10	0.00	0.00	0.00	4.65	7.30
Gabi	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.50
Ginger	0.60	0.75	0.00	0.00	0.00	0.00	0.00	6.00	1.40	8.75

(3) Crop yield (tonnes / ha)

Crops	Tanza	Naic	G. Trias	Imus	Bacoor	Kawit	Noveleta	Dasmariñas	TMC	Total
Ampalaya	11.93		20.00	20.00	20.00	20.00		20.00	20.00	19.71
Sitao	11.51	4.90	14.99	15.00	15.00	15.00	5.88	15.00	15.00	12.93
Pepper	9.69	7.98	8.00	8.00	8.00	8.00	0.67	28.60	8.00	8.93
Tomato	11.79	15.00	15.00	15.00	15.00	15.00	19.00	14.96	13.82	14.49
Eggplant	19.06	15.00	14.99	15.00	15.00	15.00	16.67	15.00	15.00	15.44
Okra	20.00	14.98	15.00	15.00	14.99	15.00		14.94	15.00	15.05
Squash		20.00	20.00	20.00	20.00	20.00		19.99	8.89	19.77
Patola	19.95	14.99	14.94	15.00	15.00	15.00		14.83	15.00	15.58
Upo	20.00	14.95	15.00	15.00	14.92	15.00		15.00		15.04
Onion	11.11	15.00	14.98		15.00	15.00		15.00		14.46
Garlic	0.09	2.58	5.00	5.00	4.99	5.00		5.00		3.70
Pechay	6.82	10.00	10.33	10.00	8.33	15.00	16.75	10.00		9.49
Cabbage	10.00	20.00	20.00		20.00			20.00		18.73
Watermelon	0.07	15.00	0.02	15.00	30.00			30.00		3.47
Mungbean	1.08	1.20	1.20	1.20	1.20	1.20	1.19	1.20	1.20	1.19
Corn	9.38	6.69	3.00	15.00	15.00	15.00	5.10	15.00	14.99	10.43
Cassava	4.20	10.32	15.00					15.00	15.00	12.28
Peanut	9.86	10.62	15.00	10.00				10.00	15.00	13.72
Radish	10.63		15.00					15.00	15.00	14.54
Sweet Potato		15.00	15.00	10.00				15.00	14.81	14.58
Cucumber	17.87	15.11	14.91	15.00	15.00	15.00			15.00	15.77
Muskmelon	10.51	15.00		15.00	15.00	15.00	15.00			11.45
Mustard	10.00	15.00	15.00		10.00					9.89
Gabi	50.00								10.00	13.64
Ginger	20.00	15.00						15.00	0.77	3.82





Table IV.2.3 Anticipated Unit Yield of Proposed Vegetables

(Unit: ton/ha)

Vegetables	Advanced Vegetable Production Area			Anticipated Crop Yield		
	Second Laguna (Cavite) (a)	La Trinidad (Benguet) (b)	Average (c)	Irrigated Area	Rainfed Area	Reference
				Unit Yield (e)	Unit Yield	Reference
<b>Existing Vegetables</b>						
Tomato	14.50	14.8	14.7	14.7	12.0	Present(10.0) x 1.2
Cabbage(Dry)	18.70	16.5	17.6	(d) 17.6	8.4	Present( 7.0) x 1.2
Cabbage(Wet)				**10.6	**8.4	(e) x 0.8
Raddish	14.50	16.1	15.3	15.3	10.8	Present( 9.0) x 1.2
Baguio Beans	-	8.4		6.7	**6.3	Present(6.0) x 1.05
Sweet Potato	14.60	*16.2	14.6	14.6	12.0	Present(10.0) x 1.2
<b>Proposed New Vegetables</b>						
Carrot	-	15.7		12.6	10.1	(e) x 0.8
Califlower	-	11.7		9.4		(b) x 0.8
Celery	-	15.8		12.6		(b) x 0.8
Chinese Cabbage	-	17.4		13.9		(b) x 0.8
Lettuce	-	14.9		11.9	9.5	(e) x 0.8
Sitao	12.90	-		10.3	8.2	(e) x 0.8

Remark \* : The average unit yield of Benguet Province was used instead of the unit yield of La Trinidad which was too low to represent that of advanced area.

\*\* : These unit yields were determined taking into account of present unit yield and balances between these crops and others.

**Table IV.2.4 Insects and Diseases of the Main Vegetables in the Study Area**

**(1) Insecta and Diseases**

Cropa	Insects	Deseases
Tomato	Tomato fruit worm Mites	Late bright Early bright Bacteria wilt Leaf spot Mosaic of tomato Blossom-end
Cabbage	Diamond back moth Cutworm	Soft rot
Snap beans	Bean aphid Pod borer	Bean rust Damping off -of seedling
Pole sitao	Aphid Pod borer	Bean rust
Radish	Diamond back moth	

**(2) Popular Insecticides and Fungicides**

Insecticide: Desis, Chymbush, Malathion, Lannate, Folidol, etc.  
 Fungicide: Dithane, Benlate, etc.

Table IV 2.5 Labor Requirement of Vegetable Production per Hectare in the Irrigated Area

(Unit: manday, animal/day)

Crop	Jan		Feb		Mar		Apr		May		Jun		Total
	F	E	F	E	F	E	F	E	F	E	F	E	
Tomato	105	91	113	106	68	45	55	65	45	40	50	45	180
Cabbage(D)													210
Cabbage(W)													180
Radish													140
Sweet potato													100
B. Beans													103
Carrot													210
Cauliflower													310
Celery													490
C. Cabbage													380
Lettuce													430
Sitao													110
Total	22	33	75	70	120	95	105	110	135	130	70	75	2,843
Mean days	0	0	12	0	0	0	0	0	0	0	0	18	6
Animal days	0	0	0	0	0	0	0	0	0	0	0	0	72

Crop	Jul		Aug		Sep		Oct		Nov		Dec		Total
	F	E	F	E	F	E	F	E	F	E	F	E	
Tomato	2	3	20	5	25	20	20	20	20	20	20	25	180
Cabbage(D)													210
Cabbage(W)													180
Radish													140
Sweet potato													100
B. Beans													103
Carrot													210
Cauliflower													310
Celery													490
C. Cabbage													380
Lettuce													430
Sitao													110
Total	0	0	12	0	0	0	0	0	0	0	0	115	2,843
Mean days	0	0	0	0	0	0	0	0	0	0	0	18	6
Animal days	0	0	0	0	0	0	0	0	0	0	0	0	72

Table IV.2.6 Labor Requirement of Vegetable Production per Hectare in the Rainfed Area

(Unit: maddy, animal/day)

Crop	Jan		Feb		Mar		Apr		May		Jun	
	F	E	F	E	F	E	F	E	F	E	F	E
Tomato	0	5	5	10	5	10	5	10	5	10	5	10
Cabbage(D)	0	5	5	10	5	10	5	10	5	10	5	10
Cabbage(W)	0	5	5	10	5	10	5	10	5	10	5	10
Radish	0	5	5	10	5	10	5	10	5	10	5	10
Sweet potato	0	5	5	10	5	10	5	10	5	10	5	10
B. Beans	0	5	5	10	5	10	5	10	5	10	5	10
Carrot	0	5	5	10	5	10	5	10	5	10	5	10
Lettuce	0	5	5	10	5	10	5	10	5	10	5	10
Sitao	0	5	5	10	5	10	5	10	5	10	5	10
Total	0	10	35	70	43	86	38	76	25	50	35	70
Man days	0	10	35	70	43	86	38	76	25	50	35	70
Animal days	0	0	6	12	6	12	0	0	0	0	0	0

Crop	Jul		Aug		Sep		Oct		Nov		Dec		Total
	F	E	F	E	F	E	F	E	F	E	F	E	
Tomato	0	5	5	10	5	10	5	10	5	10	5	10	130
Cabbage(D)	0	5	5	10	5	10	5	10	5	10	5	10	130
Cabbage(W)	0	5	5	10	5	10	5	10	5	10	5	10	130
Radish	0	5	5	10	5	10	5	10	5	10	5	10	115
Sweet potato	0	5	5	10	5	10	5	10	5	10	5	10	100
B. Beans	0	5	5	10	5	10	5	10	5	10	5	10	98
Carrot	0	5	5	10	5	10	5	10	5	10	5	10	180
Lettuce	0	5	5	10	5	10	5	10	5	10	5	10	400
Sitao	0	5	5	10	5	10	5	10	5	10	5	10	600
Total	0	10	52	104	105	210	75	150	85	170	35	70	1388
Man days	0	10	52	104	105	210	75	150	85	170	35	70	1388
Animal days	0	0	12	24	0	0	0	0	0	0	0	0	54

**Table IV.2.7 Labor Requirement of Vegetable Production of Average Farm in the Irrigated Area**

Crop	Area (ha)	(Unit: manday/animal/day)												Total				
		Jan	Jan	Feb	Feb	Mar	Mar	Apr	Apr	May	May	Jun	Jun					
		F	E	F	E	F	E	F	E	F	E	F	E					
Tomato	0.23							1.15	1.15	5.75	4.60	2.30	3.45	3.45	1.15	1.15		
Cabbage(D)	0.14					0.70		3.50	3.50	1.38	2.80	2.80	2.10	2.80	2.80	2.80		
Cabbage(W)	0.09							0.84		2.80	2.80	2.80	2.10	2.80	2.80	2.80		
Radish	0.09																	
Sweet potato	0.14									1.80	0.90	1.35	0.90	1.35	1.35	1.35		
B. Beans	0.05		0.30		0.30													
Carrot	0.14																	
Cauliflower	0.05																	
Celery	0.05		2.50		3.00													
C. Cabbage	0.14		4.20		4.20		5.60											
Lettuce	0.05																	
Sitao	0.23		1.15		2.30		3.45											
<b>Total</b>	<b>1.38</b>	<b>8.85</b>	<b>8.60</b>	<b>10.15</b>	<b>9.80</b>	<b>10.15</b>	<b>12.35</b>	<b>5.05</b>	<b>6.90</b>	<b>10.35</b>	<b>8.30</b>	<b>6.45</b>	<b>6.45</b>	<b>7.60</b>	<b>5.30</b>	<b>5.30</b>		
Man days		0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.54	1.38	0.00	0.00	0.00	0.00	0.00	0.00		
Animal days																		
Crop		Jul	Aug	Sep	Oct	Nov	Dec	Total										
		F	E	F	E	F	E	F	E	F	E	F	E	F	E	F	E	
Tomato	4.60	4.60															41.40	1.38
Cabbage(D)																	29.40	0.84
Cabbage(W)		0.45															16.20	0.54
Radish																	12.60	0.54
Sweet potato	0.28	0.42															14.00	0.84
B. Beans																	0.84	0.30
Carrot																	29.40	0.84
Cauliflower																	15.50	0.30
Celery																	24.50	0.30
C. Cabbage																	53.20	0.84
Lettuce																	21.50	0.30
Sitao																	25.50	1.38
<b>Total</b>	<b>4.88</b>	<b>5.72</b>	<b>4.75</b>	<b>6.95</b>	<b>8.30</b>	<b>7.45</b>	<b>10.25</b>	<b>8.35</b>	<b>8.35</b>	<b>10.05</b>	<b>10.25</b>	<b>6.65</b>	<b>10.25</b>	<b>12.05</b>	<b>10.25</b>	<b>288.15</b>	<b>8.40</b>	
Man days		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.30
Animal days																		

**Table IV.2.8 Labor Requirement of Vegetable Production of Average Farm in the Rainfed Area**

(Unit: manday, animal/day)

Crop	Area (ha)	Jan		Feb		Mar		Apr		May		Jun		E
		F	M	F	M	F	M	F	M	F	M	F	M	
Tomato	0.31			1.55	7.75	3.10	1.55	3.10	3.10	3.10	6.20	3.10		
Cabbage(D)	0.12			0.60	3.00	1.20	0.60	1.20	1.20	1.20	2.40	1.20		
Cabbage(W)	0.12				0.72									
Radish	0.12				3.00	1.80	1.20	1.20	1.20	1.80	1.80	1.20		
Sweet potato	0.19				0.72									
B. Beans	0.06			1.50	1.20	0.48	0.36	0.48	0.60	0.48				
Carrot	0.06			0.36										
Lettuce	0.06													
Shao	0.19													
<b>Total</b>	<b>1.24</b>			2.15	11.95	4.78	5.63	3.71	5.98	6.10	10.40	5.50	0.00	0.00
Man days				0.00	0.36	0.00	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Animal days														

Crop	Jul		Aug		Sep		Oct		Nov		Dec		Total
	F	M	F	M	F	M	F	M	F	M	F	M	
Tomato													40.30
Cabbage(D)													15.60
Cabbage(W)													15.60
Radish													13.80
Sweet potato													19.00
B. Beans													5.88
Carrot													10.80
Lettuce													24.00
Shao													19.00
<b>Total</b>	<b>0.00</b>	<b>0.90</b>	<b>4.88</b>	<b>4.17</b>	<b>5.20</b>	<b>5.80</b>	<b>5.80</b>	<b>5.80</b>	<b>8.30</b>	<b>8.30</b>	<b>4.70</b>	<b>0.00</b>	<b>163.98</b>
Man days													0.00
Animal days													7.38

**Table IV. 3.1 (1) Production Cost at Present in the Study Area (Financial)**

Item	Unit	Tomato			Cabbage Dry			Cabbage Wet		
		Unit Price	Quantity	Value	Unit Price	Quantity	Value	Unit Price	Quantity	Value
Farm inputs	kg	4,000.0	0.2	800	4,000.0	0.2	800	4,000.0	0.2	800
Seeds	kg	4,000.0	0.2	800	4,000.0	0.2	800	4,000.0	0.2	800
Fertilizer										
- Urea	kg	6.9	275.0	1,898	6.9	300.0	2,070	6.9	300.0	2,070
- Complete(14-14-14)	kg	7.2	175.0	1,260	7.2	100.0	720	7.2	100.0	720
- TSP	kg			0			0			0
- Mulate Potash	kg			0			0			0
- Manure	kg	1.2	1,800.0	2,160	1.2	1,700.0	2,040	1.2	1,700.0	2,040
Agro-chemicals										
- Insecticides	lit.	869.0	3.0	2,607	869.0	2.5	2,173	869.0	5.0	4,345
- Fungicides	kg	200.0	3.0	600	200.0	4.0	800	200.0	6.0	1,200
Other farm materials										
- Irrigation facilities				0			0			0
- Rain protection				0			0			0
- Stakes / Poles	100pcs.	150.0	10.0	1,500			0			0
- Trellis				0			0			0
- Nylon rope	rolls	90.0	8.0	720			0			0
- Tying materials	rolls	55.0	10.0	550			0			0
Labor										
- Man*	day	90.0	103.0	9,270	90.0	98.0	8,820	90.0	98.0	8,820
- Man & Animals**	day	250.0	4.0	1,000	250.0	4.0	1,000	250.0	4.0	1,000
Transportation	day	250.0	13.0	3,250	250.0	9.0	2,250	250.0	5.0	1,250
Others				1,000			1,000			1,000
<b>Total cost</b>				<b>26,615</b>			<b>21,673</b>			<b>23,245</b>

Note: \* The unit price (90pesos) is the average labor cost of a man (100pesos) and a woman (80pesos=man x 0.8) per day.  
 \*\* The unit price is the labor cost of a man plus an animal per day.

Item	Unit	Radish			Sweet potato			Baguio Beans		
		Unit Price	Quantity	Value	Unit Price	Quantity	Value	Unit Price	Quantity	Value
Farm inputs	kg	240.0	4.0	960	20.0	165.0	3,300	200.0	10.0	2,000
Seeds	kg	240.0	4.0	960	20.0	165.0	3,300	200.0	10.0	2,000
Fertilizer										
- Urea	kg	6.9	80.0	552	6.9		0	6.9		0
- Complete(14-14-14)	kg	7.2	120.0	864	7.2		0	7.2	100.0	720
- TSP	kg			0			0			0
- Mulate Potash	kg			0			0			0
- Manure	kg	1.2	500.0	600	1.2	1,500.0	1,800	1.2	600.0	720
Agro-chemicals										
- Insecticides	lit.	869.0	1.0	869	869.0		0	869.0	1.0	869
- Fungicides	kg	200.0		0	200.0		0	200.0	1.0	200
Other farm materials										
- Irrigation facilities				0			0			0
- Rain protection				0			0			0
- Stakes / Poles	100pcs.			0			0			0
- Trellis				0			0			5,000
- Nylon rope	rolls			0			0	90.0	8.0	720
- Tying materials	rolls			0			0	55.0	10.0	550
Labor										
- Man	day	90.0	75.0	6,750	90.0	86.0	7,740	90.0	98.0	8,820
- Man & Animals	day	250.0	4.0	1,000	250.0	4.0	1,000	250.0	4.0	1,000
Transportation	day	250.0	11.0	2,750	250.0	13.0	3,250	250.0	8.0	2,000
Others				1,000			1,000			1,000
<b>Total cost</b>				<b>15,345</b>			<b>18,090</b>			<b>23,599</b>

**Table IV.3.1 (2) Production Cost at Present in the Study Area (Economic)**

Item	Unit	Tomato			Cabbage Dry			Cabbage Wet		
		Unit Price	Quantity	Value	Unit Price	Quantity	Value	Unit Price	Quantity	Value
Farm inputs										
Seeds	kg	3,200.0	0.2	640	4,000.0	0.2	800	3,200.0	0.2	640
Fertilizer										
- Urea	kg	5.4	275.0	1,485	5.4	300.0	1,620	5.4	300.0	1,620
- Complete(14-14-14)	kg	4.9	175.0	858	4.9	100.0	490	4.9	100.0	490
- TSP	kg			0			0			0
- Muiate Potash	kg			0			0			0
- Manure	kg	1.0	1,800.0	1,800	1.0	34.0	34	1.0	1,700.0	1,700
Agro-chemicals										
- Insecticides	lit.	851.6	3.0	2,555	851.6	2.5	2,129	851.6	5.0	4,258
- Fungicides	kg	196.0	3.0	588	196.0	4.0	784	196.0	6.0	1,176
Other farm materials										
- Irrigation facilities				0			0			0
- Rain protection				0			0			0
- Stakes / Poles	100pcs.	120.0	10.0	1,200			0			0
- Trellis				0			0			0
- Nylon rope	rolls	72.0	8.0	576			0			0
- Tying materials	rolls	44.0	10.0	440			0			0
Labor										
- Man	day	63.0	103.0	6,489	63.0	98.0	6,174	63.0	98.0	6,174
- Man & Animals	day	175.0	4.0	700	175.0	4.0	700	175.0	4.0	700
Transportation	day	175.0	13.0	2,275	175.0	9.0	1,575	175.0	5.0	875
Others				800			800			800
<b>Total cost</b>				<b>20,405</b>			<b>15,106</b>			<b>18,433</b>

Item	Unit	Radish			Sweet potato			Baguio Beans		
		Unit Price	Quantity	Value	Unit Price	Quantity	Value	Unit Price	Quantity	Value
Farm inputs										
Seeds	kg	192.0	4.0	768	16.0	165.0	2,640	160.0	10.0	1,600
Fertilizer										
- Urea	kg	5.4	80.0	432	5.4		0	5.4		0
- Complete(14-14-14)	kg	4.9	120.0	588	4.9		0	4.9	100.0	490
- TSP	kg			0			0			0
- Muiate Potash	kg			0			0			0
- Manure	kg	1.0	500.0	500	1.0	1,500.0	1,500	1.0	600.0	600
Agro-chemicals										
- Insecticides	lit.	851.6	1.0	852	851.6		0	851.6	1.0	852
- Fungicides	kg	196.0		0	196.0		0	196.0	1.0	196
Other farm materials										
- Irrigation facilities				0			0			0
- Rain protection				0			0			0
- Stakes / Poles	100pcs.			0			0			0
- Trellis				0			0			4,000
- Nylon rope	rolls			0			0	72.0	8.0	576
- Tying materials	rolls			0			0	44.0	10.0	440
Labor										
- Man	day	63.0	75.0	4,725	63.0	86.0	5,418	63.0	98.0	6,174
- Man & Animals	day	175.0	4.0	700	175.0	4.0	700	175.0	4.0	700
Transportation	day	175.0	11.0	1,925	175.0	13.0	2,275	175.0	8.0	1,400
Others				800			800			800
<b>Total cost</b>				<b>11,290</b>			<b>13,333</b>			<b>17,828</b>



Table IV.3.2 (1) Production cost in the Irrigated Area (Financial)

(1/2)

Item	Unit	Tomato			Cabbage Dry			Cabbage Wet		
		Unit Price	Quantity	Value	Unit Price	Quantity	Value	Unit Price	Quantity	Value
Farm inputs										
Seeds	kg	12,500.0	0.2	2,500	7,440.0	0.3	2,232	7,440.0	0.3	2,232
Fertilizer										
- Urea	kg	6.9	400.0	2,760	6.9	600.0	4,140	6.9	450.0	3,105
- Complete(14-14-14)	kg	7.2	250.0	1,800	7.2	200.0	1,440	7.2	150.0	1,080
- TSP	kg									
- Muiate Potash	kg									
- Manure	kg	1.2	2,700.0	3,240	1.2	3,400.0	4,080	1.2	2,600.0	3,120
Agro-chemicals										
- Insecticides	lit.	869.0	5.0	4,345	869.0	5.0	4,345	869.0	6.0	5,214
- Fungicides	kg	200.0	5.0	1,000	200.0	8.0	1,600	200.0	8.0	1,600
Other farm materials										
- Irrigation facilities				1,250			1,250			
- Rain protection										22,000
- Stakes / Poles	100pcs.	150.0	12.0	1,800						
- Trellis										
- Nylon rope	rolls	90.0	10.0	900						
- Tying materials	rolls	55.0	12.0	660						
Labor										
- Man	day	90.0	180.0	16,200	90.0	210.0	18,900	90.0	180.0	16,200
- Man & Animals	day	250.0	6.0	1,500	250.0	6.0	1,500	250.0	6.0	1,500
Transportation	day	250.0	19.0	4,750	250.0	22.0	5,500	250.0	13.0	3,250
Others				1,500			1,500			1,500
<b>Total cost</b>				<b>44,203</b>			<b>46,487</b>			<b>60,801</b>

