Table IV.3.4 Population in Region IV and Rizal Province

(in x 1,000)

Total	Regional Total		Source Region		Growth Corridor Sub-Region		Rizal Province	
1903	924		180		744		50	
1981	1,231	(2.22)	263	(3.07)	968	(1.88)	64	(1.18)
1939	1,813	(2.25)	407	(2.60)	1,406	(2.05)	88	(1.80)
1948	2,804	(1.66)	469	(1.50)	2,335	(6.60)	105	(2.11)
1960	3,081	(3.99)	723	(4.50)	2,358	(0.01)	174	(5.53)
1970	4,457	(4.47)	1,020	(3.73)	3,437	(0.30)	307	(7.69)
1975	5,214	(3.40)	1,220	(3.26)	3,994	(2.70)	414	(6.95)
1980	6,119	(3.47)	1,408	(2.56)	4,711	(2.99)	556	(6.82)
1986	7,287	(2.72)	1,653	(2.48)	5,634	(2.79)	696	(3.59)
1987	7,488	(2.76)	1,694	(2.48)	5,794	(2.84)	719	(3.36)
1988	7,692	(2.72)	1,736	(2.46)	5,956	(2.79)	743	(3.31)
1989	7,898	(2.68)	1,779	(2.44)	6,120	(2.75)	767	(3.27)
1990	8,104	(2.61)	1,819	(2.29)	6,285	(2.70)	792	(3.20)
1991	8,313	(2.57)	1,863	(2.38)	6,450	(2.63)	817	(3.10)
1992	8,522	(2.52)	1,908	(2.43)	6,616	(2.57)	842	(3.04)

Reference: Medium Term South Tagalog Region Development Plan, 1987 - 1992

Table IV.3.5 Regional Economy, 1980-1986, Region IV: Southern Tagalog

(million pesos)

	1980	1981	1982	1983	1984	1985	1986
GROSS DOMESTIC PRODUCT (at current prices):							
Natioal Level:	264,652	305,260	340,599	384,098	540,467	609,459	623,051
per Capita Value in Nation:	(5,477)	(6,162)	(6,707)	(7,379)	(10,130)	(11,148)	(11,125)
Revion IV:	39,235	44,485	49,369	56,847	81,291	90,664	92,229
per Capita Value in Region:	(6,375)	(7,024)	(7,576)	(8,480)	(11,791)	(12,789)	(12,656)
GROSS DOMESTIC PRODUCT (at 1972 constant prices):							
National Level:	92,568	96,208	98,999	99,920	93,927	89,803	90,793
per Capita Value in Nation:	(1,916)	(1,942)	(1,949)	(1,920)	(1,760)	(1,643)	(1,621)
Region IV:	12,799	13,178	13,507	13,591	13,367	12,713	13,005
per Capita Value in region:	(2,080)	(2,081)	(2,073)	(2,027)	(1,939)	(1,793)	(1,785)
GROSS VALUE ADDED IN AGRICULTURE, FISHERY AND FORESTRY (at 1972 constant prices)							
National Level:	23,662	24,608	25,378	24,845	25,409	26,252	27,233
Region IV:	3,546	3,770	3,822	3,626	3,980	3,951	4,239

Data Source: Economic and Social Statistics Office,
National Statistical Coordination Board

Table IV.3.6 Gross Value Added in Agriculture, Fishery and Forestry 1972 and 1984-1987
(in million pesos at 1972 constant prices)

Description	1972	1984	1985	1986	1987
AGRICULTURE:	8,956	15,564	16,434	17,198	16,871
Paddy	2,749	4,201	4,665	4,973	4,625
Corn	1,012	1,470	1,698	1,847	1,932
Coconut/copra	1,154	952	1,420	1,821	1,803
Sugar cane	1,063	1,332	829	775	701
Banana	188	908	931	935	878
Other crops	2,790	6,701	6,891	6,847	6,932
LIVESTOCK:	1,756	2,162	2,114	2,283	2,432
POULTRY:	724	2,589	2,578	2,547	2,742
FISHERY:	2,689	4,329	4,422	4,551	4,638
FORESTRY:	2,010	765	706	854	648
TOTAL GROSS VALUES:	16,135	25,409	26,252	27,233	27,331

Data source: Economic and Social Statistics Office,
National Statistical Coordination Board

Table IV.3.7 General Features of Rizal Province
(as of 1988)

Political Sub-Division / Municipalities	Barangays	Land Area		Population	Population Density
	(Nos.)	(ha.)		(persons)	(persons/km2)
Angono	10	2,600	(1.99%)	47,398	1,823
Antipolo	15	30,610	(23.48%)	142,837	466
Baras	10	2,340	(1.80%)	13,642	582
Binangonan	39	7,270	(5.58%)	114,540	1,575
Cainta	7	1,019	(0.78%)	1,213,626	11,150
Cardona	18	3,120	(2.38%)	29,879	957
Jala-Jala	11	4,930	(3.78%)	17,019	345
Morong	8	3,760	(2.88%)	31,357	833
Pililla	9	7,390	(5.67%)	30,788	416
Rodriguez (Montalban)	11	31,280	(23.99%)	63,233	202
San Mateo	15	6,490	(4.98%)	77,591	1,195
Tanay	19	24,340	(18.67%)	52,906	217
Taytay	5	3,374	(2.59%)	107,902	3,198
Teresa	9	1,860	(1.43%)	16,967	912
Total	186	130,383	(100.00%)	859,685	659

Data source: Socio Economic Profile of Rizal province
NCSO, Bureau of Land,
Resource Assessment and Guidelines for Project
Identification, Development and Implementation

Table IV.3.8 Average Family Income by Income Class, Rizal, 1985

Income Class (Pesos)	% of Total Families (n=121,775)	Average Family Income (Pesos)
Under 10,000	4.9	9,409
10,000 - 14,999	19.3	12,519
15,000 - 19,999	16.2	17,390
20,000 - 29,999	19.9	24,590
30,000 - 39,999	11.0	34,442
40,000 - 59,999	12.4	47,995
60,000 & over	16.3	111,755
Total/Average	100.0	38,547

Source: Rizal Provincial Profile, 1988-1989
DA, Capitol, Pasig, Metro Manila

Table IV.3.9 Total Number of Families by Main Source of Income, Rizal, 1985

Main Source of Income	Total Families	
	Number	%
Wages and Salaries	65,105	53.5
Agricultural	(10,436)	(8.6)
Non-Agricultural	(54,669)	(44.9)
Entreprenerial Activities	37,515	30.8
Agricultural	(20,815)	(17.1)
- Crop Farming & Gardening	(7,813)	(6.4)
- Livestock and Poultry Raising	(1,664)	(1.4)
- Fishing	(5,698)	(4.7)
- Forestry and Hunting	(5,640)	(4.6)
Non-Agricultural	(16,700)	(13.7)
- Wholesale and Retail	(10,239)	(2.4)
- Manufacturing	(1,439)	(1.2)
- Community, Social, Regurational and Personnal Services	(1,439)	(1.2)
- Transportation Storage and Communication Services	(3,583)	(2.9)
- Mining and Quarrying	-	-
- Construction	-	-
- Others (n.e.s.)	-	-
Other Sources	19,155	15.7
Total	121,775	100.0

Note: n.e.s. - not elsewhere stated
Source: Rizal Provincial Profile, 1988-1989
DA, Capitol, Pasig, Metro Manila

Table IV.3.10 Household and Population of 15 Years Old and Over by Employment Status, Rizal 1989

Age Group (year)	Total	In the Labor Force		Net in the Labor Force
		Employed	Unemployed (1,000)	
15 - 19	81	29	6	46
20 - 24	77	48	5	24
25 - 34	118	84	4	30
35 - 44	86	63	-	23
45 - 54	54	37	1	16
55 - 64	27	17	-	10
65 or over	17	7	-	10
age not reported	1	-	1	-
Total	461	285	17	159

Note: NSO's population projection for Rizal Province is estimated at 719,413 (1987) assuming a moderte fertility and moderate mortality decline.