Item	Unit	Radish			Sweet potato			Baguio Beans		
		Unit Price	Quantity	Value	Unit Price	Quantity	Value	Unit Price	Quantity	Value
Farm inputs										
Seeds	kg	240.0	5.0	1,200	20.0	165.0	3,300	200.0	10.0	2,000
Fertilizer										
- Urea	kg	6.9	150.0	1,035	6.9	100.0	690	6.9		
- Complete(14-14-14)	kg	7.2	250.0	1,800	7.2	100.0	720	7.2	100.0	720
- TSP	kg									
- Muiate Potash	kg									
- Manure	kg	1.2	1,000.0	1,200	1.2	2,000.0	2,400	1.2	1,000.0	1,200
Agro-chemicals										
- Insecticides	lit.	869.0	2.0	1,738	869.0			869.0	1.0	869
- Fungicides	kg	200.0		0	200.0			200.0	1.0	200
Other farm materials										
- Irrigation facilities				1,250.0						1,250
- Rain protection										
- Stakes / Poles	100pcs.									5,000
- Trellis										
- Nylon rope	rolls							90.0	8.0	720
- Tying materials	rolls							55.0	10.0	550
Labor										
- Man	day	90.0	140.0	12,600	90.0	110.0	9,900	90.0	103.0	9,270
- Man & Animals	day	250.0	6.0	1,500	250.0	6.0	1,500	250.0	4.0	1,000
Transportation	day	250.0	19.0	4,750	250.0	19.0	4,750	250.0	9.0	2,250
Others				1,500			1,500			1,500
<b>Total cost</b>				<b>28,573</b>			<b>24,760</b>			<b>26,529</b>

Item	Unit	Carrot			Cauliflower			Celery		
		Unit Price	Quantity	Value	Unit Price	Quantity	Value	Unit Price	Quantity	Value
Farm inputs										
Seeds	kg	560.0	6.0	3,360	3,560.0	0.3	1,068	3,360.0	1.2	4,032
Fertilizer										
- Urea	kg	6.9			6.9	800.0	5,520	6.9	400.0	2,760
- Complete(14-14-14)	kg	7.2	500.0	3,600	7.2	500.0	3,600	7.2	750.0	5,400
- TSP	kg	5.5	500.0	2,750						
- Muiate Potash	kg	4.5	200.0	900						
- Manure	kg	1.2	4,000.0	4,800	1.2	5,000.0	6,000	1.2	5,000.0	6,000
Agro-chemicals										
- Insecticides	lit.	869.0	3.0	2,607	869.0	5.0	4,345	869.0	6.0	5,214
- Fungicides	kg	200.0	3.0	600	200.0	8.0	1,600	200.0	10.0	2,000
Other farm materials										
- Irrigation facilities										1,250
- Rain protection				22,000			22,000			
- Stakes / Poles	100pcs.									
- Trellis										
- Nylon rope	rolls									
- Tying materials	rolls									
Labor										
- Man	day	90.0	210.0	18,900	90.0	310.0	27,900	90.0	490.0	44,100
- Man & Animals	day	250.0	6.0	1,500	250.0	6.0	1,500	250.0	6.0	1,500
Transportation	day	250.0	16.0	4,000	250.0	12.0	3,000	250.0	16.0	4,000
Others				1,500			1,500			1,500
<b>Total cost</b>				<b>66,517</b>			<b>78,033</b>			<b>77,756</b>

Table IV.3.2 (1) Production cost in the Irrigated Area (Financial)

(2/2)

Item	Unit	Chinese cabbage			Lettuce			Sitao		
		Unit Price	Quantity	Value	Unit Price	Quantity	Value	Unit Price	Quantity	Value
Farm inputs										
Seeds	kg	3,850.0	0.3	1,155	2,520.0	0.9	2,268	120.0	8.0	960
Fertilizer										
- Urea	kg	6.9	400.0	2,760	6.9	300.0	2,070	6.9		
- Complete(14-14-14)	kg	7.2	450.0	3,240	7.2	600.0	4,320	7.2	150.0	1,080
- TSP	kg									
- Muiate Potash	kg									
- Manure	kg	1.2	6,000.0	7,200	1.2	5,000.0	6,000	1.2	1,500.0	1,800
Agro-chemicals										
- Insecticides	lit.	869.0	5.0	4,345	869.0	6.0	5,214	869.0	4.0	3,476
- Fungicides	kg	200.0	8.0	1,600	200.0	20.0	4,000	200.0	4.0	800
Other farm materials										
- Irrigation facilities				1,250						
- Rain protection							22,000			
- Stakes / Poles	100pcs.									
- Trellis										5,000
- Nylon rope	rolls							90.0	8.0	720
- Tying materials	rolls							55.0	10.0	550
Labor										
- Man	day	90.0	380.0	34,200	90.0	430.0	38,700	90.0	110.0	9,900
- Man & Animals	day	250.0	6.0	1,500	250.0	6.0	1,500	250.0	6.0	1,500
Transportation	day	250.0	18.0	4,500	250.0	15.0	3,750	250.0	13.0	3,250
Others				1,500			1,500			1,500
Total cost				63,250			91,322			31,786

Table IV.3.2 (2) Production Cost in the Irrigated Area (Economic)

(1/2)

Item	Unit	Tomato			Cabbage Dry			Cabbage Wet		
		Unit Price	Quantity	Value	Unit Price	Quantity	Value	Unit Price	Quantity	Value
Farm inputs										
Seeds	kg	12,250.0	0.2	2,450	7,291.0	0.3	2,187	7,291.0	0.3	2,187
Fertilizer										
- Urea	kg	5.4	400.0	2,160	5.4	600.0	3,240	5.4	450.0	2,430
- Complete(14-14-14)	kg	4.9	250.0	1,225	4.9	200.0	980	4.9	150.0	735
- TSP	kg									
- Muiate Potash	kg									
- Manure	kg	1.0	2,700.0	2,700	1.0	3,400.0	3,400	1.0	2,600.0	2,600
Agro-chemicals										
- Insecticides	lit.	851.6	5.0	4,258	851.6	5.0	4,258	851.6	6.0	5,110
- Fungicides	kg	196.0	5.0	980	196.0	8.0	1,568	196.0	8.0	1,568
Other farm materials										
- Irrigation facilities				1,000			1,000			
- Rain protection										
- Stakes / Poles	100pcs.	120.0	12.0	1,440						17,600
- Trellis										
- Nylon rope	rolls	72.0	10.0	720						
- Tying materials	rolls	44.0	12.0	528						
Labor										
- Man	day	63.0	180.0	11,340	63.0	210.0	13,230	63.0	180.0	11,340
- Man & Animals	day	175.0	6.0	1,050	175.0	6.0	1,050	175.0	6.0	1,050
Transportation	day	175.0	19.0	3,325	175.0	22.0	3,850	175.0	13.0	2,275
Others				1,200			1,200			1,200
<b>Total cost</b>				<b>34,376</b>			<b>35,963</b>			<b>48,095</b>

Item	Unit	Radish			Sweet potato			Bagulo Beans		
		Unit Price	Quantity	Value	Unit Price	Quantity	Value	Unit Price	Quantity	Value
Farm inputs										
Seeds	kg	192.0	5.0	960	16.00	165.0	2,640	160.0	10.0	1,600
Fertilizer										
- Urea	kg	5.4	150.0	810	5.4	100.0	540	5.4	100.0	490
- Complete(14-14-14)	kg	4.9	250.0	1,225	4.9	100.0	490	4.9	100.0	490
- TSP	kg									
- Muiate Potash	kg									
- Manure	kg	1.0	1,000.0	1,000	1.0	2,000.0	2,000	1.0	1,000.0	1,000
Agro-chemicals										
- Insecticides	lit.	851.6	2.0	1,703	851.6			851.6	1.0	852
- Fungicides	kg	196.0			196.0			196.0	1.0	196
Other farm materials										
- Irrigation facilities				1,000						1,000
- Rain protection										
- Stakes / Poles	100pcs.									4,000
- Trellis										
- Nylon rope	rolls							72.0	8.0	576
- Tying materials	rolls							44.0	10.0	440
Labor										
- Man	day	63.0	140.0	8,820	63.0	110.0	6,930	63.0	103.0	6,489
- Man & Animals	day	175.0	6.0	1,050	175.0	6.0	1,050	175.0	4.0	700
Transportation	day	175.0	19.0	3,325	175.0	19.0	3,325	175.0	9.0	1,575
Others				1,200			1,200			1,200
<b>Total cost</b>				<b>21,093</b>			<b>18,175</b>			<b>20,118</b>

Item	Unit	Carrot			Cauliflower			Celery		
		Unit Price	Quantity	Value	Unit Price	Quantity	Value	Unit Price	Quantity	Value
Farm inputs										
Seeds	kg	550.0	6.0	3,300	3,489.0	0.3	1,047	3,293.0	1.2	3,952
Fertilizer										
- Urea	kg	5.4			5.4	800.0	4,320	5.4	400.0	2,160
- Complete(14-14-14)	kg	4.9	500.0	2,450	4.9	500.0	2,450	4.9	750.0	3,675
- TSP	kg	6.0	500.0	3,010						
- Muiate Potash	kg	5.7	200.0	1,140						
- Manure	kg	1.0	4,000.0	4,000	1.0	5,000.0	5,000	1.0	5,000.0	5,000
Agro-chemicals										
- Insecticides	lit.	851.6	3.0	2,555	851.6	5.0	4,258	851.6	6.0	5,110
- Fungicides	kg	196.0	3.0	588	196.0	8.0	1,568	196.0	10.0	1,960
Other farm materials										
- Irrigation facilities										1,000
- Rain protection				17,600			17,600			
- Stakes / Poles	100pcs.									
- Trellis										
- Nylon rope	rolls									
- Tying materials	rolls									
Labor										
- Man	day	63.0	210.0	13,230	63.0	310.0	19,530	63.0	490.0	30,870
- Man & Animals	day	175.0	6.0	1,050	175.0	6.0	1,050	175.0	6.0	1,050
Transportation	day	175.0	16.0	2,800	175.0	12.0	2,100	175.0	16.0	2,800
Others				1,200			1,200			1,200
<b>Total cost</b>				<b>52,923</b>			<b>60,123</b>			<b>58,777</b>

Table IV.3.2 (2) Production Cost in the Irrigated Area (Economic)

(2/2)

Item	Unit	Chinese cabbage			Lettuce			Shao		
		Unit Price	Quantity	Value	Unit Price	Quantity	Value	Unit Price	Quantity	Value
Farm inputs										
Seeds	kg	3,778.0	0.3	1,133	2,470.0	0.9	2,223	96.0	8.0	768
Fertilizer										
- Urea	kg	5.4	400.0	2,160	5.4	300.0	1,620	5.4		0
- Complete(14-14-14)	kg	4.9	450.0	2,205	4.9	600.0	2,940	4.9	150.0	735
- TSP	kg									
- Muiate Potash	kg									
- Manure	kg	1.0	6,000.0	6,000	1.0	5,000.0	5,000	1.0	1,500.0	1,500
Agro-chemicals										
- Insecticides	lit.	851.6	5.0	4,258	851.6	6.0	5,110	851.6	4.0	3,406
- Fungicides	kg	196.0	8.0	1,568	196.0	20.0	3,920	196.0	4.0	784
Other farm materials										
- Irrigation facilities				1,000						1,000
- Rain protection							17,600			
- Stakes / Poles	100pcs.									
- Trellis										4,000
- Nylon rope	rolls							72.0	8.0	576
- Tying materials	rolls							44.0	10.0	440
Labor										
- Man	day	63.0	380.0	23,940	63.0	430.0	27,090	63.0	110.0	6,930
- Man & Animals	day	175.0	6.0	1,050	175.0	6.0	1,050	175.0	6.0	1,050
Transportation	day	175.0	18.0	3,150	175.0	15.0	2,625	175.0	13.0	2,275
Others				1,200			1,200			1,200
Total cost				47,664			70,378			24,664

**Table IV.3.3 (1) Production cost in the Rainfed Area (Financial)**

Item	Unit	Tomato			Cabbage Dry			Cabbage Wet		
		Unit Price	Quantity	Value	Unit Price	Quantity	Value	Unit Price	Quantity	Value
Farm inputs										
Seeds	kg	12,500.0	0.2	2,500	7,440.0	0.2	1,488	7,440.0	0.2	1,488
Fertilizer										
- Urea	kg	6.9	330.0	2,277	6.9	360.0	2,484	6.9	360.0	2,484
- Complete(14-14-14)	kg	7.2	210.0	1,512	7.2	120.0	864	7.2	120.0	864
- TSP	kg									
- Muiate Potash	kg									
- Manure	kg	1.2	2,200.0	2,640	1.2	2,000.0	2,400	1.2	2,000.0	2,400
Agro-chemicals										
- Insecticides	lit.	869.0	4.0	3,476	869.0	3.0	2,607	869.0	5.0	4,345
- Fungicides	kg	200.0	4.0	800	200.0	5.0	1,000	200.0	7.0	1,400
Other farm materials										
- Irrigation facilities										
- Rain protection										10,000
- Stakes / Poles	100pcs.	150.0	12.0	1,800						
- Trellis										
- Nylon rope	rolls	90.0	10.0	900						
- Tying materials	rolls	55.0	12.0	660						
Labor										
- Man	day	90.0	130.0	11,700	90.0	130.0	11,700	90.0	130.0	11,700
- Man & Animals	day	250.0	6.0	1,500	250.0	6.0	1,500	250.0	6.0	1,500
Transportation	day	250.0	15.0	3,750	250.0	11.0	2,750	250.0	11.0	2,750
Others				1,200			1,200			1,200
<b>Total cost</b>				<b>34,715</b>			<b>27,993</b>			<b>40,131</b>

Item	Unit	Radish			Sweet potato			Baguio Beans		
		Unit Price	Quantity	Value	Unit Price	Quantity	Value	Unit Price	Quantity	Value
Farm inputs										
Seeds	kg	240.0	5.0	1,200	20.0	165.0	3,300	200.0	10.0	2,000
Fertilizer										
- Urea	kg	6.9	120.0	828	6.9	100.0	690	6.9		
- Complete(14-14-14)	kg	7.2	150.0	1,080	7.2	100.0	720	7.2	100.0	720
- TSP	kg									
- Muiate Potash	kg									
- Manure	kg	1.2	600.0	720	1.2	2,000.0	2,400	1.2	1,000.0	1,200
Agro-chemicals										
- Insecticides	lit.	869.0	2.0	1,738	869.0			869.0	1.0	869
- Fungicides	kg	200.0			200.0			200.0	1.0	200
Other farm materials										
- Irrigation facilities										
- Rain protection										
- Stakes / Poles	100pcs.									5,000
- Trellis										
- Nylon rope	rolls							90.0	8.0	720
- Tying materials	rolls							55.0	10.0	550
Labor										
- Man	day	90.0	115.0	10,350	90.0	100.0	9,000	90.0	98.0	8,820
- Man & Animals	day	250.0	5.0	1,250	250.0	5.0	1,250	250.0	4.0	1,000
Transportation	day	250.0	14.0	3,500	250.0	15.0	3,750	250.0	9.0	2,250
Others				1,200			0			1,200
<b>Total cost</b>				<b>21,866</b>			<b>22,310</b>			<b>24,529</b>

Item	Unit	Carrot			Lettuce			Shao		
		Unit Price	Quantity	Value	Unit Price	Quantity	Value	Unit Price	Quantity	Value
Farm inputs										
Seeds	kg	560.0	5.0	2,800	2,520.0	0.9	2,268	120.0	8.0	960
Fertilizer										
- Urea	kg	6.9			6.9	240.0	1,656	6.9		
- Complete(14-14-14)	kg	7.2	400.0	2,880	7.2	480.0	3,456	7.2	150.0	1,080
- TSP	kg	5.5	400.0	2,200						
- Muiate Potash	kg	4.5	160.0	720						
- Manure	kg	1.2	4,000.0	4,800	1.2	4,000.0	4,800	1.2	1,500.0	1,800
Agro-chemicals										
- Insecticides	lit.	869.0	3.0	2,607	869.0	5.0	4,345	869.0	4.0	3,476
- Fungicides	kg	200.0	3.0	600	200.0	16.0	3,200	200.0	4.0	800
Other farm materials										
- Irrigation facilities										
- Rain protection				10,000			10,000			10,000
- Stakes / Poles	100pcs.									
- Trellis										5,000
- Nylon rope	rolls							90.0	8.0	720
- Tying materials	rolls							55.0	10.0	550
Labor										
- Man	day	90.0	180.0	16,200	90.0	400.0	36,000	90.0	100.0	9,000
- Man & Animals	day	250.0	5.0	1,250	250.0	5.0	1,250	250.0	6.0	1,500
Transportation	day	250.0	14.0	3,500	250.0	12.0	3,000	250.0	10.0	2,500
Others				1,200			1,200			1,200
<b>Total cost</b>				<b>48,757</b>			<b>71,175</b>			<b>38,586</b>

**Table IV.3.3 (2) Production cost in the Rainfed Area (Economic)**

Item	Unit	Tomato			Cabbage Dry			Cabbage Wet		
		Unit Price	Quantity	Value	Unit Price	Quantity	Value	Unit Price	Quantity	Value
Farm inputs										
Seeds	kg	12,250.0	0.2	2,450	7,291.0	0.2	1,458	7,291.0	0.2	1,458
Fertilizer										
- Urea	kg	5.4	330.0	1,782	5.4	360.0	1,944	5.4	360.0	1,944
- Complete(14-14-14)	kg	4.9	210.0	1,029	4.9	120.0	588	4.9	120.0	588
- TSP	kg									
- Muiate Potash	kg									
- Manure	kg	1.0	2,200.0	2,200	1.0	2,000.0	2,000	1.0	2,000.0	2,000
Agro-chemicals										
- Insecticides	lit.	851.6	4.0	3,406	851.6	3.0	2,555	851.6	5.0	4,258
- Fungicides	kg	196.0	4.0	784	196.0	5.0	980	196.0	7.0	1,372
Other farm materials										
- Irrigation facilities				800						
- Rain protection										8,000
- Stakes / Poles	100pcs.	120.0	12.0	1,440						
- Trellis										
- Nylon rope	rolls	72.0	10.0	720						
- Tying materials	rolls	44.0	12.0	528						
Labor										
- Man	day	63.0	130.0	8,190	63.0	130.0	8,190	63.0	130.0	8,190
- Man & Animals	day	175.0	6.0	1,050	175.0	6.0	1,050	175.0	6.0	1,050
Transportation	day	175.0	15.0	2,625	175.0	11.0	1,925	175.0	11.0	1,925
Others				960			960			960
<b>Total cost</b>				<b>27,964</b>			<b>21,650</b>			<b>31,745</b>

Item	Unit	Radish			Sweet potato			Baguio Beans		
		Unit Price	Quantity	Value	Unit Price	Quantity	Value	Unit Price	Quantity	Value
Farm inputs										
Seeds	kg	192.0	5.0	960	16.0	165.0	2,640	160.0	10.0	1,600
Fertilizer										
- Urea	kg	5.4	120.0	648	5.4	100.0	540	5.4		
- Complete(14-14-14)	kg	4.9	150.0	735	4.9	100.0	490	4.9	100.0	490
- TSP	kg									
- Muiate Potash	kg									
- Manure	kg	1.0	600.0	600	1.0	2,000.0	2,000	1.0	1,000.0	1,000
Agro-chemicals										
- Insecticides	lit.	851.6	2.0	1,703	851.6			851.6	1.0	852
- Fungicides	kg	196.0			196.0			196.0	1.0	196
Other farm materials										
- Irrigation facilities										
- Rain protection										
- Stakes / Poles	100pcs.									4,000
- Trellis										
- Nylon rope	rolls							72.0	8.0	576
- Tying materials	rolls							44.0	10.0	440
Labor										
- Man	day	63.0	115.0	7,245	63.0	100.0	6,300	63.0	98.0	6,174
- Man & Animals	day	175.0	5.0	875	175.0	5.0	875	175.0	4.0	700
Transportation	day	175.0	14.0	2,450	175.0	15.0	2,625	175.0	9.0	1,575
Others				960			960			960
<b>Total cost</b>				<b>16,176</b>			<b>16,430</b>			<b>18,563</b>

Item	Unit	Carrot			Lettuce			Sisao		
		Unit Price	Quantity	Value	Unit Price	Quantity	Value	Unit Price	Quantity	Value
Farm inputs										
Seeds	kg	550.0	5.0	2,750	2,470.0	0.9	2,223	96.0	8.0	768
Fertilizer										
- Urea	kg	5.4			5.4	240.0	1,296	5.4		
- Complete(14-14-14)	kg	4.9	400.0	1,960	4.9	480.0	2,352	4.9	150.0	735
- TSP	kg	6.0	400.0	2,400						
- Muiate Potash	kg	5.7	160.0	912						
- Manure	kg	1.0	4,000.0	4,000	1.0	4,000.0	4,000	1.0	1,500.0	1,500
Agro-chemicals										
- Insecticides	lit.	851.6	3.0	2,555	851.6	5.0	4,258	851.6	4.0	3,406
- Fungicides	kg	196.0	3.0	588	196.0	16.0	3,136	196.0	4.0	784
Other farm materials										
- Irrigation facilities										
- Rain protection				8,000			8,000			8,000
- Stakes / Poles	100pcs.									
- Trellis										4,000
- Nylon rope	rolls							72.0	8.0	576
- Tying materials	rolls							44.0	10.0	440
Labor										
- Man	day	63.0	180.0	11,340	63.0	400.0	25,200	63.0	100.0	6,300
- Man & Animals	day	175.0	5.0	875	175.0	5.0	875	175.0	6.0	1,050
Transportation	day	175.0	14.0	2,450	175.0	12.0	2,100	175.0	10.0	1,750
Others				960			960			960
<b>Total cost</b>				<b>38,798</b>			<b>54,400</b>			<b>30,269</b>

**Table IV.3.4 (1) Farm Budget with Project of Average Farm in the Irrigated Area**

Item	Unit	Tomato	Cabbage Dry	Cabbage Wet	Radish	Sweet Potato	Baguio Beans	Carrot	Cauli- flower	Celery	Chinese Cabbage	Lettuce	Sitao	Total
Cropped Area	(ha)	0.23	0.14	0.09	0.09	0.14	0.05	0.14	0.05	0.05	0.14	0.05	0.23	1.38 0.46
Products	(tons)	3.38	2.43	0.97	1.41	2.13	0.31	1.74	0.43	0.58	1.92	0.55	2.37	18.21
Unit Price	(p/kg)	7.46	7.56	10.00	6.96	4.34	9.05	16.18	28.28	17.62	12.71	22.26	9.25	
Gross Income	(pesos)	25,222	18,362	9,715	9,797	9,223	2,789	28,134	12,228	10,213	24,371	12,185	21,901	184,141
Farm inputs	(pesos)													
Seeds		575	308	205	110	455	92	464	49	185	159	104	221	2,929
Fertilizer		1,794	1,333	672	371	526	88	1,663	696	651	1,822	570	662	10,848
Agro-chemicals		1,229	820	627	160	0	49	443	273	332	820	424	983	6,161
Other farm materials		1,060	173	2,024	115	0	346	3,036	1,012	58	173	1,012	1,730	10,737
Labour		4,071	2,815	1,628	1,297	1,573	472	2,815	1,352	2,098	4,927	1,849	2,622	27,520
Transportation		1,093	759	299	437	656	104	552	138	184	621	173	748	5,762
Others		345	207	138	138	207	69	207	69	69	207	69	345	2,070
Total Cost		10,167	6,415	5,594	2,629	3,417	1,220	9,179	3,590	3,577	8,729	4,201	7,311	66,028
Net Return		15,055	11,947	4,122	7,168	5,806	1,569	18,954	8,639	6,636	15,642	7,984	14,591	118,113

**Table IV.3.4 (2) Farm Budget with Project of Average Farm in the Rainfed Area**

Item	Unit	Tomato	Cabbage Dry	Cabbage Wet	Radish	Sweet Potato	Baguio Beans	Carrot	Lettuce	Sitao	Total
Cropped Area	(ha)	0.31	0.12	0.12	0.12	0.19	0.06	0.06	0.06	0.19	1.24 0.62
Products	(tons)	3.72	1.04	1.04	1.34	2.23	0.39	0.63	0.59	1.53	12.51
Unit Price	(p/kg)	4.61	7.93	10.00	5.58	4.77	8.41	16.18	22.26	10.22	
Gross Income	(pesos)	17,149	8,260	10,416	7,473	10,647	3,285	10,132	13,111	15,588	96,060
Seeds	(pesos)	775	185	185	149	614	124	174	141	179	2,523
Fertilizer		1,993	713	713	326	709	119	657	615	536	6,379
Agro-chemicals		1,326	447	712	216	0	66	199	468	795	4,229
Other farm materials		1,042	0	1,240	0	0	389	620	620	3,026	6,937
Labour		4,092	1,637	1,637	1,438	1,907	609	1,082	2,310	1,953	16,664
Transportation		1,163	341	341	434	698	140	217	186	465	3,984
Others		372	149	149	149	223	74	74	74	223	1,488
Total Cost		10,762	3,471	4,976	2,711	4,150	1,521	3,023	4,413	7,177	42,204
Net Return		6,388	4,789	5,440	4,761	6,497	1,764	7,109	8,698	8,411	53,856

Table IV.4.1 Wholesale Prices of Vegetables at Divisoria Market in Manila (1989 - 1994)

Vegetables	Year	(Unit: Pesos /kg)													
		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.	
1. Tomato	1989	5.29	1.00	1.82	3.73	4.20	8.75	7.19	7.52	7.60	9.07	8.07	8.63	11.26	8.49
	1990	4.28	5.67	5.47	3.68	3.10	4.52	12.30	15.58	14.61	7.80	7.78	8.99	7.82	6.58
	1991	3.30	1.65	3.27	7.58	13.39	8.68	10.86	6.44	9.48	11.85	22.04	8.42	8.91	8.91
	1992	3.47	3.40	3.32	2.71	3.26	10.54	11.83	15.01	11.25	8.02	14.28	29.55	9.72	8.32
	1993	16.58	3.99	6.92	7.32	6.77	7.96	9.94	9.91	11.08	9.14	13.04	13.37	8.29	8.29
	Ave.	6.58	3.14	4.16	5.00	6.14	7.96	9.10	12.39	17.54	19.18	18.30	9.75	13.43	13.43
	1989	3.95	4.13	6.39	11.02	14.13	18.80	18.82	15.61	15.51	12.22	13.56	8.13	11.86	11.86
	1990	7.23	8.93	12.32	8.09	7.92	10.26	6.99	15.92	20.52	13.28	9.83	6.88	10.68	10.68
	1991	8.57	5.80	5.57	6.65	11.67	11.23	7.70	5.82	12.18	14.50	15.84	12.69	9.85	9.85
	1992	7.57	5.94	5.24	3.95	4.93	3.63	3.78	7.46	4.59	6.95	9.69	5.30	5.75	5.75
1993	8.82	10.46	12.05	13.71	14.22	10.34	9.28	11.44	14.07	13.23	13.44	8.55	10.18	11.85	
Ave.	7.23	7.05	8.31	8.68	10.57	10.34	9.28	6.74	4.76	4.58	7.95	6.71	6.29	6.29	
3. Raddish	1989	2.39	2.03	2.90	2.50	3.28	3.69	-	-	-	-	-	5.89	6.04	3.59
	1990	5.56	5.22	6.66	6.47	5.38	9.70	10.68	7.54	9.80	7.20	6.54	4.72	7.13	7.13
	1991	3.58	5.42	7.12	6.32	9.87	15.55	6.99	7.30	14.17	18.29	8.39	7.67	9.22	9.22
	1992	7.03	5.97	5.31	5.12	8.84	10.46	9.14	9.14	8.78	6.82	9.91	11.62	8.09	8.09
	1993	8.47	7.24	6.76	7.13	9.84	9.28	8.14	7.19	9.33	10.77	7.76	7.35	7.89	7.89
	Ave.	5.41	5.18	5.75	5.51	7.44	9.28	8.14	7.19	9.33	10.77	7.76	7.35	7.42	7.42
	1989	4.87	6.31	9.10	9.13	13.15	12.46	12.12	10.93	21.35	14.75	8.81	8.52	10.96	10.96
	1990	11.04	9.99	10.13	9.07	11.47	11.34	17.33	16.79	12.06	10.50	23.34	16.76	13.32	13.32
	1991	4.48	6.78	14.68	15.55	13.26	9.16	11.69	12.19	23.62	26.85	11.31	7.95	13.13	13.13
	1992	11.89	14.73	12.15	8.42	12.94	16.63	20.26	8.98	8.87	20.52	23.90	21.52	15.07	15.07
1993	10.15	12.03	14.29	13.87	15.86	11.14	13.75	12.49	15.81	17.41	16.07	12.93	12.97	12.97	
Ave.	8.49	9.97	12.07	11.21	13.34	12.15	13.75	12.49	15.81	17.41	16.07	12.93	12.97	12.97	
4. Baguro Beans	1989	4.55	3.97	3.76	3.11	3.06	3.30	4.50	5.66	5.42	5.14	4.80	4.80	4.36	4.36
	1990	5.58	5.89	4.89	6.15	5.79	5.51	6.04	6.43	6.12	5.18	4.48	5.02	5.59	5.59
	1991	4.50	4.06	4.16	3.71	3.51	3.74	3.26	3.89	4.73	4.39	4.64	4.59	5.59	5.59
	1992	4.32	4.67	4.57	3.01	3.61	4.55	4.93	10.39	10.13	9.68	10.2	15.42	4.10	4.10
	1993	5.68	4.22	4.52	4.75	4.75	3.97	4.24	5.96	6.06	5.70	5.80	6.91	5.07	5.07
	Ave.	4.93	4.56	4.38	4.15	4.14	3.97	4.24	5.96	6.06	5.70	5.80	6.91	5.07	5.07
	1989	4.87	6.31	9.10	9.13	13.15	12.46	12.12	10.93	21.35	14.75	8.81	8.52	10.96	10.96
	1990	11.04	9.99	10.13	9.07	11.47	11.34	17.33	16.79	12.06	10.50	23.34	16.76	13.32	13.32
	1991	4.48	6.78	14.68	15.55	13.26	9.16	11.69	12.19	23.62	26.85	11.31	7.95	13.13	13.13
	1992	11.89	14.73	12.15	8.42	12.94	16.63	20.26	8.98	8.87	20.52	23.90	21.52	15.07	15.07
1993	10.15	12.03	14.29	13.87	15.86	11.14	13.75	12.49	15.81	17.41	16.07	12.93	12.97	12.97	
Ave.	8.49	9.97	12.07	11.21	13.34	12.15	13.75	12.49	15.81	17.41	16.07	12.93	12.97	12.97	
5. Sweet Potato	1989	4.55	3.97	3.76	3.11	3.06	3.30	4.50	5.66	5.42	5.14	4.80	4.80	4.36	4.36
	1990	5.58	5.89	4.89	6.15	5.79	5.51	6.04	6.43	6.12	5.18	4.48	5.02	5.59	5.59
	1991	4.50	4.06	4.16	3.71	3.51	3.74	3.26	3.89	4.73	4.39	4.64	4.59	5.59	5.59
	1992	4.32	4.67	4.57	3.01	3.61	4.55	4.93	10.39	10.13	9.68	10.2	15.42	4.10	4.10
	1993	5.68	4.22	4.52	4.75	4.75	3.97	4.24	5.96	6.06	5.70	5.80	6.91	5.07	5.07
	Ave.	4.93	4.56	4.38	4.15	4.14	3.97	4.24	5.96	6.06	5.70	5.80	6.91	5.07	5.07



Table IV.4.1 Wholesale Prices of Vegetables at Divisoria Market in Manila (1989 - 1994)

(2/5)

(Unit : Pesos / kg)

Vegetables	Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
6. Ampalaya	1989						8.21	7.07	10.30	10.07	19.07	13.71	9.53	11.14
	1990	4.64	5.14	6.23	4.47	5.53	11.52	9.30	6.30	10.50	10.50	11.20	7.75	7.76
	1991	7.73	7.06	8.11	7.18	7.05	9.56	11.71	14.02	14.39	9.80	11.25	8.29	9.68
	1992	5.83	5.45	6.42	6.25	6.98	9.33	8.98	8.20	12.45	13.03	13.96	7.83	8.73
	1993	8.65	8.03	6.73	6.71	7.03	7.57	11.21	10.38	9.17	14.40	14.33	17.40	10.13
	1994	13.59	10.06	10.60	10.10	13.59								
Ave.	8.09	7.15	7.62	6.94	8.04	9.24	9.65	9.84	11.32	13.36	12.89	10.16	9.52	9.52
7. Cucumber	1989						5.05	4.39	6.82	3.86	3.52	5.97	5.88	5.07
	1990	3.75	2.83	4.78	5.14	6.29	6.59	7.33	8.50					5.65
	1991													
	1992													
	1993													
	1994	14.36	10.46	11.59	9.89	9.73								
Ave.	9.06	6.65	8.19	7.52	8.01	5.82	5.86	7.66	3.86	3.52	5.97	5.88	6.50	6.50
8. Eggplant	1989						5.44	5.94	8.82	7.15	11.54	10.62	7.81	8.19
	1990	4.75	4.39	4.22	4.10	4.17	4.66	7.77	7.37	12.11	9.46	15.13	9.10	7.27
	1991	6.21	5.07	5.86	4.47	4.67	7.22	9.85	12.79	11.09	6.96	16.79	11.55	8.54
	1992	10.97	5.44	3.68	4.37	5.84	5.93	10.41	10.16	14.47	7.99	20.13	8.38	8.98
	1993	10.02	6.08	6.34	5.61	6.29	6.56	7.41	13.75	8.14	15.76	14.28	22.32	10.21
	1994	14.57	10.05	7.50	6.95	7.61								9.34
Ave.	9.30	6.21	5.52	5.10	5.72	5.96	8.28	10.58	10.59	10.34	15.39	11.83	8.73	8.73
9. Green Peppet	1989													
	1990													
	1991													
	1992	50.99	35.40	15.49	13.78	18.01	24.22	20.01	22.07	47.56	47.24	84.91	46.55	35.52
	1993													
	1994	50.80	54.89	28.71	14.81	18.28								33.50
Ave.	50.90	45.15	22.10	14.30	18.15	24.22	20.01	22.07	47.56	47.24	84.91	46.55	36.93	
10. Okra	1989						3.11	3.07	5.23	5.46	6.21	6.07	5.68	4.98
	1990	5.88	7.01	6.53	4.38	4.88	5.26	5.39	4.47	8.52	6.36	7.00	6.23	5.99
	1991	8.37	5.83	5.30	4.06	4.36	5.09	5.59	9.59	5.64	5.07	13.56	10.78	6.94
	1992	6.36	5.00	5.37	6.04	6.86	5.14	5.28	5.92	9.87	10.84	12.82	9.14	7.39
	1993	12.88	11.89	10.44	6.92	6.33	5.49	5.58	10.66	7.92	17.24	13.90	20.98	10.85
	1994	11.61	15.03	13.13	7.40	11.73								11.78
Ave.	9.02	8.95	8.15	5.76	6.83	4.82	4.98	7.17	7.48	9.14	10.67	10.56	7.80	7.80

Table IV.4.1 Wholesale Prices of Vegetables at Divisoria Market in Manila (1989 - 1994)

(3/5)  
(Unit : Pesos / kg)

Vegetables	Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.	
11. Squash	1989						3.52	3.70	5.20	4.65	4.28	4.95	5.23	4.50	
	1990	5.01	4.47	4.68	4.39	4.82	4.88	5.01	5.22	6.61	3.83	4.32	5.51	4.90	
	1991	5.12	4.48	5.04	5.78	4.50	4.41	4.71	4.71	4.71	5.48	3.84	3.38	3.45	4.58
	1992	3.62	3.09	2.87	2.62	3.11	3.18	3.89	3.89	4.34	4.89	4.51	4.74	4.95	3.82
	1993	4.42	5.23	5.15	4.92	4.59	4.37	4.94	4.94	22.98	19.95	14.10	21.08	37.71	12.45
	1994	6.49	5.18	5.88	5.53	7.57									6.13
	Ave.	4.93	4.49	4.72	4.65	4.92	4.07	4.45	4.45	8.49	8.32	6.11	7.69	11.37	6.18
12. Upo	1989						2.94	3.05	4.83	5.20	5.69	5.89	5.80	4.77	
	1990	3.75	2.63	1.91	1.84	2.99	3.07	3.72	2.06	2.26	2.36	2.39	2.56	2.63	
	1991	2.77	2.59	2.96	2.91	2.92	3.00	4.70	6.06	5.15	2.53	3.59	3.29	3.54	
	1992	2.56	2.88	2.66	2.78	3.29	3.76	4.00	4.60	5.15	4.49	4.82	4.72	3.81	
	1993	3.66	3.54	3.32	2.89	3.04	2.78	3.45	13.99	8.63	7.47	9.12	12.69	6.22	
	1994	12.32	8.89	8.97	6.76	11.81									9.75
	Ave.	5.01	4.11	3.96	3.44	4.81	3.11	3.78	6.31	5.28	4.51	5.16	5.81	4.61	
13. Water Melon	1989														
	1990														
	1991		5.27											5.27	
	1992		12.37	16.71										14.54	
	1993	20.55	19.07	23.28	20.07									20.74	
	1994	18.24	32.63	24.65	22.18					37.44	34.98	42.88	37.71	23.05	23.77
	Ave.	19.40	17.34	21.55	21.13										19.85
14. Cauliflower	1989													5.79	
	1990	5.94	4.87	5.71	6.50									9.60	
	1991														
	1992														
	1993	9.99	7.82	9.38	10.72				37.44		34.98	42.88	37.71	23.05	23.77
	1994	7.48	7.64	10.27	15.69	24.32									13.08
	Ave.	7.80	6.78	8.45	10.97	24.32			37.44	34.98	34.98	42.88	37.71	12.81	22.41
15. Celery	1989	11.51	8.07	7.72	8.25	7.73	11.38	19.14	22.63	36.20	25.00	38.00	35.93	19.30	
	1990	14.43	15.50	12.67	18.65		16.50							15.55	
	1991														
	1992														
	1993														
	1994	54.60	46.91	22.71	12.32	17.20									30.75
	Ave.	26.85	23.49	14.37	13.07	12.47	13.94	19.14	22.63	36.20	25.00	38.00	35.93	23.42	

Table IV.4.1 Wholesale Prices of Vegetables at Divisoria Market in Manila (1989 - 1994)

(Unit: Pesos / kg)

Vegetables	Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.	
16. Chinese Cabbage	1989	-	-	-	-	-	-	-	-	-	-	-	-	-	
	1990	11.04	11.71	19.70	19.27	14.54	21.21	26.74	25.71	36.83	22.39	16.60	14.83	20.05	
	1991	14.59	14.80	18.14	15.35	15.57	16.08	14.54	21.61	25.32	22.95	22.31	16.05	18.11	
	1992	15.54	12.84	13.36	14.17	21.26	21.90	17.92	15.87	29.15	29.68	26.29	15.02	19.42	
	1993	14.62	15.51	15.67	15.57	15.00	17.42	19.90	19.81	-	-	-	-	16.69	
	1994	24.35	21.93	20.50	18.67	21.02	22.90	-	-	-	-	-	-	21.56	
	Ave.	16.03	15.36	17.47	16.61	17.48	19.90	19.78	20.75	30.43	25.01	21.73	15.30	19.65	
	17. Lettuce	1989	-	-	14.13	-	-	-	-	-	-	31.70	36.64	15.16	24.41
		1990	6.37	8.11	11.57	18.65	22.62	16.00	-	-	-	9.40	10.37	12.73	12.87
		1991	10.47	15.45	12.33	9.91	14.24	8.67	10.19	26.06	21.27	13.54	26.67	-	15.35
1992		20.35	12.63	8.95	12.32	13.57	20.00	-	-	-	-	-	12.97	14.47	
1993		11.15	22.40	13.89	19.11	-	-	-	22.45	33.96	60.88	48.21	23.15	28.36	
1994		69.13	49.42	21.21	24.56	35.59	47.21	-	-	-	-	-	-	41.19	
Ave.		23.49	21.60	13.68	17.01	21.51	22.97	10.19	24.26	27.62	28.88	30.47	16.00	21.47	
18. Pechay		1989	4.45	5.02	4.61	4.30	5.52	6.40	7.42	10.44	9.63	10.21	9.95	6.54	8.73
		1990	6.07	4.55	4.91	4.94	5.52	7.38	8.71	7.23	9.07	6.71	6.85	6.40	6.27
		1991	4.23	5.37	5.68	6.23	9.43	10.83	6.32	8.57	12.43	8.34	6.56	4.63	6.66
	1992	6.45	6.24	5.72	5.90	5.99	6.87	10.71	12.65	13.69	12.87	10.58	7.00	8.40	
	1993	10.25	7.71	7.43	7.78	11.81	-	-	-	10.77	17.86	11.85	12.94	9.50	
	1994	6.29	5.78	5.67	5.83	7.65	7.68	7.93	9.41	11.12	11.20	9.16	7.50	7.93	
	Ave.	24.00	26.00	27.08	27.92	28.58	26.88	20.29	23.38	22.51	22.22	22.84	26.29	24.83	
	19. Peanuts	1989	27.44	29.26	-	28.77	30.20	30.23	31.05	29.56	29.69	29.80	29.00	27.31	29.30
		1990	-	-	-	24.42	19.28	25.15	24.96	25.05	25.52	24.75	23.83	24.66	24.18
		1991	24.91	24.96	24.47	23.63	24.85	24.85	-	-	-	-	-	-	24.61
1992		35.00	33.27	31.00	30.93	33.80	-	-	-	-	-	-	24.66	31.44	
1993		27.84	28.37	27.52	27.13	27.34	25.10	23.74	24.18	24.34	24.20	24.10	25.09	25.75	
Ave.		9.09	6.13	6.90	7.08	9.60	9.60	11.10	7.90	13.00	10.00	11.20	8.00	9.13	
20. Sitao		1989	12.72	12.08	11.64	10.79	9.77	11.73	18.00	19.52	9.69	7.59	17.71	14.60	12.99
		1990	9.68	7.51	11.58	12.73	14.57	12.92	14.79	13.97	16.14	12.92	15.92	11.11	12.82
		1991	13.87	13.72	13.44	12.61	14.45	13.55	15.57	-	-	21.98	16.03	23.44	15.87
		1992	15.10	18.25	19.33	17.60	-	-	-	-	-	-	-	-	17.57
	1993	12.09	11.54	12.58	12.16	11.18	10.80	13.19	12.19	11.69	12.28	13.62	13.24	12.21	
	Ave.	11.54	12.58	12.16	11.18	10.80	13.19	12.19	11.69	12.28	13.62	13.24	12.21	12.21	