Source: Rizal Provincial Profile, 1988-1989
DA, Capitol, Pasig, Metro Manila

Table IV.3.11 Number of Employed Persons by Major Industry, Urban and Rural, Rizal, 1987

Major Industry Group	Employed Persons		
	Urban	Rural	Total
	(1,000)		
Agriculture, Fishery and Forestry	32	48	80
Mining and Quarrying	1	-	1
Manufacturing	50	13	63
Electricity, Gas & Watre	-	-	-
Construction	18	4	22
Wholesale and Retai Trade	24	12	36
Transportatio and Communication	17	3	20
Financing Institution, Real Estate & Business Services	8	-	8
Community, Social and Personal Services	42	11	53
Industry not Adequately Defined	2	-	2
Total	194	91	285

Source: Rizal Provincial Profile, 1988-1989
DA, Capitol, Pasig, Metro Manila

Table IV.3.12 Area Harvested and Production of Food Crops, Rizal, 1988

Crop	Area Harvested		Production	
	Hectares	%	Metric Tons	%
Paddy	8,857	76.1	28,462	47.9
Vegetables	1,107	9.5	11,570	19.5
Root Crops	681	5.8	9,140	15.4
Corn (green)	833	7.2	10,016	16.8
Peanut	164	1.4	267	0.4
Total	11,642	100.0	59,455	100.0

Source: Rizal Provincial Profile, 1988-1989
DA, Capitol, Pasig, Metro Manila

Table IV.3.13 Distribution of Family Expenditure by Expenditures Group, Rizal, 1985

Expenditure Group	Expenditure	
	Pesos	%
Food	15,623	48.8
Alcoholic Beverages	416	1.3
Tobacco	768	2.4
Fuel, Light and Water	1,505	4.7
Transportation and Communication	2,081	6.5
Household Operation	768	2.4
Personal Care and Effects	672	2.1
Clothing, Footwear and Other wears	1,089	3.4
Education	1,185	3.7
Recreation	96	0.3
Medical Care	416	1.3
Non-Durable Furnishings	96	0.3
Durable Furniture and Equipment	704	2.2
Rent/Rental Value of Occupied Dwelling Unit	4,386	13.7
House Maintenance and Minor Repairs	224	0.7
Taxes Paid	384	1.2
Miscellaneous Expenditures	1,601	5.0
Total	32,014	100.0

Source: Rizal Provincial Profile, 1988-1989
DA, Capitol, Pasig, Metro Manila

Table IV.3.14 Average Family Expenditure by Income Class
Rizal 1985

Income Class (Pesos)	% of Total Families (n = 121,775)	Average Family Expenditure (Pesos)
Under 10,000	4.9	9,291
10,000 - 14,999	19.3	13,422
15,000 - 19,999	16.2	17,506
20,000 - 29,999	19.9	23,771
30,000 - 39,999	11.0	31,424
40,000 - 5,999	12.4	43,479
60,000 and over	16.3	77,005
Total/Average	100.0	32,370

Source: Rizal Provincial Profile, 1988-1989
DA, Capitol, Pasig, Metro Manila

Table IV.4.1 Population by Sex and Household in each Barangay
Jala-Jala, 1989

Barangay	Population			No. of Household	Family Size
	Male	Female	Total		
Sipsipin	1,118	1,031	2,149	358	6.00
District I	1,058	977	2,035	370	5.50
District II	758	701	1,459	243	6.00
District III	726	729	1,455	242	6.01
Bayugo	1,303	1,157	2,460	410	6.00
Punta	1,073	1,117	2,190	365	6.00
Palay-Palay	722	666	1,388	231	6.01
Pagkalinawan	679	578	1,257	210	5.99
Lubo	670	595	1,265	211	6.00
Bagumbong	1,218	1,268	2,486	414	6.00
Paalaman	316	292	608	102	5.96
Total	9,641	9,111	18,752	3,156	5.94

Note : Data Source;Annual Statistics, Jala-Jala Rural Healtu Center, 1990

Table IV.4.2 Population by Age and Sex, Jala-Jala, 1989

Age-Group	Population		
	Male	Female	Toal
0 - 4	1,214	1,102	2,316
5 - 9	1,146	1,057	2,203
10 - 14	1,176	1,083	2,259
15 - 19	1,012	931	1,943
20 - 24	926	900	1,826
25 - 29	829	857	1,686
30 - 34	800	829	1,629
35 - 39	704	674	1,378
40 - 44	530	473	1,003
45 - 49	385	337	722
50 - 54	299	273	572
55 - 59	202	191	393
60 - 64	145	144	289
65 - 69	95	100	195
70 - 74	67	73	140
75 +	111	87	198
Total	9,641	9,111	18,752

Note: Data Source: Annual Statistic, Jala-Jala Rural Health Center

Table IV.4.3 Other Fees and Charges Collected by the Municipality of Jala-Jala, 1989