Table IV.4.1. Wholesale Prices of Vegetables at Divisoria Market in Manila (1989 - 1994)

(5/5)  
(Unit: Pesos / kg)

Vegetables	Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
21. Sweet Peas	1989						32.54	36.45	31.29	48.56	60.13	44.88	53.91	43.97
	1990	14.25	15.45	21.90	24.53	31.61	42.04	35.57	37.79	-	-	-	27.38	27.89
	1991	21.50	16.75	21.33	23.51	34.96	41.55	20.50	-	-	-	-	-	25.73
	1992	16.25	14.04	19.81	23.09	30.55	30.46	43.72	61.36	-	-	-	-	29.91
	1993	-	-	-	-	-	-	-	-	-	-	-	-	-
Ave.	26.80	27.04	26.96	29.11	41.19	36.65	34.06	43.48	48.56	60.13	44.88	53.91	39.40	
22. Carrot	1989						9.68	10.14	12.85	16.71	16.28	18.63	11.42	13.67
	1990	6.63	6.05	7.12	9.49	13.63	18.62	23.80	26.28	15.17	8.09	10.54	9.87	12.92
	1991	10.59	8.59	9.04	9.97	11.32	13.77	13.47	14.54	16.21	19.06	13.89	10.32	12.56
	1992	9.05	8.26	13.10	14.10	16.22	18.03	21.84	16.94	22.59	20.36	19.90	26.45	17.24
	1993	18.94	12.38	8.95	9.33	8.16	9.19	14.97	19.51	29.28	22.56	45.11	12.37	17.56
1994	9.94	11.28	13.35	13.00	26.97	-	-	-	-	-	-	-	14.91	
Ave.	11.03	9.31	10.31	11.18	15.26	13.86	16.84	18.02	19.99	17.27	21.57	14.09	14.90	
23. Garlic	1989						90.59	95.72	95.54	85.52	84.43	87.70	90.83	90.05
	1990	86.65	60.98	44.10	44.91	45.59	47.23	48.00	45.06	46.02	50.59	52.95	52.94	52.09
	1991	62.74	44.09	45.00	48.50	52.23	62.07	74.20	100.84	120.71	130.72	136.25	132.88	84.19
	1992	133.25	89.86	55.60	51.77	54.42	89.58	111.78	117.00	117.00	117.00	117.00	117.91	97.68
	1993	118.27	87.19	51.45	45.00	59.70	67.76	68.00	70.21	68.95	71.24	73.53	-	71.03
1994	70.00	72.39	65.81	68.20	65.80	-	-	-	-	-	-	-	68.44	
Ave.	94.18	70.90	52.39	51.68	55.55	71.45	79.54	85.73	87.64	90.80	93.49	98.64	77.66	
24. Ginger	1989						10.05	10.58	10.61	9.56	7.86	5.24	8.17	8.87
	1990	7.57	7.92	8.89	6.95	7.42	7.95	6.91	7.71	9.79	9.89	7.50	7.80	8.03
	1991	8.68	6.56	6.81	7.35	8.09	10.30	13.21	15.54	15.78	14.98	13.38	10.42	10.93
	1992	9.73	8.60	8.60	12.44	16.89	17.30	18.70	22.01	20.22	15.36	13.18	13.49	14.79
	1993	14.15	13.58	12.94	14.42	17.49	19.60	20.65	24.11	22.74	-	13.29	21.17	17.65
1994	9.36	8.63	9.76	8.10	8.28	-	-	-	-	-	-	-	8.83	
Ave.	9.90	9.24	9.40	9.85	11.63	13.04	14.01	16.00	15.62	12.02	10.52	12.21	11.95	
25. Irish Potato	1989						7.45	7.81	9.72	9.88	10.35	10.98	12.45	9.91
	1990	16.33	10.59	7.77	6.98	8.58	8.06	10.09	11.93	11.54	8.83	8.47	7.87	8.37
	1991	7.17	6.41	6.62	6.18	7.25	8.53	7.34	6.77	7.13	8.19	15.60	18.72	9.30
	1992	7.67	7.50	7.65	7.33	9.15	8.40	7.91	9.02	13.72	13.60	13.38	11.55	10.02
	1993	12.95	7.29	7.98	7.19	7.21	8.40	9.01	8.79	9.33	12.50	13.09	15.88	9.67
1994	8.75	7.70	7.70	7.12	7.90	10.02	10.02	9.45	8.79	12.50	12.50	13.09	11.40	
Ave.	11.40	13.62	13.16	10.72	9.45	8.58	8.25	9.25	10.32	10.69	12.30	13.29	9.72	

Table IV.4.2 Monthly Average Wholesale Prices of Vegetables at Divisoria (1989 - 1994)

(Unit : Pesos / kg)

Vegetables	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
<b>Existing Vegetables</b>													
1. Tomato	6.58	3.14	4.16	5.00	6.14	7.96	9.94	9.91	11.08	9.14	13.04	13.37	8.29
2. Cabbage	7.23	7.05	8.31	8.68	10.57	10.34	9.28	11.44	14.07	13.23	13.44	8.55	10.18
3. Raddish	5.41	5.18	5.75	5.51	7.44	9.28	8.14	7.19	9.33	10.77	7.76	7.35	7.43
4. Baguio Beans	8.49	9.97	12.07	11.21	13.34	12.15	13.75	12.49	15.81	17.41	16.07	12.93	12.97
5. Sweet Potato	4.93	4.56	4.38	4.15	4.14	3.97	4.24	5.96	6.06	5.70	5.80	6.91	5.07
<b>Existing Vegetables</b>													
6. Ampalaya	8.09	7.15	7.62	6.94	8.04	9.24	9.65	9.84	11.32	13.36	12.89	10.16	9.53
7. Cucumber	9.06	6.65	8.19	7.52	8.01	5.82	5.86	7.66	3.86	3.52	5.97	5.88	6.50
8. Eggplant	9.30	6.21	5.52	5.10	5.72	5.96	8.28	10.58	10.59	10.34	15.39	11.83	8.74
9. Green Pepper	50.90	45.15	22.10	14.30	18.15	24.22	20.01	22.07	47.56	47.24	84.91	46.55	36.93
10. Okra	9.02	8.95	8.15	5.76	6.83	4.82	4.98	7.17	7.48	9.14	10.67	10.56	7.79
11. Squash	4.93	4.49	4.72	4.65	4.92	4.07	4.45	8.49	8.32	6.11	7.69	11.37	6.18
12. Upo	5.01	4.11	3.96	3.44	4.81	3.11	3.78	6.31	5.28	4.51	5.16	5.81	4.61
13. Water Melon	19.40	17.34	21.55	21.13	-	-	-	-	-	-	-	-	19.86
14. Califlower	7.80	6.78	8.45	10.97	24.32	-	-	37.44	34.98	42.88	37.71	12.81	22.41
15. Celery	26.85	23.49	14.37	13.07	12.47	13.94	19.14	22.63	36.20	25.00	38.00	35.93	23.42
16. Chinese Cabbage	16.03	15.36	17.47	16.61	17.48	19.90	19.78	20.75	30.43	25.01	21.73	15.30	19.65
17. Lettuce	23.49	21.60	13.68	17.01	21.51	22.97	10.19	24.26	27.62	28.88	30.47	16.00	21.47
18. Pechay	6.29	5.78	5.67	5.83	7.65	7.68	7.93	9.41	11.12	11.20	9.16	7.50	7.94
19. Peanuts	27.84	28.37	27.52	27.13	27.34	25.10	23.74	24.18	24.34	24.20	24.10	25.09	25.75
20. Sitao	12.09	11.54	12.58	12.16	11.18	10.80	13.19	12.19	11.69	12.28	13.62	13.24	12.21
21. Sweet Peas	26.80	27.04	26.96	29.11	41.19	36.65	34.06	43.48	48.56	60.13	44.88	53.91	39.40
22. Carrot	11.03	9.31	10.31	11.18	15.26	13.86	16.84	18.02	19.99	17.27	21.57	14.09	14.89
23. Garlic	94.18	70.90	52.39	51.68	55.55	71.45	79.54	85.73	87.64	90.80	93.49	98.64	77.67
24. Ginger	9.90	9.24	9.40	9.85	11.63	13.04	14.01	16.00	15.62	12.02	10.52	12.21	11.95
25. Irish Potato	10.71	8.85	8.48	7.59	8.25	8.58	8.27	9.25	10.32	10.69	12.30	13.29	9.72

Source: Bureau of Agricultural Statistics, Department of Agriculture, Manila

Table IV 4.3 Comparison between Wholesale Prices at Divisoria Market, Manila and Ex-Trading Post Prices at La Trinidad, Benguet

(Unit : Peso/Kg)

Market	Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
<b>Cabbage</b>	(1) Wholesale Prices at Divisoria Market	3.95	4.13	6.39	11.02	14.13	18.80	18.82	15.61	15.51	12.22	13.56	8.13	11.86
	1990	7.23	8.93	12.32	8.09	7.92	10.26	6.99	15.92	20.52	13.28	9.83	6.88	10.68
	1991	8.57	5.80	5.57	6.65	11.67	11.23	7.70	5.82	12.18	14.50	15.84	12.69	9.85
	Ave.	6.58	6.29	8.09	8.59	11.24	13.43	11.17	12.45	16.07	13.33	13.08	9.23	10.80
(2) Ex-Trading Prices at La Trinidad	1990	3.33	3.09	5.67	9.85	12.16	17.66	9.21	12.73	12.52	11.40	11.19	7.01	9.65
	1991	6.15	7.76	10.75	5.90	6.65	8.05	5.75	14.75	17.95	11.25	6.90	6.45	9.03
	1992	7.17	5.68	4.03	4.79	10.29	10.38	-	3.21	6.45	13.35	15.15	12.43	8.45
	Ave.	5.55	5.51	6.82	6.85	9.70	12.03	7.48	10.23	12.31	12.00	11.08	8.63	9.02
(3) Ratio = (2) / (1)	1990	84.3%	74.8%	88.7%	89.4%	86.1%	93.9%	48.9%	81.6%	80.7%	93.3%	82.5%	86.2%	82.5%
	1991	85.1%	86.9%	87.3%	72.9%	84.0%	78.5%	82.3%	92.7%	87.5%	84.7%	70.2%	93.8%	83.8%
	1992	83.7%	97.9%	72.4%	72.0%	88.2%	92.4%	-	55.2%	53.0%	92.1%	95.6%	98.0%	81.9%
	Ave.	84.3%	86.5%	82.8%	78.1%	86.1%	88.3%	65.6%	76.5%	73.7%	90.0%	82.8%	92.6%	82.3%
<b>Carrot</b>	(1) Wholesale Prices at Divisoria Market	6.63	6.05	7.12	9.49	13.63	18.62	23.80	26.28	15.17	8.09	10.34	9.87	12.92
	1990	10.59	8.59	9.04	9.97	11.32	13.77	13.47	14.54	16.21	19.06	13.89	10.32	12.56
	1991	9.05	8.26	13.10	14.10	16.22	18.03	21.84	16.94	22.59	20.36	19.90	26.45	17.24
	Ave.	8.76	7.63	9.75	11.19	13.72	16.81	19.70	19.25	17.99	15.84	14.71	15.55	14.24
(2) Ex-Trading Prices at La Trinidad	1990	4.00	4.37	5.84	-	13.06	19.09	16.85	18.30	10.22	7.15	9.11	7.23	10.47
	1991	6.27	5.27	6.35	7.55	7.75	10.30	11.77	11.05	16.30	15.50	8.15	7.25	9.46
	1992	6.23	7.18	10.34	9.49	12.05	15.95	8.91	11.49	11.60	16.82	18.14	20.19	12.37
	Ave.	5.50	5.61	7.51	8.52	10.95	15.11	12.51	13.61	12.71	13.16	11.80	11.56	10.71
(3) Ratio = (2) / (1)	1990	60.3%	72.2%	82.0%	-	95.8%	102.5%	70.8%	69.6%	67.4%	88.4%	88.1%	73.3%	79.1%
	1991	59.2%	61.4%	70.2%	75.7%	68.5%	74.8%	87.4%	76.0%	100.6%	81.3%	58.7%	70.3%	73.7%
	1992	68.8%	86.9%	78.9%	67.3%	74.3%	88.5%	40.8%	67.8%	51.4%	82.6%	91.2%	76.3%	72.9%
	Ave.	62.8%	73.5%	77.1%	71.5%	79.5%	88.6%	66.3%	71.2%	73.1%	84.1%	79.3%	73.3%	75.0%

Source: Wholesale prices at Divisoria (1990-1992); Bureau of Agricultural statistics  
Ex-Trading post prices (1990-1992); Provincial Agricultural Office, Benguet

Table IV.4.4 Estimated Monthly Ex-Trading Post Prices of Vegetables in the Study Area

(Unit : Pesos / kg)

Vegetables	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
<b>Existing Vegetables</b>													
1. Tomato	4.94	2.36	3.12	3.75	4.61	5.97	7.46	7.43	8.31	6.86	9.78	10.03	6.22
2. Cabbage	5.42	5.29	6.23	6.51	7.93	7.76	6.96	8.58	10.55	9.92	10.08	6.41	7.64
3. Raddish	4.06	3.89	4.31	4.13	5.58	6.96	6.11	5.39	7.00	8.08	5.82	5.51	5.57
4. Baguio Beans	6.37	7.48	9.05	8.41	10.01	9.11	10.31	9.37	11.86	13.06	12.05	9.70	9.73
5. Sweet Potato	3.70	3.42	3.29	3.11	3.11	2.98	3.18	4.47	4.55	4.28	4.35	5.18	3.80
<b>Existing Vegetables</b>													
6. Ampalaya	6.07	5.36	5.72	5.21	6.03	6.93	7.24	7.38	8.49	10.02	9.67	7.62	7.14
7. Cucumber	6.80	4.99	6.14	5.64	6.01	4.37	4.40	5.75	2.90	2.64	4.48	4.41	4.88
8. Eggplant	6.98	4.66	4.14	3.83	4.29	4.47	6.21	7.94	7.94	7.76	11.54	8.87	6.55
9. Green Pepper	38.18	33.86	16.58	10.73	13.61	18.17	15.01	16.55	35.67	35.43	63.68	34.91	27.70
10. Okra	6.77	6.71	6.11	4.32	5.12	3.62	3.74	5.38	5.61	6.86	8.00	7.92	5.85
11. Squash	3.70	3.37	3.54	3.49	3.69	3.05	3.34	6.37	6.24	4.58	5.77	8.53	4.64
12. Upo	3.76	3.08	2.97	2.58	3.61	2.33	2.84	4.73	3.96	3.38	3.87	4.36	3.46
13. Water Melon	14.55	13.01	16.16	15.85									14.89
14. Califlower	5.85	5.09	6.34	8.23	18.24			28.08	26.24	32.16	28.28	9.61	16.81
15. Celery	20.14	17.62	10.78	9.80	9.35	10.46	14.36	16.97	27.15	18.75	28.50	26.95	17.57
16. Chinese Cabbage	12.02	11.52	13.10	12.46	13.11	14.93	14.84	15.56	22.82	18.76	16.30	11.48	14.74
17. Lettuce	17.62	16.20	10.26	12.76	16.13	17.23	7.64	18.20	20.72	21.66	22.85	12.00	16.11
18. Pechay	4.72	4.34	4.25	4.37	5.74	5.76	5.95	7.06	8.34	8.40	6.87	5.63	5.95
19. Peanuts	20.88	21.28	20.64	20.35	20.51	18.83	17.81	18.14	18.26	18.15	18.08	18.82	19.31
20. Sitao	9.07	8.66	9.44	9.12	8.39	8.10	9.89	9.14	8.77	9.21	10.22	9.93	9.16
21. Sweet Peas	20.10	20.28	20.22	21.83	30.89	27.49	25.55	32.61	36.42	45.10	33.66	40.43	29.55
22. Carrot	8.27	6.98	7.73	8.39	11.45	10.40	12.63	13.52	14.99	12.95	16.18	10.57	11.17
23. Garlic	70.64	53.18	39.29	38.76	41.66	53.59	59.66	64.30	65.73	68.10	70.12	73.98	58.25
24. Ginger	7.43	6.93	7.05	7.39	8.72	9.78	10.51	12.00	11.72	9.02	7.89	9.16	8.97
25. Irish Potato	8.03	6.64	6.36	5.69	6.19	6.44	6.20	6.94	7.74	8.02	9.23	9.97	7.29

Ex-trading post prices are estimated to be 75% of the whole prices at Divisoria market.

Table IV.5.1 Registered Cooperatives in Region IV  
(As of June 1994)

PROVINCE	TYPE OF COOPERATIVE											TOTAL
	CREDIT COOP.	CONSUMERS COOP.	PRODUCERS COOP.	MARKETING COOP.	SERVICES COOP.	MULTI-PURPOSE	LAB COOP.	FEDERATION COOP.	UNION COOP.	CREDIT RURAL BANK	TOTAL	
1. AURORA	2	0	1	0	1	93	0	1	0	0	98	
2. BATANGAS	39	10	6	10	7	364	0	6	1	1	444	
3. CAVITE	50	4	2	11	8	243	0	4	1	1	324	
4. LAGUNA	31	11	8	7	19	462	0	7	2	1	548	
5. MARINDUQUE	2	2	0	1	0	129	0	0	0	0	134	
6. OCC. MINDORO	5	1	2	3	6	278	0	6	1	0	302	
7. OR. MINDORO	9	2	0	1	2	157	0	2	1	0	174	
8. PALAWAN	10	4	3	12	4	277	0	4	1	0	315	
9. QUEZON	46	3	3	3	8	423	1	3	1	1	492	
10. RIZAL	29	4	26	2	15	313	0	3	1	0	393	
11. ROMBLON	0	0	1	1	1	112	0	1	0	0	116	
TOTAL	223	41	52	51	71	2,851	1	37	9	4	3,340	

Source: Cooperative Development Authority, Region IV



**Table IV.5.2 List of the Cooperatives Organized in 3 Municipalities  
(As of December 1993)**

(1/2)

Name of cooperative	Resistration			
	Type	Number	Date	Adress
<b>NAGCARLAN, Laguna</b>				
1. Talahib Multi-Purpose Coop.	Agric'l	MLA-1641	1991 Oct 16	Talahib, Nagcarlan
2. Koop sa Alumbrado na Pumapan day sa Ikauunladng Tao (KAPIT).	Agric'l	MLA-0992	1991 Jul 29	Alumbrado, Nagcarlan
3. Abo Multi-Purpose Coop, Inc.	Agric'l	MLA-2098	1991 Nov 29	Brgy. Abo, Nagcarlan
4. Cooperative Multi-Purpose of Sta. Lucia	Agric'l	MLA-0048	1992 May 04	Sta. Lucia, Nagcarlan
5. Masilayan Multi-Purpose Coop.	Agric'l	LGA-634	1991 Mar 08	Brgy. Malinao, Nagcarlan
6. Manaol MP Coop., Inc.	Agric'l	LGA-495	1991 Feb 28	Manaol, Nagcarlan
7. Malaya MP Coop., Inc.	Agric'l	MLA-1488	1991 Oct 01	Brgy. Malaya, Nagcarlan
8. Nagcarlan Public Market Vendors MP Non-Agric'l Coop., Inc.	Non-Agric'l	MLA-0613	1991 Jan 06	Nagcarlan
9. Taytay MP Coop., Inc.	Agric'l	MLA-1489	1991 Oct 01	Brgy. Taytay, Nagcarlan
10. Silangang Napapatid MP Coop. Inc. (SNMPCI)	Agric'l	MLA-1874	1991 Nov 07	Silangang Napapatid, Nagcarlan, Laguna
11. San Francisco MP Coop., Inc.	Agric'l	MLA-1628	1991 Oct 14	Brgy. San Frabeisco
12. SAMABA Multi-Purpose Coop., Inc.	Agric'l	MLA-0874	1991 Jul 04	Brgy. Bucal, Nagcarlan
13. RINALISA Transport Service Coop., Inc.	Service	MLA-C-0423	1991 Mar 27	Nagcarlan
14. Ang Koop. ng mga Mangingisda sa Lawa ng Yambo (AKOMALAYA)	Agric'l	MLA-1916	1991 Nov 12	Sitio Yambo, Brgy, Sulsuguin, Nagcarlan
15. OPLES MP Coop., Inc.	Agric'l	MLA-2254	1991 Dec 20	Brgy. Oples, Nagcarlan
16. LAWAGUIN MP Coop., Inc.	Agric'l	MLA-0741	1991 Jan 21	Brgy. Lawaguin, Nagcarlan
17. WESTERN MP Cooperative	Agric'l	LGA-1223	1993 Oct 21	Nagcarlan, Laguna
18. Samahan ng mga Barangay sa Kabuhayan MP Cooperative	Agric'l	LGA-0680	1993 Jan 05	Silangang Kabuhayan
19. Sabang Primary MP Coop., Inc.	Agric'l	LGA-0782	1993 Feb 12	Sabang, Nagcarlan
20. Brgy. Ynkos MP Coop., Inc.	Agric'l	LGA-0930	1993 May 06	Brgy. Yucos, Nagcarlan
21. San Macos MP Coop., Inc.	Agric'l	LGA-0865	1993 Mar 23	Buboy, Nagcarlan

**Table IV.5.2 List of the Cooperatives Organized in 3 Municipalities  
(As of December 1993)**

(2/2)

Name of cooperative	Resistration			
	Type	Number	Date	Adress
<b>LILIW, laguna</b>				
1. Kaunlaran sa Liliw MPCl	up-agr'l	LGA-0040	1992 Apr 29	Kanlurang Bucal, Liliw
2. Samahang Manulad na Babuyan ng Liliw MPC, Inc.	up-agr'l	MLA-0523	1991 May 30	Liliw, Laguna
3. Magtatanim ng Gulay ng Liliw MPC, Inc.	up-agr'l	MLA-1111	1991 Apr 03	Brgy. Novaliches
4. Kaunlaran sa Banahaw MPC	up-agr'l	LGA-1917	1993 Apr 27	Liliw, Laguna
5. Liliw MPCl	up-agr'l	LGA-1918	1993 Apr 27	Liliw, Laguna
6. Sules MPC	up-agr'l	LGA-0740	1993 Feb 01	Municipal Hall, Liliw
7. Liliw Stall Holders MPC	Non-Agric'l	LGA-0694	1993 Jun 08	Public Market, Liliw
<b>MAJAYJAY, Laguna</b>				
1. Kooperatiba Kapit-Bisig ng Majayjay	Agric'l	MLA-0240	1991 Apr 30	Majayjay
2. Balikatan MPC Inc.	Agric'l	MLA-1773	1991 Oct 28	Brgy. Balayong, Majayjay
3. Brgy. Original Livelihood Dev't. System MPCl	Agric'l	MLA-0272	1991 May 03	Majayjay
4. Piit Multi-Purpose Coop.	Non-Agric'l	MLA-1724	1991 Oct 22	Piit, Majayjay
5. Malinaw Multi-Purpose C	Agric'l	MLA-1775	1991 Oct 28	Rizal Brgy. Hall, Majayjay
6. Samahan Maghahalaman at Paghahayupan MPC, Inc.	Agric'l	MLA-1731	1991 Oct 23	Brgy. Malinao, Majayjay
7. Green 1 B MPC, Inc.	Agric'l	MLA-1776	1991 Oct 28	Brgy. Ibabang Banga
8. Maimpis MPC, Inc.	Agric'l	MLA-1770	1991 Oct 28	Brgy. Panglan, Majayjay
9. Samahan ng Magbubukid MPC	Agric'l	MLA-1723	1991 Oct 22	May-it, Majayjay
10. Brgy. Pangil Samahan ng Maliit na Magniniyog MPC	Agric'l	MLA-0179	1991 Apr 22	Brgy. Pangil, Majayjay
11. Koop. ng mga Magsasakang Kalahok sa Produksiyon na may Adhikain sa Kaunlaran	Agric'l	MLA-C-0737	1991 Jun 06	Majayjay
12. Banahaw Multi-Purpose Coop.	Agric'l	MLA-0178	1991 Apr 22	Majayjay Mun. Hall
13. Mangagawa sa Ikauunlad ng Pamayanan (MASIKLAP) MPCl	Agric'l	MLA-0706	1991 Jun 14	Brgy. OOBi, Majayjay
14. Gabay sa Kaunlaran MPCl	Agric'l	MLA-1725	1991 Oct 22	Brgy. Bitaoy, Majayjay

Table IV.5.3 Cooperative Activities in the Study Area

(1/2)

No.	Name of Cooperative	Type	Registration		No. of Members	No. of Staff	Members of Board
			Number	Date			
	Nagcarlan						
1	Masilayan Multi-Purpose Coop.	Agric'l	LGA-634	1991 Mar 08	120	6	9
2	Abo Multi-Purpose Coop, Inc.	Agric'l	MLA-2098	1991 Nov 29	93	-	7
3	Silangang Napapatid MP Coop. Inc. (SNMPCI)	Agric'l	MLA-1874	1991 Nov 07	68	1	5
4	San Francisco MP Coop., Inc.	Agric'l	MLA-1628	1991 Oct 14	35	3	7
5	SAMABA Multi-Purpose Coop., Inc.	Agric'l	MLA-0874	1991 Jul 04	70	rotation	9
	Liliw						
6	Magtatanim ng Gulay ng Liliw MPC, Inc.	up-agr'l	MLA-1111	1991 Apr 03	115		7
7	Kaunlaran sa Banahaw MPC	up-agr'l	LGA-1917	1993 Apr 27	94		9
	Majayjay						
8	Banahaw Multi-Purpose Coop.	Agric'l	MLA-0178	1991 Apr 22	88	3	7
9	Samahan Maghahalaman at Paghahayupan MPC, Inc.	Agric'l	MLA-1731	1991 Oct 23			

Source: The data collected by JICA Study Team at the Study area

Table IV.5.3 Cooperative Activities in the Study Area

(2/2)

Name of Cooperatives	Main Activities	Annual Budget		Membership		Loan		
		P	P	Fee	Amount	Term	Interest	No. of User
Nagcarlan Masilayan Multi-Purpose Coop.	Hog fattening, Feeds supply, LPG store	100,000	260	260	1,025,000	6 month	20% a year	22
Abo Multi-Purpose Coop, Inc.	No activity at present	-	-	-	160,000	3 years	20%	120
Silangang Napapatid MP Coop. Inc. (SNMPCI)	Feeds & Seeds store	13,159	80	80	-	-	-	-
San Francisco MP Coop., Inc.	Fertilizer store, Cabling production	34,000	10	10	27,000	4 years	-	35
SAMABA Multi-Purpose Coop., Inc.	Seeds & Chemical store	34,000	20	20	-	-	-	-
Liliw Magtatanim ng Gulay ng Liliw MPC, Inc.	Farm input supply, Transport service	18,800	100	100	1,080,000	-	20%	90
Kaunlaran sa Banahaw MPC	Farm input supply, Credit	66,000	50	50	336,000	-	24%	28
Majayjay Banahaw Multi-Purpose Coop.	Passion fruit production, Loan	227,520	20	20	125,000	-	-	-
Samahan Maghahalaman at Paghahayupan MPC, Inc.	No activity at present	-	-	-	-	-	-	-

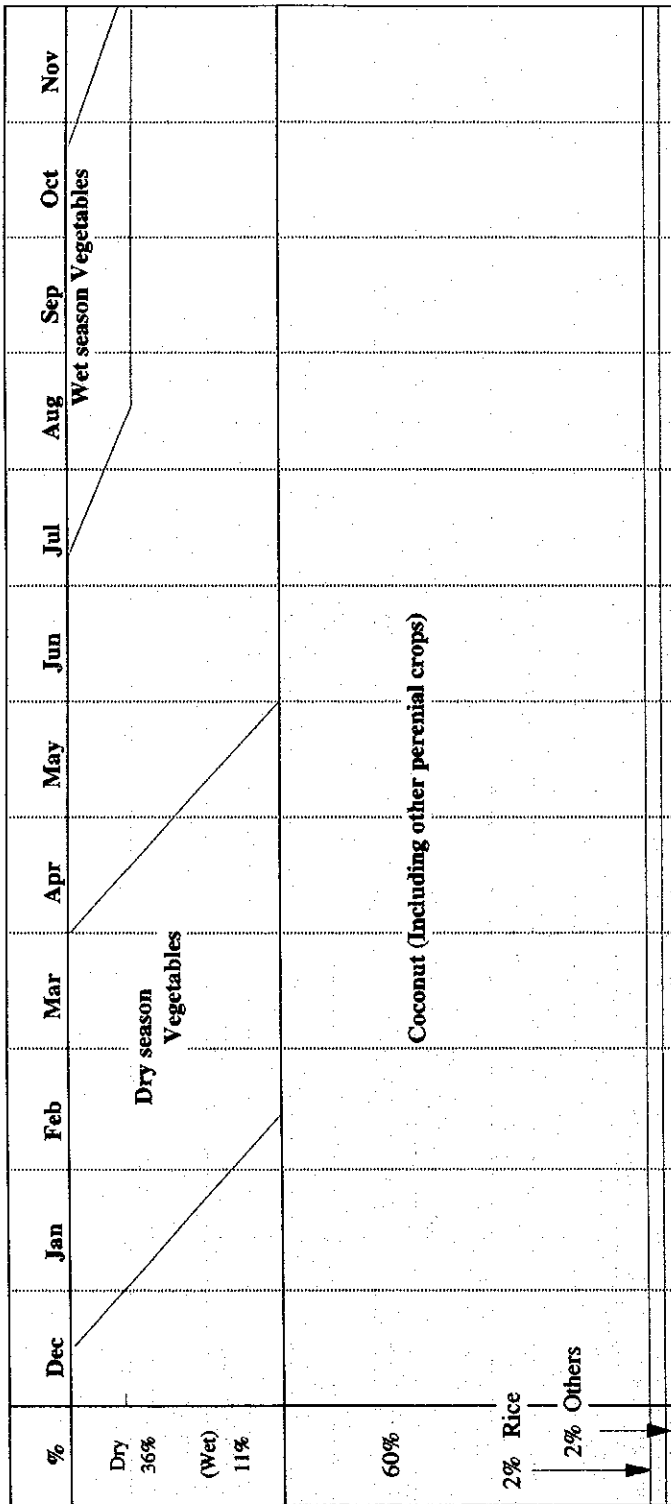
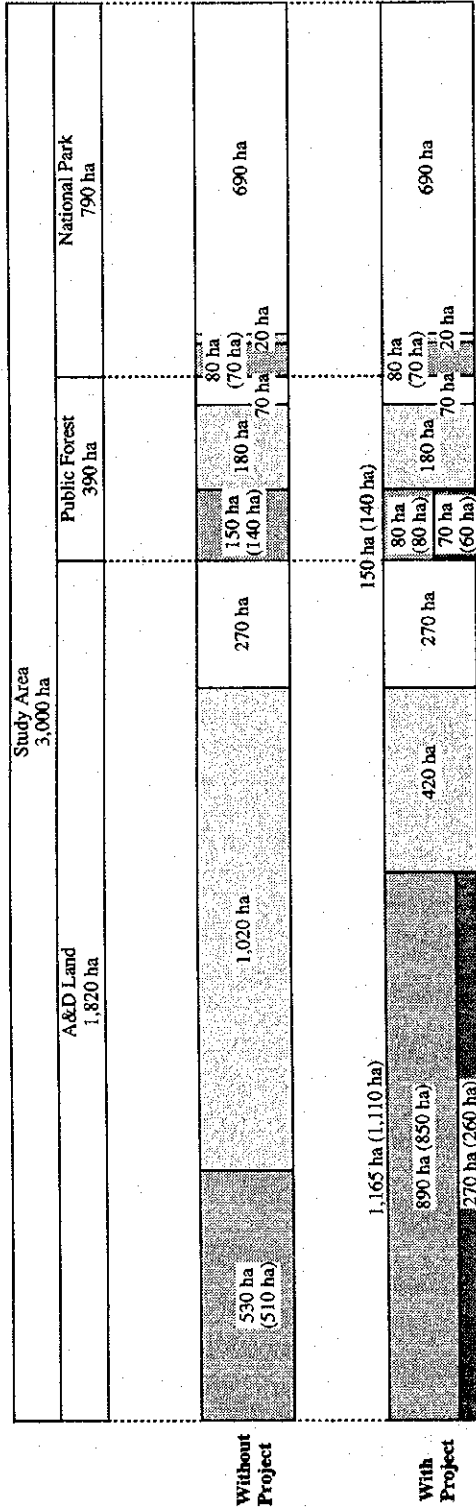


Fig. IV.1.1 Present Cropping Pattern in the Study Area

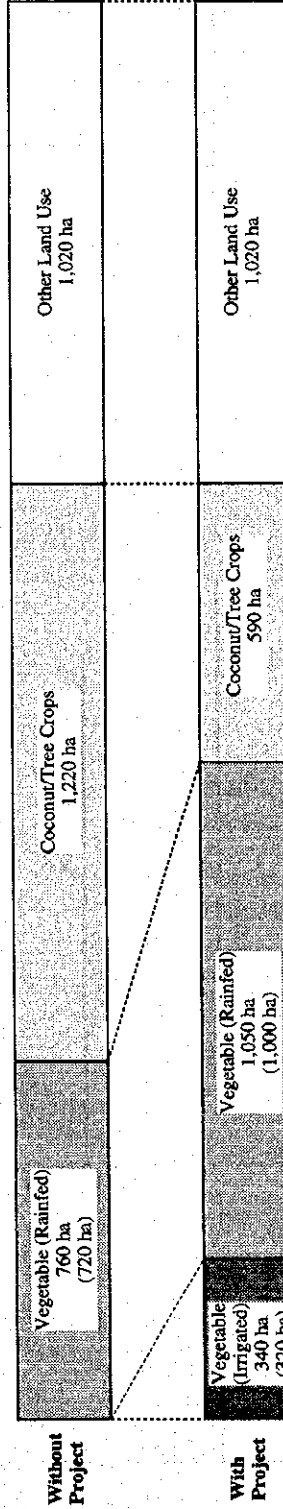
Type	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
				Tomato 60%					Cabbage (wet) 10%			
				Cabbage 20%								
				Radish 10%								
			Baguio Beans 10%									
										Sweet Potato 20%		

Fig. IV.1.1.2 Present Cropping Pattern of Vegetables in the Study Area (720ha)

**Land Use (by Land Status)**



**Land Use (Total)**



- Legend:**
- Vegetable (Irrigated)
  - Vegetable (Rainfed)
  - Coconut/Tree Crops
  - Other Land Use

Remarks: Numbers in ( ) show Net Area for vegetable cropping.

**Fig. IV.1.3 Future Land Use Plan**

A

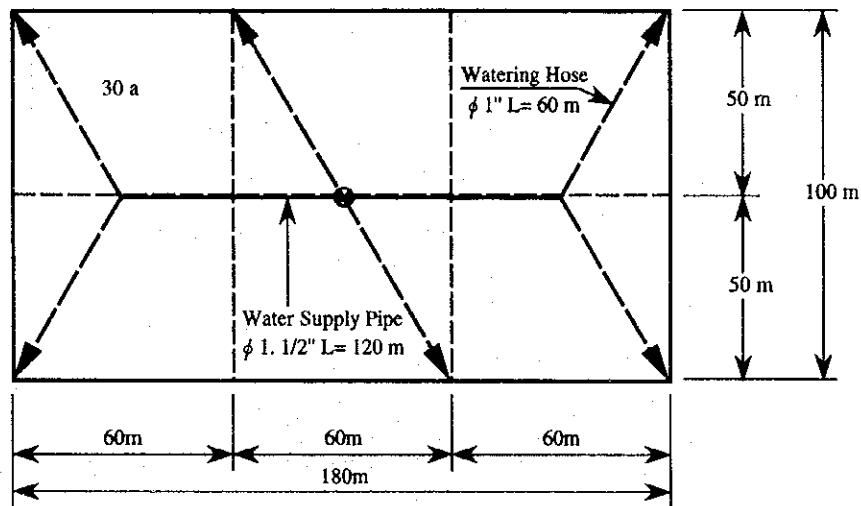
Type	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
1 30%			Sitao			Tomato					Carrot	
2 10%		Celery			Cabbage					Lettuce		
3 20%		Chinese Cabbage				Tomato				Sweet Potato		
4 10%		Baguio Beans				Cabbage				Cauliflower		
5 20%		Sitao				Radish			Cabbage (Wet)			
6 10%		Chinese Cabbage				Cabbage				Sweet Potato		

Fig. IV.1.4 Proposed Cropping Pattern of Vegetables in the Irrigated Area ( 320ha)

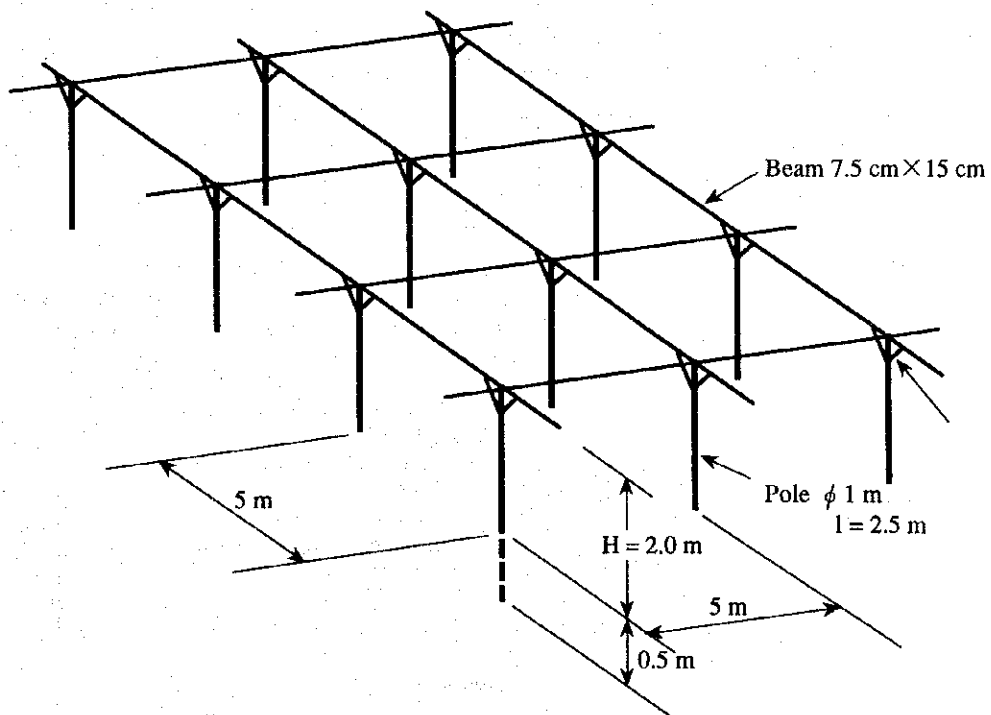


Type	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
1 30%	Sweet Potato				Tomato						Sweet Potato	
2 20%					Tomato					Cabbage Wet		
3 20%					Cabbage					Sitao		
4 10%					Radish					Sitao		
5 10%					Radish					Lettuce		
6 10%					Baguio Beans					Carrot		

Fig. IV.1.5 Proposed Cropping Pattern of Vegetables in the Rainfed Area (330ha+600ha)



(1) Terminal Irrigation Block



(2) Rain Protection Materials

Fig. IV.3.1 The Structures of Farming Materials

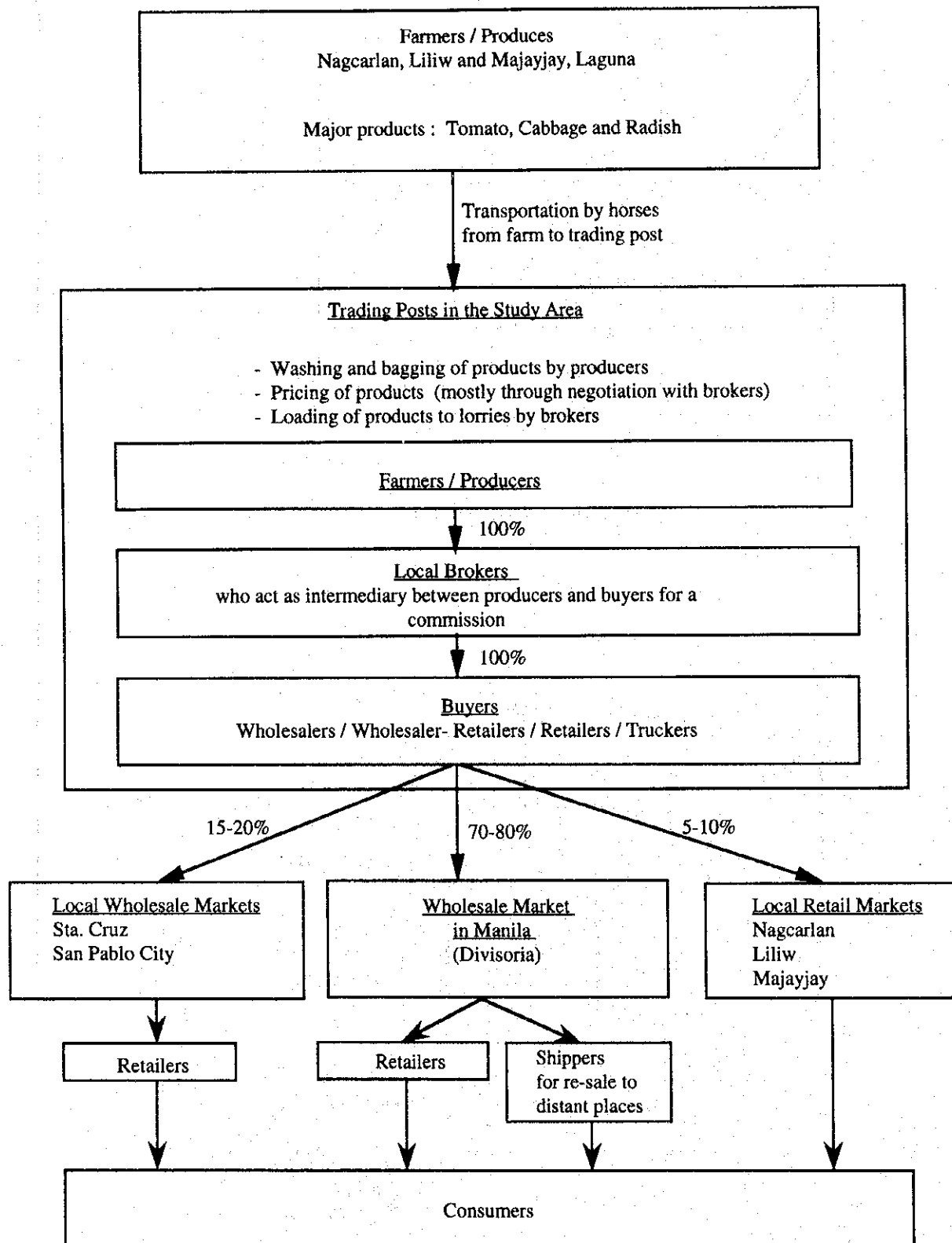
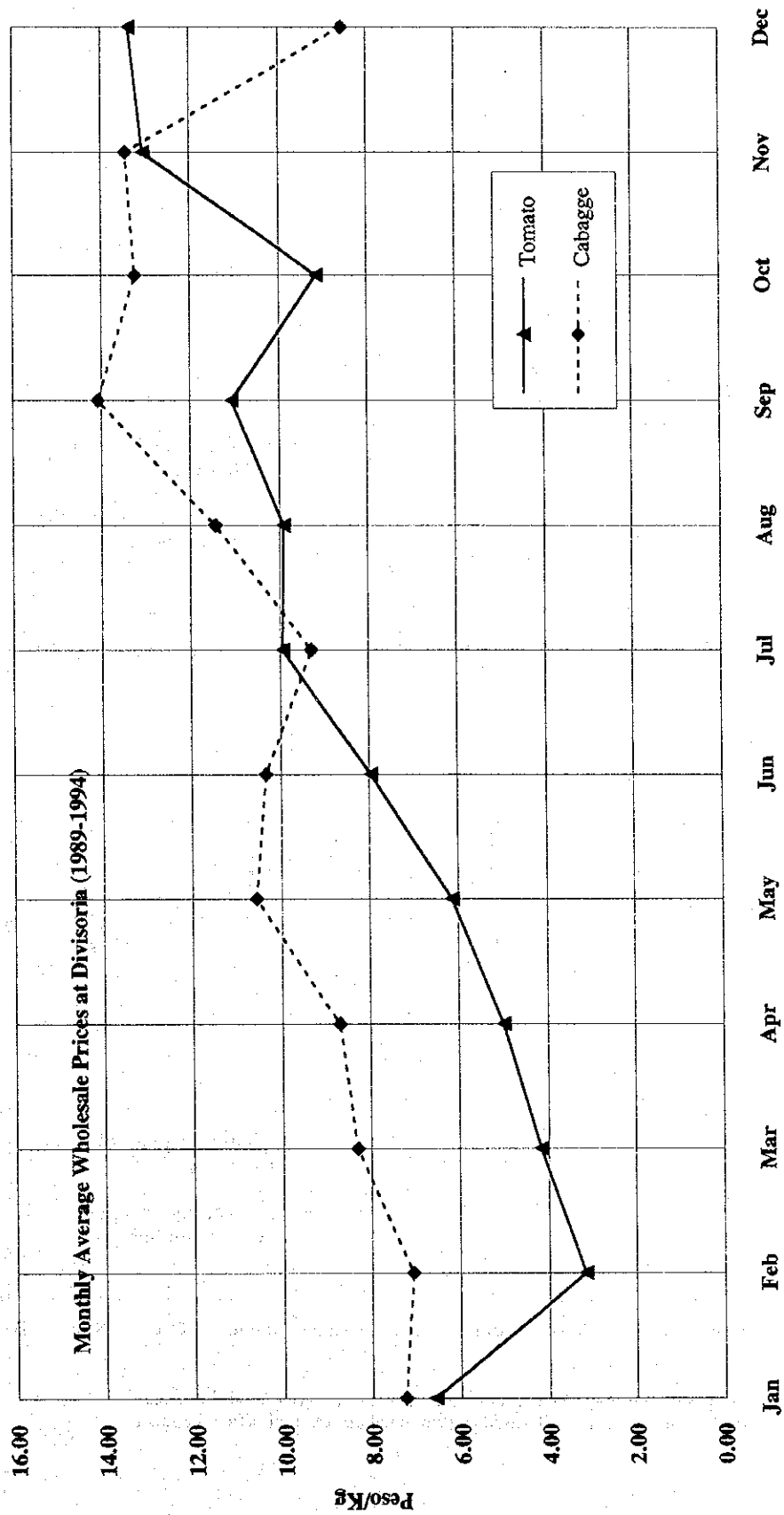
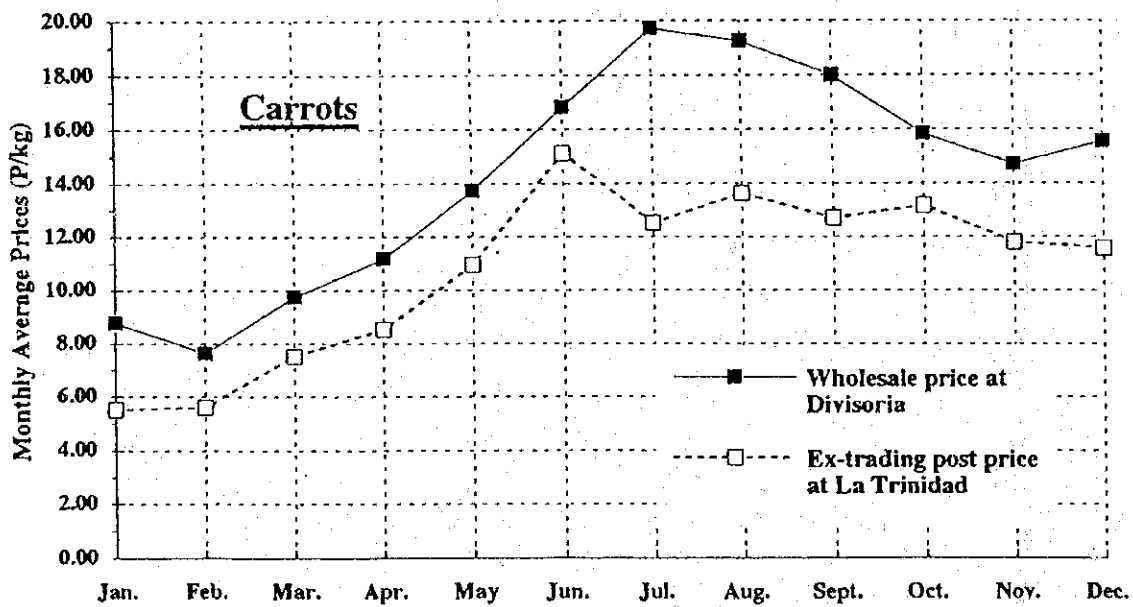
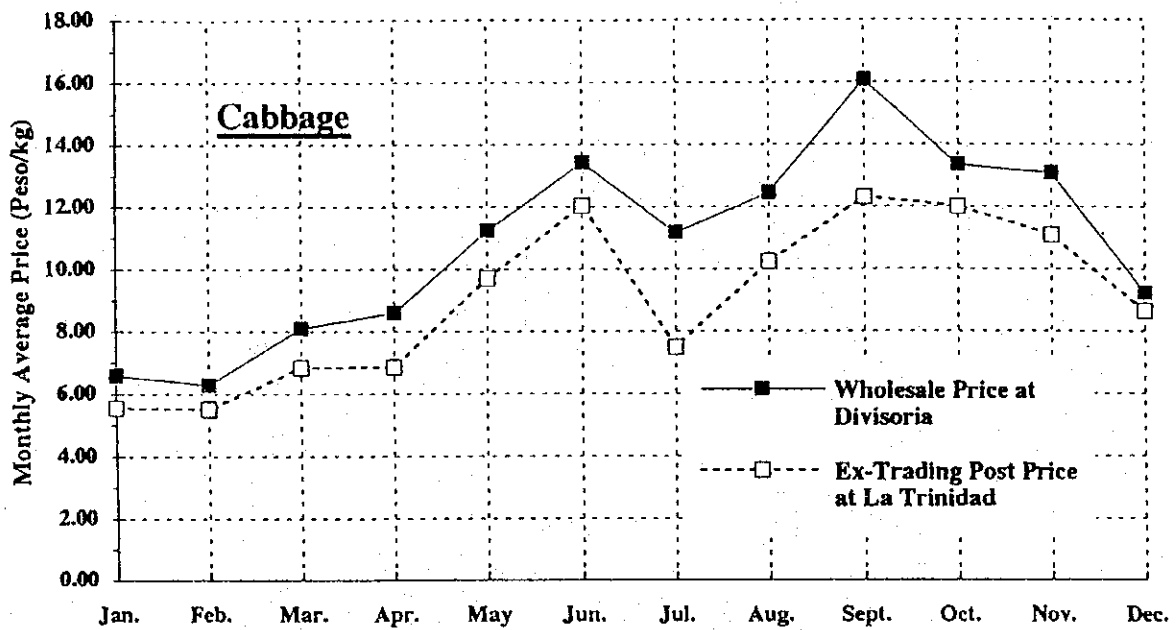


Fig. IV.4.1 Marketing Channels of Vegetables in the Study Area



Source: Bureau of Agricultural Statistics, Department of Agriculture

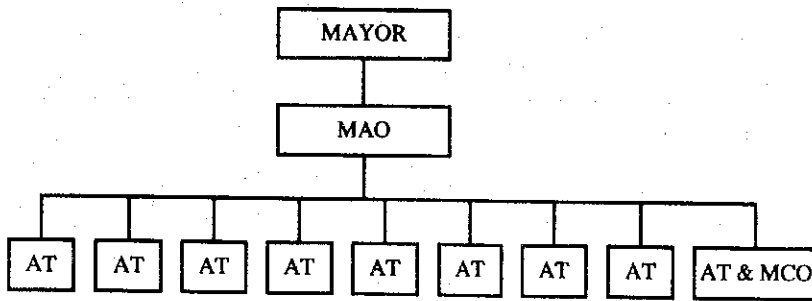
Fig. IV.4.2 Seasonal Fluctuation of Wholesale Prices at Divisoria Market, Manila (1989-1994)



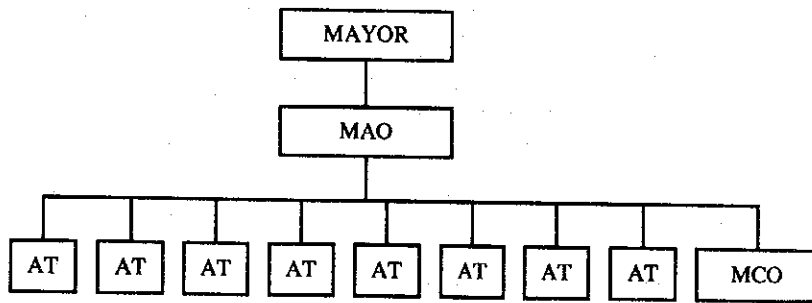
Source: Wholesale prices at Divisoria market; Bureau of Agricultural Statistics  
 Ex-Trading prices at La Trinidad; Provincial agricultural office, Benguet

**Fig. IV.43 Comparison between Wholesale Prices at Divisoria Market, Manila and Ex-trading Post Prices at La Trinidad, Benguet**

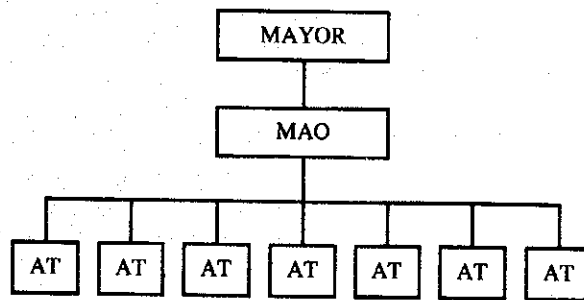
1. Nagcarlan



2. Liliw

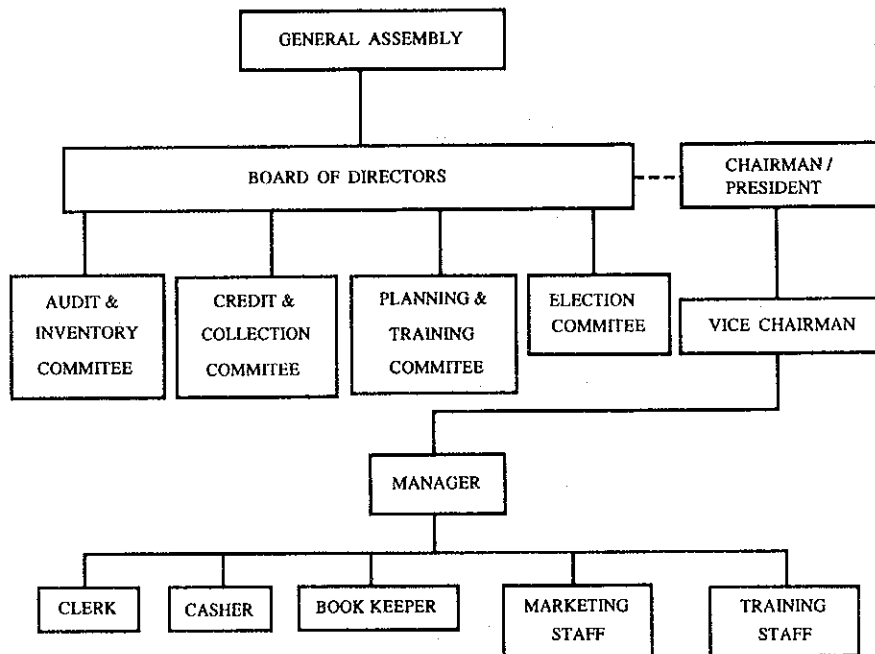


3. Majayjay

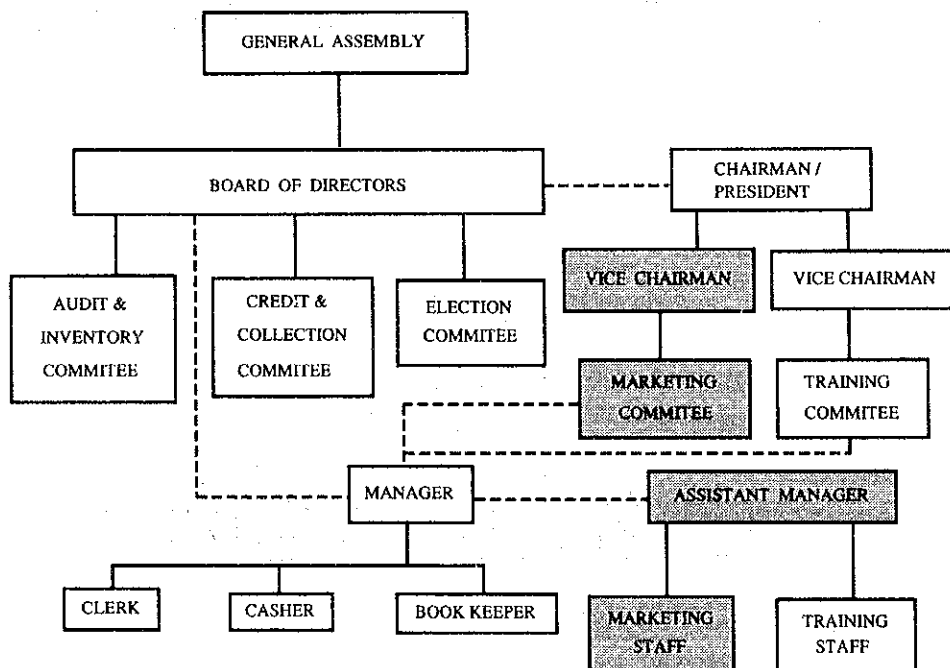


MAO : Municipal Agricultural Officer  
AT : Agricultural Tecnologist  
MCO : Municipal Cooperative Officer

Fig. IV.5.1 Organization Chart of Agricultural Extension of Each Municipality



### 1. New Marketing Cooperatives



(The unshaded portion is a typical organization of existing cooperative and the shaded portion is the additional proposed organization for marketing activities.)

### 2. Reorganization of existing cooperatives

**Fig. IV.5.2 Organization Chart of Recommendable Agricultural Cooperative**

**FEASIBILITY STUDY ON  
THE UPLAND IRRIGATION AND  
RURAL DEVELOPMENT PROJECT  
IN SOUTHERN LUZON**

**APPENDIX-V**

**FARMERS' HOUSEHOLD SURVEY**





**FEASIBILITY STUDY  
ON  
THE UPLAND IRRIGATION AND RURAL DEVELOPMENT PROJECT  
IN SOUTHERN LUZON**

**APPENDIX-V  
FARMERS' HOUSEHOLD SURVEY**

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## **APPENDIX-V FARMERS' HOUSEHOLD SURVEY**

### **1 Methodology**

A pre-listing of the households farming in the Study area was done to ascertain the number as well as the actual area cultivated by each. From the pre-listed households a sample of 103 was drawn and eventually interviewed.

The interviews of the sampled respondents were eventually conducted by the enumerators who were previously trained in the use of the especially-prepared survey form based on the JICA Study team format, advice, guidelines, and approval.

To facilitate the conduct of the survey, arrangements were made with the mayors of the municipalities, barangay captain / chairmen, and affiliated cooperative chairmen / presidents .

Actual survey was conducted in February 1994.

### **2 Summary of Results and Implications**

- (1) The barangays and farmers of the residents thereat are not easily accessed particularly during the rainy season from June to November. Hence, the principal animal of burden is the horse which doubles up for the farmers to ride horseback and to transport their products down from the more elevated and less accessible farm lands. This condition has been clearly perceived and expressed by the respondent farmers by suggesting a high priority for farm-to-market road.
- (2) The cultivated areas are basically small plots using existing production technologies with quite variable results both in terms of production rates and net returns for the various crop enterprises in the area. As perceived by the farmers, a major factor for the highly variable production rates and small-size farm plots is the inadequate and undeveloped irrigation infrastructure in the area. Indeed, they gave this the highest priority in terms of increasing their current rates of production.
- (3) Annual crop performance in particular and family income generating capacity in general were varied among the households surveyed. Generally, however, the surveyed farmers' households generated income above the national and regional poverty thresholds.
- (4) Surely, providing the irrigation facilities and the farm-to-market roads must be justified by the increase in aggregate productivity, income and welfare of the farmers in the area. Increased productivity requires, however, improvements in existing production technologies, credit financing, marketing and institutional arrangements.

They have also indicated willingness to accept specific recommendations to improve their performance at the enterprise level such as new varieties. This may imply the need for a closely interlinked applied research-demonstration-extension activities to be undertaken in the area with the farmers directly involved.

- (5) Local market facilities, marketing arrangements, price information systems must be designed, installed and effectively managed, as needed, to be directly linked to the local production program and even if necessary to the regional or national as well.
- (6) The summary of the result of the survey are shown in following tables with some comments in the notes. Despite of the earnest interview, there were some inconsistent answers in the result of the survey. The contents of the following tables don't necessarily correspond to all items of the questionnaire attached at the end, because unreliable data were eliminated.

**Table V.2.1 Accessibility of the Study Area**

	Accessibility	Number of Barangays
1	Not Accessible by Moter Vehicles	1
2	Accessible by Jeepney	14
3	Accessible by Truck	14

Note: Of the 15 Barangays in the Study area, all except one were accessible by motor vehicle passable road. However, travel on foot from one barangay to another was still necessary for this survey.

**Table V.2.2 Accessibility of Farms**

<b>Not Accessible to Motorized Transport</b>		
	Number of Respondents	82
	Distance to Motor Vehicle-Passed Road	2.4 km
<b>Accessible to Motorized Transport</b>		
	By Jeepney	19
	By Trucks	2
<b>Distance of Farm to Market</b>		
	To Local Market	2 km
	To Metro-Manila Market	107 km

**Table V.2.3 Adequacy and Quality of Domestic Water Supply  
(Number of Household)**

Water Supply	Adequate And Safe	Inadequate But Safe	Not Applicable
Piped Water	76	4	23
Spring Water	21	1	81
River / Stream	15	0	88

Note: The principal source of the domestic water supply was piped water and additional sources were spring and river/stream. Regardless of the source, the respondents perceived that their domestic water supply was safe and adequate.

**Table V.2.4 Availability of Electricity**

Availability	Number of Respondents	Percent of Total
Not Available	0	0
Available	103	100
24.0 hours	101	98
23.5 hours	2	2

**Table V.2.5 Household Head (The Respondent)**

Items	Number of Respondents	Percent of Total
<b>Sex:</b>		
Male	99	96.1 %
Female	4	3.9
<b>Age:</b>		
Less than 30 Years	5	4.8
30 to 39	18	17.5
40 to 49	36	35.0
50 to 59	24	23.3
60 and above	17	16.5
No age indicated	3	2.9
<b>Highest Educational Attainment:</b>		
None	7	6.8
Elementary	63	61.2
Secondary	25	24.3
Vocational	2	1.9
Tertiary	6	5.8
<b>Local Off/Non-Farm</b>		
<b>Economic Activities:</b>		
Agricultural	69	67.0
Non-Agricultural	0	
Combined Agricultural and Non-Agricultural	34	33.0

**Table V.2.6 Household Characteristics**

Size of Households (Number)	5
Households with School-Age Children (Number)	
Pre-School Level	20
Elementary Level	39
Secondary Level	35
Vocational Level	12
Tertiary Level	21
Average Number of School-Age Children Going to School per Household	2

**Table V.2.7 Land Tenure and Size of Farms**

Land Tenure Status	Number of Respondents	Total Area (ha)	Average Area (ha)
Owned Land	65	88.9	1.4
Leased / Rented Land	15	15.5	1.0
Share-Cropped Land	12	15.8	1.3
Mortgated / Loaned Land	1	1.0	1.0
Others	33	36.6	1.1
Total		157.8	1.5

Note: \* Despite of above table, it was revealed by the other survey conducted thereafter that almost of the Study area is still Public Land and most of respondents had misunderstood their land status.

\*\* There are some overlaps of the number of respondents in above table.

**Table V.2.8 Livestock and Poultry Holdings**

Kind	Number of Respondents	Number of Heads	
		Heads	Average
Horse	48	60	*a
Carabao	8	9	a
Cattle	3	5	a
Goat	1	2	a
Swine	28	166	1.6
Chicken	43	436	4.2

Note: \* a ' means less than one



**Table V.2.9 Average Household Income per Year**

Source of Income	Average Income (pesos)	(%)
Agricultural		
Vegetables	21,420	43
Coconuts / Tree crops	6,100	12
Livestock / Poultry	1,500	3
Non-agricultural		
Off-farm income	20,980	42
Total	50,000	100

**Table V.2.10 Average Family Living Expenditures**

Items of Expenditures	Amount in Pesos	Percent of Total
Food	21,684	50.3
Education	8,264	19.2
Housing Maintenance	2,550	5.9
Health	2,734	6.3
Electricity	1,924	4.5
Recreation	2,562	5.9
Transportation/Travel	1,742	4.0
Cooking Fuel	1,678	3.9
Total	43,138	100.0

**Table V.2.11 Membership in Local Organizations**

Items	Number of Respondents	Percent of Total
Member in:		
One Cooperative	44	42.7
Two Cooperative	4	3.9
One Other Type of Organization	5	4.8
Officer in the Organization	3	2.9
Coverage of the Organization		
Within the Barangay Only	36	35.0
Within the Municipality	14	13.6
Coverage not Indicated	3	2.9
Not a Member of Any Organization	50	48.5

**Table V.2.12 Use of Agricultural Credit**

Purpose and Source	Number of Respondents	Amount	Proportion
<b>Purpose:</b>		(pesos)	(%)
Purchase of Land	4	50,000	
Purchase of Farm Inputs	62	514,500	
Capital for Business	2	147,000	
Education of Children	1	30,000	
<b>Source:</b>			
Rural Bank	7		3.9
Commercial Bank	1		1.0
Cooperative/Credit Union	9		8.7
Government Program	31		30.1
Private Persons	17		16.5
Combinations:	3		2.9
Rural Bank/Government Program	(1)		
Government Program/Private Person	(1)		
Rural Bank and Cooperative	(1)		
<b>Interest Rate by Purpose:</b>			Interest (%)
Purchase of Land	2		15.7
Purchase of Inputs	50		7.0
Capital for Business	1		22.2
Education of Children	1		13.3

**Table V.2.13 Distribution of Vegetable Cropped Size**

Crop	Number of farms by crop size							Total
	< 0.24	0.25-0.49	0.5-0.99	1.00-1.49	1.50-1.99	2.00-2.99	3.00 <	
Tomato	10	30	33	10	3	1		87
Cabbage	10	23	15	3				51
Radish	1	3	5	1	1			11
Sweet potato	1	1	5	1				8
Baguio beans	2	4	1					7
Others	3	1	2					6
Total Vegetable	2	16	40	23	5	6	2	94
(%)	(2)	(17)	(43)	(25)	(5)	(6)	(2)	(100)
No Vegetable								9
Total Farm land	1	2	24	35	13	13	15	103
(%)	(1)	(2)	(23)	(34)	(13)	(13)	(14)	(100)

**Table V.2.14 Distribution of Unit Yield per Hectare (tons) of Main Vegetables**

Crop	Number of farms by yield per hectare (tons)							Total
	0.5tons>	0.5 - 0.9	1.0- 2.9	3.0- 4.9	5.0 - 9.9	10.0-14.9	15.0tons<	
Tomato		2	14	17	30	18	6	87
Cabbage	1	3	10	12	18	5	2	51
Radish		2	5		3		1	11
Sweet potato				1	4	3		8
Baguio beans			1	4	2			7
Others*					3	2	1	6

Note: \*Pechay, Sayote

**Table V.2.15 Distribution of Seed Application per Hectare (kg) of main vegetables**

Crop	Number of farms by seed rate (kgs/ha)							Total
	0.1kgs>	0.10-0.19	0.20-0.49	0.50-0.99	1.00-1.99	2.0-4.99	5.0kgs<	
Tomato	22	34	18	6	4	3		87
Cabbage	12	16	11	7	4	1		51
Radish		1	1	1	3	2	3	11
Sweet potato								
Baguio beans		1	2	1		2	1	7

**Table V.2.16 Distribution of Fertilizer Application per hectare (kgs,tons)**

**1. Tomato**

Fertilizer	Number of farms by applied fertilizers (kgs, tons/ha)						
	<100kgs	100-199	200-299	300-399	400-499	500kgs<	Total
Ammosul	4	15	5	10	4	13	51
Complete	14	16	7	11	5	4	57
Urea	6	7	4	5	5	5	32
Farm manure	<1.0tons	1.0-1.9	2.0-2.9	3.0-4.9	5.0-9.9	10.0tons<	Total
	17	12	11	14	6	0	60

**2. Cabbage**

Fertilizer	Number of farms by applied fertilizers (kgs, tons/ha)						
	<100kgs	100-199	200-299	300-399	401-499	500kgs<	Total
Ammosul	7	6	2	5	1	10	31
Complete	5	8	3	4	2	1	23
Urea	4	8	4	1	2	2	21
Farm manure	<1.0tons	1.0-1.9	2.0-2.9	3.0-4.9	5.0-9.9	10.0tons<	Total
	10	10	5	5	4	1	35

**Table V.2.17 Distribution of Agro-chemical Application per Hectare (lit.)**

**1. Tomato**

Crop	Number of farms by applied agro-chemicals (lit, kl/ha)							Total
	1.0lit.>	1.0-2.9	3.0-4.9	5.0-11lit.	1-4.9kl	5.0-9.9	10kl<	
Benlate	1	1		2				4
Coside			1					1
Cymbus		1	1					2
Desis	1	23	6	6				36
Dithane					11	8	8	27
Selecron	1	1	5					7
Sumicidine	1	8	7	7				23
Tamaron		2	1	2				5
Vetirapan blue					6	3	1	10

**2. Cabbage**

Crop	Number of farms by applied agro-chemicals (lit./ha)							Total
	1.0lit.>	1.0-2.9	3.0-4.9	5.0-11lit.	1-4.9kl	5.0-9.9	10kl<	
Benlate	1							1
Coside				1				1
Cymbus								0
Desis	1	4	3	3				11
Dithane					9	5	5	19
Selecron		2	2					4
Sumicidine		4	6	4				14
Tamaron		1	1					2
Vetirapan blue					4	2		6

**Table V.2.18 Perennial Crops in Average Farm**

Items	Coconut	Lanzones	Coffee	Bananas	Total
Number of Farms*	74	46	8	37	
- Per Average Farm**					
Number of Trees	68	22	11	27	
Plant Area (ha)	0.82	0.22	0.02	0.08	***1.14
Quantity (pcs)	2,900			1,474	
(kgs)		182	14.8		
Value (pesos)	2,725	2,819	66	490	6,100
Unit Price (pesos/pcs)	0.93			0.32	
(pesos/kgs)		15.4	4.5		

Note: \* Number of farms is overlaped in part.

\*\* The figures are divided by the number of total farms (103).

\*\*\* A part of planted area is overlaped each other or to other crops.

**Table V.2.19 Labor Inputs per Hectare of Main Vegetables**

Items	Tomato	Cabbage	Radish	Sweet potato	Baguio beans
<b>1 Seedbed Preparation</b>					
Man-days : Family	2.8	3.7	1.4	0.0	8.7
: Hired	0.4	0.3	0.0	0.0	0.0
Animal-days : Family	0.0	0.1	0.0	0.0	0.0
: Hired	0.0	0.0	0.0	0.0	0.0
<b>2 Land Preparation</b>					
Man-days : Family	14.3	19.8	11.0	10.4	13.0
: Hired	8.3	1.5	23.9	15.6	0.0
Animal-days : Family	0.2	0.3	0.8	0.0	0.0
: Hired	1.0	0.2	2.7	4.0	0.0
<b>3 Planting/Transplanting</b>					
Man-days : Family	9.1	14.6	7.1	11.6	9.8
: Hired	5.3	1.2	0.7	4.8	0.8
<b>4 Fertilizing</b>					
Man-days : Family	5.9	6.6	5.6	0.0	7.0
: Hired	1.2	0.0	0.7	0.0	0.0
<b>5 Weeding/Weed Control</b>					
Man-days : Family	9.2	12.6	1.4	8.0	7.7
: Hired	5.4	3.1	0.0	8.0	0.0
<b>6 Pest and Disease Control</b>					
Man-days : Family	4.1	4.4	5.2	0.0	9.7
: Hired	2.0	0.2	0.0	0.0	0.0
<b>7 Irrigation</b>					
Man-days : Family	0.0	0.1	0.0	0.0	2.5
: Hired	0.2	0.0	0.0	0.0	0.0
<b>8 Harvesting</b>					
Man-days : Family	13.9	11.1	12.1	14.0	29.0
: Hired	7.2	1.2	0.0	3.2	0.0
<b>9 Post harvest Operations</b>					
<b>a. Assembly</b>					
Man-days : Family	1.9	2.2	0.7	0.0	0.0
: Hired	2.8	1.1	0.0	0.0	0.0
Animal-days : Family	0.9	1.3	3.8	0.0	1.7
: Hired	2.0	2.5	2.7	2.4	7.5
<b>b. Grading/Sorting</b>					
Man-days : Family	2.8	3.5	0.2	2.0	3.3
: Hired	0.7	0.3	0.0	0.0	0.0
<b>c. Packaging</b>					
Man-days : Family	2.1	1.8	0.0	0.8	2.0
: Hired	1.0	1.2	0.0	0.8	0.0
<b>TOTAL</b>					
Man-days : Family	66.1	80.4	44.7	46.8	92.7
: Hired	34.5	10.1	25.3	32.4	0.8
Animal-days : Family	1.1	1.7	4.6	0.0	1.7
: Hired	3.0	2.7	5.4	6.4	7.5

**Table V.3.1 Cropping Intensity of the Respondents by Municipality**

Crop	Nagcarlan		Liliw		Maayjay		Total								
	ha	%	ha	%	ha	%	ha	%							
Tomato	24.91	54	0	0	5.90	82	0.80	11	40.06	61	0.80	1	40.86	62	
Cabbage	12.61	28	8	21	0.40	6	0.50	7	15.76	24	5.05	8	20.81	32	
Radish	5.95	13	0	0	0.00	0	0.00	0	5.95	9	0.70	1	6.65	10	
Baguio Beans	1.14	2	1	4	0.40	6	0.50	7	2.04	3	1.00	2	3.04	5	
Sweet Potato	0.50	1	9	0	0.00	0	1.00	14	0.50	1	7.70	12	8.20	12	
Baguio Pechay	0.70	2	0	4	0.50	7	0.00	0	1.70	3	0.00	0	1.70	3	
Sayote	0.00	0	2	0	0.00	0	0.00	0	0.00	0	0.70	1	0.70	1	
Eggplant	0.00	0	1	0	0.00	0	0.00	0	0.00	0	0.50	1	0.50	1	
<b>Total</b>															
Cropped Area	45.81	100	21	100	7.20	100	2.80	39	66.01	100	16.45	25	82.46	125	
Net Upland	45.81				7.20				66.01				66.01		
Total Land	112.40				14.40				150.45				150.45		
Households	74				10				103				103		

# Attachment V.1 Questionnaire

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)  
NATIONAL IRRIGATION ADMINISTRATION (NIA)

## Upland Irrigation and Rural Development Project Farmers' Household Survey in the Municipalities of Nagscarlan, Liliw, and Malajay, Laguna

Enumerator: \_\_\_\_\_  
Date: \_\_\_\_\_

### 1. GENERAL INFORMATION:

1.1 Name of Respondent (Family Head): \_\_\_\_\_

1.2 Name of Barangay: \_\_\_\_\_

1.3 Name of Town: \_\_\_\_\_

### 1.4 Respondent's Household Information:

Relationship to Respondent	Sex	Age Yrs.	Marital Status	Highest Educational Attainment	Local and Off-Farm Economic Activity *	Income Contribution **	Ahead Income Contribution **
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

\* Economic Activities (Other Non-Crop Farming)

1. Crop Farming    3. Forestry & Hunting    5. Civil Service    7. Trade & Manufacturing    9. \_\_\_\_\_

2. Livestock Raising    4. Fishing    6. Construction    8. Others (Specify): \_\_\_\_\_    10. \_\_\_\_\_

\*\* Indicate only the amount contributed to family income

### 1.5 Source of Drinking Water:

Source	Check	Drinking Water/Source		Remarks	
		Adequate?	Safe?		
	YES	NO	YES	NO	
Piped Water					
Spring Water					
River/Stream					
Rain					
Others (Specify):					

1.6 Is electric power available in the Barrio? (check): \_\_\_\_\_ YES \_\_\_\_\_ NO

IF YES: What is the normal number of hours that electricity is available? \_\_\_\_\_ hours per day

## 2. FARM LAND/RESOURCES (One year 1993 Period Only):

### 2.1 Area and Characteristics:

Type of land/Terrace	Number of Fields	Area in Hectares Cultivated	Area in Hectares Non-Cultivated	Irrigated Area Type*	Remarks
Self-Owned					Tax Paid per Year P. _____
CAAP Amortized					Annual Payment P. _____
Leased or Rented					Annual Lease or Rental P. _____
Share-Cropped					Share: _____
Others (Specify):					

\* Type: 1. Gravity    2. Pump

### 2.2 Farm Accessibility:

IS YOUR FARM: Accessible to transport vehicle? (check): \_\_\_\_\_ YES \_\_\_\_\_ NO

IF YES: What type of transport? (check): \_\_\_\_\_ Jeep \_\_\_\_\_ Tricycle \_\_\_\_\_ Truck

IF NO: Indicate distance in km to the nearest motor vehicle passable road: \_\_\_\_\_ km

### 2.3 Where is the nearest market of farm products? (Indicate):

Distance of the farm to the local market? \_\_\_\_\_ km

Distance of the farm from Manila? \_\_\_\_\_ km

### 2.4 Inventory of Farm Tools and Equipment (1994):

Kind	Number of Units	Current Value per Unit (P.)	Describe Key Features
Tractor			_____
Plow			_____
Harrow			_____
Sprayer			_____
Small Pump			_____
Others (Specify):			_____

### 2.5 Inventory of Farm Animals (1994):

Kind	Number of Units	Sold in 1993 Number	Value	Describe Key Features
Horse				
Carabao				
Cattle				
Goat				
Chicken				
Others (Specify)				



3.3 Enterprise Production and Performance (for each Major Annual Crop, more than 1,000 square meters, in Item No. 3.2); [CROPPING PATTERNS]:

(12)

3.3.1 Labor Inputs:

Information Item	1		2		3		4		5		6		7		8	
	Cabbage	Tomatoes	Pecky													
1. Seedbed Preparation																
Date*																
Labor: Man-days**																
Operator/Family Member																
Hired																
Animal-days:																
Operator/family																
Hired																
2. Land Preparation of Field:																
Date*																
Labor: Man-days**																
Operator/Family Member																
Hired																
Animal-days:																
Operator/family																
Hired																
3. Planting/Transplanting:																
Date*																
Labor: Man-days**																
Operator/Family Member																
Hired																
Animal-days:																
Operator/family																
Hired																
4. Weeding:																
Date*																
Labor: Man-days**																
Operator/Family Member																
Hired																
Animal-days:																
Operator/family																
Hired																
5. Weeding/Weed Control:																
Date*																
Labor: Man-days**																
Operator/Family Member																
Hired																
Animal-days:																
Operator/family																
Hired																

\*Date: May not be an exact date; indicate a what period of the month, ex. B=Beginning, M=Middle or Ending.

Ex.: 1B=Beginning of January, 1=January, 2=February, 3=March, etc.

\*\*Average Labor Cost: per Man-day with meal P \_\_\_\_\_; per Man-day without meal P \_\_\_\_\_; per Animal-day P \_\_\_\_\_

3. CROP PRODUCTION:

3.1 Indicate the Perennial Crops you planted/harvested last year (January to December 1993):

Crops	Area Planted (ha)	Area Harvested (ha)	Number of Trees Harvested	Total Production per 20m <sup>2</sup>	Total Sold		Remarks
					Quantity (kg)	Value (P)	
Coconut							
Lemon							
Coffee							
Cacao							
Citrus							
Banana							
Others (Specify):							

3.2 Indicate the Annual Crops you planted/harvested last year (January to December 1993):

Crops	Area Planted (ha)	Area Harvested		Remarks
		Total (ha)	Ungrain Only (ha)	
Cabbage				
Tomatoes				
Pecky				
Others (Specify):				

3.3.2 Material Inputs: [Seeds]

Information Item	Indicate the Crop Enterprise							
	1	2	3	4	5	6	7	8
	Cabbage	Tomatoes	Pecky					
<b>Projected Seeds:</b>								
Variety*								
Certified								
Not Certified								
Quantity (Units)								
Value (P)								
<b>Purchased Seeds:</b>								
Variety*								
Certified								
Not Certified								
Quantity (Units)								
Cost (P)								

3.3.1 Labor Inputs:

Information Item	Indicate the Crop Enterprise							
	1	2	3	4	5	6	7	8
	Cabbage	Tomatoes	Pecky					
<b>6. Pest and Disease Control:</b>								
Date**								
Labor:								
Man-days**								
Operator/Family Member								
Hired								
Animal-days:								
Operator/Family								
Hired								
<b>7. Irrigation</b>								
Date**								
Labor:								
Man-days**								
Operator/Family Member								
Hired								
Animal-days:								
Operator/Family								
Hired								
<b>8. Harvesting:</b>								
Date**								
Labor:								
Man-days**								
Operator/Family Member								
Hired								
Animal-days:								
Operator/Family								
Hired								
<b>9. Postharvest Operations:</b>								
a) Assembly:								
Date**								
Labor:								
Man-days**								
Operator/Family Member								
Hired								
Animal-days:								
Operator/Family								
Hired								
b) Grading/Sorting:								
Date**								
Labor:								
Man-days**								
Operator/Family Member								
Hired								
Animal-days:								
Operator/Family								
Hired								
c) Packing:								
Date**								
Labor:								
Man-days**								
Operator/Family Member								
Hired								
Animal-days:								
Operator/Family								
Hired								

\*Date: May not be an exact date. Indicate a whole period of the month, ex. B-Beginning, M-Middle or E-Ending.  
 Ex.: B-Beginning of January, 1-January; 2-February; 3-March, etc.

\*\*Average Labor Cost: per Man-day with meal P \_\_\_\_\_; per Man-day without meal P \_\_\_\_\_

3.3.3 Material Inputs: [Fertilizers]

Information Item	Indicate the Crop Enterprise							
	1	2	3	4	5	6	7	8
	Cabbage	Tomatoes	Pecky					
<b>Urea:</b>								
46-0-0 Quantity (Units)								
Cost per Unit								
<b>Ammoniac:</b>								
21-0-0-24 Quantity (Units)								
Cost per Unit								
<b>Compost:</b>								
1-1-1-14 Quantity (Units)								
Cost per Unit								
<b>Analysis (Brand):</b>								
Quantity (Units)								
Cost per Unit								
<b>Analysis (Brand):</b>								
Quantity (Units)								
Cost per Unit								
<b>Analysis (Brand):</b>								
Quantity (Units)								
Cost per Unit								
<b>Phos:</b>								
<b>Analysis (Brand):</b>								
Quantity (Units)								
Cost per Unit								
<b>Analysis (Brand):</b>								
Quantity (Units)								
Cost per Unit								
<b>Analysis (Brand):</b>								
Quantity (Units)								
Cost per Unit								
<b>Phos Mixture:</b>								
Quantity (Units)								
Cost per Unit								

ATTACHED FORM (2)

3. Cropping Pattern and Labor Requirement

No.1

Crop (Cropped area)	Item	Jan			Feb			Mar			Apr			May			Jun		
		F	M	E	F	M	E	F	M	E	F	M	E	F	M	E	F	M	E
[ ha ]	C.P. *																		
	M.D. **																		
	A.D. ***																		
[ ha ]	C.P.																		
	M.D.																		
	A.D.																		
[ ha ]	C.P.																		
	M.D.																		
	A.D.																		
[ ha ]	C.P.																		
	M.D.																		
	A.D.																		
[ ha ]	C.P.																		
	M.D.																		
	A.D.																		
[ ha ]	C.P.																		
	M.D.																		
	A.D.																		
[ ha ]	C.P.																		
	M.D.																		
	A.D.																		
[ ha ]	C.P.																		
	M.D.																		
	A.D.																		

\* C.P. : Cropping pattern, \*\* M.D. : Mandays, \*\*\* A.D. : Animal days # F : First, M : Middle, E : End

ATTACHED FORM (2) (continue)

3. Cropping Pattern and Labor Requirement

No.2

Crop (Cropped area)	Item	Jan			Feb			Mar			Apr			May			Jun		
		F	M	E	F	M	E	F	M	E	F	M	E	F	M	E	F	M	E
[ ha ]	C.P. *																		
	M.D. **																		
	A.D. ***																		
[ ha ]	C.P.																		
	M.D.																		
	A.D.																		
[ ha ]	C.P.																		
	M.D.																		
	A.D.																		
[ ha ]	C.P.																		
	M.D.																		
	A.D.																		
[ ha ]	C.P.																		
	M.D.																		
	A.D.																		
[ ha ]	C.P.																		
	M.D.																		
	A.D.																		

\* C.P. : Cropping pattern, \*\* M.D. : Mandays, \*\*\* A.D. : Animal days

3.3.4 Material Inputs: [Plant Protection]

Information Item	Indicate the Crop Enterprise							
	1	2	3	4	5	6	7	8
Kind: _____	Cabbage	Tomato	Peas					
Quantity (Units)								
Value								
Kind: _____								
Quantity (Units)								
Value								
Kind: _____								
Quantity (Units)								
Value								
Kind: _____								
Quantity (Units)								
Value								

3.3.5 Production and Disposal:

Information Item	Indicate the Crop Enterprise							
	1	2	3	4	5	6	7	8
Kind: _____	Cabbage	Tomato	Peas					
Total Gross Production (Quantity Units)								
Sold at Farm Gate:								
Date: _____								
From: _____								
To: _____								
(Quantity Units)								
Gross Sales (P)								
Sold at Market Price:								
Date: _____								
From: _____								
To: _____								
(Quantity Units)								
Gross Sales (P)								
Paid in kind (Quantity Units)								
Consumed at Home (Quantity Units)								
Given Away Free (Quantity Units)								

3.3.6 Estimated Damage:

Information Item	Indicate the Crop Enterprise							
	1	2	3	4	5	6	7	8
Kind: _____	Cabbage	Tomato	Peas					
Quantity (Units)								
Value								

\*Type of Damage:

- 1. Drought
- 2. Disease
- 3. Insects
- 4. Poor Drainage
- 5. Flood
- 6. Typhoons/Strong Winds
- 7. Stolen
- 8. Other (Specify)
- 9. \_\_\_\_\_
- 10. \_\_\_\_\_
- 11. \_\_\_\_\_
- 12. \_\_\_\_\_

3.3.7 Product Prices:

Information Item	Indicate the Crop Enterprise							
	1	2	3	4	5	6	7	8
Kind: _____	Cabbage	Tomato	Peas					
Farm Gate:								
Highest (P/kg)								
Month: _____								
Lowest (P/kg)								
Month: _____								
Average (P/kg)								
Principal Market:								
Highest (P/kg)								
Month: _____								
Lowest (P/kg)								
Month: _____								
Average (P/kg)								

**4. Other Farming Related Concerns:**

**4.1 Which do you consider as important in farming operations?**

	Indicate Priority*
Inadequate/Irregular Rainfall	_____
Irrigation Facilities	_____
Storage of Crops	_____
Lack of Farm Input (Seed, Fertilizers, Chemicals)	_____
Poor Soil Fertility	_____
Shortage of Farm Labor	_____
Lack/Poor Farm to Market (Access) Road	_____
Inadequate Marketing Channels	_____
Others (Specify)	_____

\*Priority: 1= First; 2= Second; 3= Third; 4= 4th to 10

**4.2 What do you think should be given priority in order to increase crop yields?**

	Indicate Priority*
Irrigation Development	_____
Credit Facilities	_____
Agricultural Extension Service	_____
Improvement of Farm to Market Road	_____
Improvement of Marketing Facilities	_____
Cooperative Movement	_____
Subsidy of Farm Inputs	_____
Others (Specify)	_____

**4.3 Agricultural Extension and Related Services Sought/Provided:**

Kind	Check	Indicate if Provided Which Agency	Indicate (X) Those You Initiated
General Advice	_____	_____	_____
Crop Protection	_____	_____	_____
Farm Input Supply	_____	_____	_____
Postharvest	_____	_____	_____
Irrigation/Water Supply	_____	_____	_____
Credit/Loan	_____	_____	_____
Marketing	_____	_____	_____
Others (Specify)	_____	_____	_____

**4.4 Family Living Expenditures:**

Item	Cash Expenditure per year P	Remarks
Food	_____	_____
Education	_____	_____
Health	_____	_____
Recreation	_____	_____
Transportation/Travel	_____	_____
Housing Maintenance	_____	_____
Electricity	_____	_____
Fuel for Cooking	_____	_____

**4.5 Membership and Local Organizations:**

Information Items	A	B	C	D	E	F	G	H
Name of the Organization*	_____	_____	_____	_____	_____	_____	_____	_____
Type (Check):	_____	_____	_____	_____	_____	_____	_____	_____
Current Service Coverage**	_____	_____	_____	_____	_____	_____	_____	_____
Year Established	_____	_____	_____	_____	_____	_____	_____	_____
No. of Current Members	_____	_____	_____	_____	_____	_____	_____	_____
Annual Objectives	_____	_____	_____	_____	_____	_____	_____	_____
Principal Current Activities/Services (Check)	_____	_____	_____	_____	_____	_____	_____	_____
1. Production Input Supply	_____	_____	_____	_____	_____	_____	_____	_____
2. Credit Financing	_____	_____	_____	_____	_____	_____	_____	_____
3. Marketing of Products	_____	_____	_____	_____	_____	_____	_____	_____
4. Postharvest Processing	_____	_____	_____	_____	_____	_____	_____	_____
5. Irrigation	_____	_____	_____	_____	_____	_____	_____	_____
6. Precision Machinery/Equipment Pool	_____	_____	_____	_____	_____	_____	_____	_____
7. Transport Facilities	_____	_____	_____	_____	_____	_____	_____	_____
8. Technical/Training Services	_____	_____	_____	_____	_____	_____	_____	_____
Satisfaction with Current Organization**	_____	_____	_____	_____	_____	_____	_____	_____
Expected Activities (Check):	_____	_____	_____	_____	_____	_____	_____	_____
1. Operation and Management of Irrigation Facilities	_____	_____	_____	_____	_____	_____	_____	_____
2. Financial Assistance/Credit	_____	_____	_____	_____	_____	_____	_____	_____
3. Group/Collective Farming	_____	_____	_____	_____	_____	_____	_____	_____
4. Group/Collective Marketing	_____	_____	_____	_____	_____	_____	_____	_____
5. Market Information Services	_____	_____	_____	_____	_____	_____	_____	_____
6. Technical Assistance/Training	_____	_____	_____	_____	_____	_____	_____	_____

\*Supply the name of the Organization

- A. \_\_\_\_\_
- B. \_\_\_\_\_
- C. \_\_\_\_\_
- D. \_\_\_\_\_
- E. \_\_\_\_\_
- F. \_\_\_\_\_
- G. \_\_\_\_\_
- H. \_\_\_\_\_

\*\*Code for Current Coverage?

- 1. Within the Strategy only
- 2. Within the Municipality only including the Strategy
- 3. Within the Province only including the Strategy
- 4. Outside the Province

\*\*\*No-Not Satisfied; CO-Quite Satisfied; VS-Very Satisfied

**4.6 Agricultural Credit**

4.6.1 Did you experience any financial problem in your last year's farming operations? (check):

\_\_\_ YES \_\_\_ NO

4.6.2 Did you borrow funds for your last year's farming operations?

\_\_\_ YES \_\_\_ NO

IF YES, provide the following information:

Purpose of Credit	Source of Credit							
	1	2	3	4	5	6	7	8
Purchase farm land								
Amount Borrowed								
Interest rate/year								
Pay land rent/lease								
Amount Borrowed								
Interest rate/year								
Purchase farm inputs								
Amount Borrowed								
Interest rate/year								
Other (Specify):								
Amount Borrowed								
Interest rate/year								
Amount Borrowed								
Interest rate/year								
Amount Borrowed								
Interest rate/year								

\*Code the Source of Credit:

- 1. Rural Bank
- 2. Land Bank
- 3. Commercial Bank
- 4. Cooperative/Credit Union
- 5. Government Program
- 6. Other (Specify) \_\_\_\_\_
- 7. \_\_\_\_\_
- 8. \_\_\_\_\_

**5. FARMER'S PERSPECTIVE:**

5.1 What do you consider as the TWO (2) MOST important current constraints in your crop production?

(Mark the two most important in the order given.)

- \_\_\_ 1. Lack of Irrigation
- \_\_\_ 2. Lack of Good Farm to Market Road
- \_\_\_ 3. Lack of Farm Machinery
- \_\_\_ 4. Small Size of Farm Land
- \_\_\_ 5. Inadequate Farm Inputs
- \_\_\_ 6. Shortage of Labor Force
- \_\_\_ 7. Cost of Postharvest Facilities
- \_\_\_ 8. Lack of Transportation Means
- \_\_\_ 9. Lack of Market Information
- \_\_\_ 10. Lack of Technical Information
- \_\_\_ 11. Flood/Damage
- \_\_\_ 12. \_\_\_\_\_
- \_\_\_ 13. \_\_\_\_\_
- \_\_\_ 14. \_\_\_\_\_

5.2 If you are to choose ONLY THREE (3) among the following projects in your farming area which one will these be?

- \_\_\_ 1. Irrigation Development
- \_\_\_ 2. Drainage Improvement
- \_\_\_ 3. Flood Control
- \_\_\_ 4. Farm to Market Road
- \_\_\_ 5. Improvement Farm Inputs Supplies
- \_\_\_ 6. Pest and Diseases Control
- \_\_\_ 7. Introducing of New Crops
- \_\_\_ 8. Postharvest Facilities
- \_\_\_ 9. Storage Facilities
- \_\_\_ 10. Trading Facilities
- \_\_\_ 11. Agricultural Extension Services
- \_\_\_ 12. Farming Mechanization
- \_\_\_ 13. \_\_\_\_\_
- \_\_\_ 14. \_\_\_\_\_

5.3 Should irrigation water become available for your farm, what specific crops do you like to plant under irrigated condition? Please specify the THREE (3) MOST IMPORTANT CROPS for the wet and dry seasons separately:

Priority	Wet Season Crops	Dry Season Crops
First		
Second		
Third		

5.4 Would you want to irrigate vegetable crops using pumping system which may cost a little higher?  
 \_\_\_ YES \_\_\_ NO

5.5 Who do you usually approach/concentr about your crop farming concerns?

Person within the barangay \_\_\_\_\_

Person outside the barangay \_\_\_\_\_

5.6 Which kind of tree crops do you prefer most?  
 \_\_\_\_\_

5.7 (FOR THOSE WITH COCONUTS) What do you intend to do about your coconuts if irrigation becomes available? (Select one):

- \_\_\_ Will retain the coconuts as is
- \_\_\_ Cut all coconuts and plant vegetables and other upland crops
- \_\_\_ Cut some coconuts and plant vegetables and other upland crops
- \_\_\_ Others (Specify): \_\_\_\_\_
- Why? \_\_\_\_\_

THANK YOU FOR YOUR COOPERATION.



**FEASIBILITY STUDY ON  
THE UPLAND IRRIGATION AND  
RURAL DEVELOPMENT PROJECT  
IN SOUTHERN LUZON**

**APPENDIX-VI**

**PUBLIC CONSULTATION SURVEY**





**FEASIBILITY STUDY  
ON  
THE UPLAND IRRIGATION AND RURAL DEVELOPMENT PROJECT  
IN SOUTHERN LUZON**

**APPENDIX-VI  
PUBLIC CONSULTATION SURVEY**

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## **APPENDIX-VI PUBLIC CONSULTATION SURVEY**

### **1 Objectives**

The public consultation survey was carried out during Phase 2 field survey period. The objectives of the survey were as follows.

- 1) To disseminate the preliminary development concept and plan proposed in the Interim Report to the perspective beneficiaries
- 2) To hear farmers' opinions on the concept and plan for further considerations of the JICA Study Team

The survey results were used to confirm and refine the development concept and plan.

### **2 Methodology**

The public consultation survey was carried out by the local contractor with assistance of NIA. At the time, the JICA Study Team also supervised on the survey works. The procedure of the public consultation survey was as follows.

- 1) Preliminary public consultation meetings with the Barangay officials in the range of Municipality
- 2) Public consultation meetings with the perspective beneficiaries in the range of Barangay
- 3) Individual interviews to the selected farmers on prepared questionnaire

Public consultation meetings were held with a total 1,117 of beneficiaries out of a total 1,926 households in the entire Study area. Then, the interviews were undertaken on 116 farm households selected by random sampling from household lists of the Barangays. At the same time, a total 105 women participated in the interviews where 13 were main respondents.

The general information of the attendants and respondents on the survey is tabulated in Table VI.2.1 and VI.2.2. Total number of 16 Barangays were selected for the public consultation survey in the Study area as shown in Fig. VI.1.1.

### 3 Results of Public Consultation Survey

In the public consultation meetings in the respective Barangays in the Study area, the development concept and plan of the Project components were explained and generally accepted by the perspective beneficiaries. The beneficiaries' interest to the development plan was so high that total 1,117 beneficiaries could attend the public consultation meetings and earnest discussions could be done. After the meetings, individual interviews were carried out to the selected 116 farm households using the questionnaire which was prepared by the JICA Study Team for asking general information of respondents, specific opinions on the Project components and also women's role in development.

Out of 116 respondents, levels of acceptance including conservative response are 89 % for irrigation, 95 % for marketing activities, 94 % for agricultural research and extension, 95 % for soil conservation, and 92 % for domestic water supply, as indicated in the following table (also refer to Table VI.3.1).

**Acceptance on the Development Plan**

(Unit: %)			
Components	Accept	More or less accept	Others
Irrigation development	77	12	11 *1
Improvement of marketing activities	91	4	4 *2
Agricultural research and extension	83	11	6 *3
Soil conservation	89	6	4 *4
Rehabilitation of domestic water supply	84	8	8 *5

Source: Public Consultation Survey undertaken in Phase 2 field work.

There were a few respondents who claimed some improvements of the proposed development concept or presented plans, although they were minor in number. Their considerable comments were:

- \*1 too small service area on irrigation development,
- \*2 right-of-way problem for secondary road construction on marketing activities,
- \*3 far from the proposed site of the Center on agricultural research and extension,
- \*4 no perception of necessity on soil conservation, and
- \*5 concern to get water during rehabilitation works on rehabilitation of water supply system.

Besides, the beneficiaries' opinions on each project component described in the Interim Report are summarized as follows.

- 1) Irrigation development (Table VI.3.2)
  - Need for training on irrigation practices
  - Irrigation facilities should be constructed in the public forest land
  - Right-of-way problem

- 2) Improvement of marketing facilities (Table VI.3.3)
  - Municipalities should support transactions of vegetables at trading posts
  - Right-of-way problem for the construction of secondary roads
- 3) Agricultural research and extension plan (Table VI.3.4)
  - Need to increase the number of extension workers
  - Right-of-way for the construction of the Upland Horticulture and Irrigation Technology Center
  - The Center should emphasize extension services rather than research works
- 4) Soil conservation plan (Table VI.3.5)
  - Farmers want to get materials from the government to adopt measures
  - Location of demonstration farm is important to make them effective
  - The financial support to the demo farms is necessary from governmental agencies
- 5) Rehabilitation of domestic water supply system (Table VI.3.6)
  - The Project should not limit to the rehabilitation of the existing system, but include the construction of additional water system
  - Concern if they could get water during the rehabilitation works
  - Increase in the quantity of water supply is needed

These farmers' opinions were carefully examined by the Study Team, and all of them were examined during the course of the project formulation. The project concept, development plan and design of the facilities were improved and refined through the re-examination of their opinions.

## **4 Analysis and Discussion**

### **4.1 Irrigation Development Plan**

The proposed irrigation development plan covered Nagcarlan and lower portion of Liliw only from the viewpoint of technical investigations. The farmers generally showed positive response to the plan and farmers in not irrigable areas were eager to extend the irrigation service area.

The major farmers' opinions were deeply discussed among the JICA Study Team and the Philippine side and these discussions are summarized as follows.

#### **1) Small service area**

The limiting factor of irrigation service area is water resources availability, although the water saving irrigation method was planned to be introduced in the area. The proposed water sources are technically and economically suitable water resources in the Study area. Therefore, no further expansion of the service area are expected in the irrigation development plan, even though the farmers eager to get more irrigation services.

2) Training on irrigation practices

The proposed "Upland Horticulture and Irrigation Technology Center" shall provide opportunities of training to the farmers. Also the farmers can easily see and learn the irrigation practices for vegetables as well as vegetable cropping practices at the Center.

3) Public Forest land

The irrigation service area shall be planned in the A&D lands and also the Public Forest lands in Nagcarlan and Liliw. The only existing farm lands in the Public Forest are subject to the irrigation development plan.

4) Right-of-way problem

The proposed intake facilities and water conveying systems for irrigation shall avoid from nature destruction and large occupation of private lands as much as possible. For example, pipe line under the ground are planned for irrigation water distribution.

#### 4.2 Improvement Plan of Marketing Activities

The transportation improvement including pavement of existing barangay roads, construction of secondary roads and skyline cables, and also construction of trading posts were proposed for the marketing activity enhancement in the Interim Report. The farmers have high interest to the improvement plan and more than 90 % said to want to participate in marketing cooperatives which were proposed to operate the new marketing channel through the trading posts (see Table VI.4.1).

The major farmers' opinions were discussed among the JICA Study Team and the Philippine side and these discussions are summarized as follows.

1) Municipalities' support

The principal operation works of the trading posts shall be performed with technical collaboration of the Municipal Agricultural Offices.

2) Right-of-way problem for secondary roads

The all secondary roads proposed in the Interim Report shall be canceled in the final development plan. The reasons are the right-of-way problem for the construction, prospective negative impacts to the nature of the mountains and economical unfeasibility.

3) Skyline cable

The skyline cable plan in the Interim Report shall also canceled in the final plan, because of economical unfeasibility and O&M difficulties.

#### **4.3 Agricultural Research and Extension Plan**

The "Upland Horticulture and Irrigation Technology Center" is planned to be established in Barangay Bukal, Nagcarlan for the major purpose of research and extension services. The willingness to participate in the proposed training programs was very high as shown in Table VI.4.2. The farmers in the area have high intent to learn cropping methods, post-harvest technologies, soil erosion control and irrigation technologies.

The major farmers' opinions were discussed among the JICA Study Team and the Philippine side and these discussions are summarized as follows.

1) Location of "Upland Horticulture and Irrigation Technology Center"

The proposed site of the Center was in Barangay Bukal, Nagcarlan, and the Study Team could not find any other suitable locations. The site is far from Liliw and Majayjay, but the access road to the Center shall be improved under the development plan.

2) Number of extension workers

The Center shall have some education programs to agricultural extension workers as a major function.

3) Extension service

The main function of the Center are placed in extension service of vegetable cropping and irrigation practices to the farmers as well as the extension workers. The function of research works shall be the second objective of the Center.

#### **4.4 Soil Conservation Plan**

The soil conservation demonstration fields were proposed to be settled in some existing farm lands suffered by soil erosion. The 77 % of the respondents noted their own farm lands suffered by soil erosion but only 66 % applied soil erosion control measures, as shown in Table VI.4.3. The popular measure is Contour Hedgerow in the area. The 73 % of the sample farmers perceive the necessity of soil control measures on the farm lands.

The major farmers' opinions were discussed among the JICA Study Team and the Philippine side and these discussions are summarized as follows.

1) Necessity

Some farmers in the relatively flat and low farm lands do not have perception of necessity on soil conservation. However, considerably large area is actually observed to face soil erosion more or less. Soil conservation plan is considered to be an essential component of the development plan.



- 2) **Material supply and financial support by the governmental agencies**

The "Soil Conservation Extension Center" is planned to be established in Liliw and provide tree nursery to apply soil conservation measures. The necessary materials for the demonstration fields shall be supplied from the Project fund.

- 3) **Location of demonstration fields**

The location of the nine demonstration fields on soil conservation is planned to be scattered in the Study area and to be near from barangay roads in order to show the soil conservation measures to the many farmers easily. The areas are 3.6 ha in Nagcarlan, 7.3 ha in Liliw and 1.2 ha in Majayjay.

#### **4.5 Rehabilitation Plan of Domestic Water Supply**

The rehabilitation works of some existing domestic water supply systems were proposed but the objective systems were not specialized in the Interim Report. The farmers showed general opinions the rehabilitation plan.

The major farmers' opinions were discussed among the JICA Study Team and the Philippine side and these discussions are summarized as follows.

- 1) **Construction of additional water supply systems**

New construction of rural water supply system shall not be considered in the development plan.

- 2) **Water supply during the rehabilitation works**

Water supply shall be secured by construction some temporary works during the rehabilitation period.

- 3) **Increase in the quantity of water supply**

Water diversion works and conduits shall be rehabilitated for efficient use of water.

#### **4.6 Participation of Women in Development**

In the public consultation survey in the Study area during Phase 2, 105 women were interviewed to collect women's opinions to the plan. The women are generally involved with household chores and assisting in farm production. Assessment of work load shows that almost 50 % of the total women respondents believe that their work load is heavy and other 50 % believe it is not (see Table VI.4.4). To conclude, 89 % of the respondents said they like the proposed Project for the following reasons, and further, 93 % of the women respondents would want to participate more in economic activities, such as marketing, processing and storage of their farm products (see Table VI.4.5 and VI.4.6).