Fund Source	Charge/Fee (Pesos)	Fund Source	Charge/Fee (Pesos)
Birth Certificate	12.00	Cond. Registration	
Certified True Copy (Birth Certificate)	10.00	Motorboats	30.00/year
Late Registration (Birth)	30.00	Non-motorized boats	20.00/year
Certification (Local Civil Register)	10.00	Meddical Certificate	10.00
Application for Marriage	30.00	Impounding Large Cattle	50.00/day
Police Clearance		On Location Fishing	50.00/day
(Local)	10.00	Sanitary Inspection	25.00
(Abroad)	30.00	Barial Permit	5.00
Secretary's Utilization		Transfer of Human Remain	10.00
(Local)	10.00	Construction:	
(Abroad)	30.00	Major permit	20.00
Official Record Documents	10.00	Safety switch	5.00
Investment Companies:		Convenience outlets	3.10
Rural bank	800.50/year	Thumbler switch	1.00
Boarding house	20.00/load	Inspection fee	10.00
Fish cages (Tilapyann)	150.00/year	Building permit:	
Truck load (gravel, bankers, etc.)	40.00/delivery	Fruit	10.00
Business license (general service)	700.00/year	L	2.00
Permit for excavation	5.00/sq.m.	Licenses:	
Registration Fees for		Tobacco	60.00/year
		Soft drinke	160.00/year
		Beer	80.00/year
		Hard liquers	100.00/year

Table IV.5.1 Gross Value of Production by Income Sectors, Jala-Jala Municipality, 1989

Income Sector	Gross Value of Production (Peso '000)	Percent
Agriculture	31,373.4	48.4
Crops	20,172.8	30.1
Livestock	8,681.1	13.0
Fisheries	3,520.0	5.3
Business /_1	18,362.3	27.4
Service /_2	11,357.3	17.0
Other source /_3	4,887.7	7.2
Total	66,980.7	100.0

/_1: Includes sari-sari stores, cottage industry and related small-scale business entrprises.
/_2: Includes employment and occupations engaged in services in government and private agencies or establishments.
/_3: Includes income from other sources.

Source: Estimates from Farm Economic Survey 1989.

Table IV.5.2 Present Use of Cropland, Production and Gross Value of Production, Jala-Jala, 1989

Use of Cropland	Area Cropped (ha)	Yield (ton/ha)	Total Production (tons)	Farm-gate Price (Pesos/ton)	Gross Value of Production (Peso '000)
Paddy					
Irrigated					
Wet season	350	2.0	700	4,500	3,150.0
Dry season	70	3.8	266	4,500	1,197.0
Rainfed					
Wet season	400	1.9	760	4,500	3,420.0
Upland Crops					
Corn, shelled	40	2.8	112	5,300	593.6
Tomato	14	6.0	84	3,500	294.0
Squash	5	3.0	15	5,000	75.0
Eggplant	6	7.0	42	12,000	504.0
Patola	4	3.0	12	8,000	96.0
Ampalaya	15	6.0	90	10,000	900.0
Upo	5	6.0	30	2,350	70.5
Gabi	50	9.0	450	2,850	1,282.5
Sweet potato	11	10.0	110	2,700	297.0
Ubi	10	9.8	98	7,800	764.4
Cassava	18	3.6	65	2,500	162.0
Others /_1	42	4.0	168	3,000	504.0
Ochard					
Banana	30	4.5	135	1,100	148.5
Citrus- Calamansi	5	7.2	36	4,000	144.0
Sginkom	45	6.0	270	5,000	1,350.0
Ladu	10	6.0	60	5,500	330.0
Mango	100	4.5	450	5,000	2,250.0
Coffee, robsta	30	1.2	36	14,300	514.8
Others /_2	85	5.0	425	5,000	2,125.0
Total	1,345	-	4,414	-	20,172.3

/_1: Include other vegetables such as okra, raddish, sitao, cowpea, etc.
/_2: Include other fruits such as guyabano, starapple, jackfruit, santol, guava, etc.

Table IV.5.3 Number of Livestock in the Study Area by Barangay

Name of Barangay	Area(ha)	Number of main livestock						
		Cattle	Carabao	Hogs	Poultly	Goats	Horses	Ducks
1 Sipsipin	514	35	147	81	500	55	5	3,300
2 1st District	1,020	32	54	45	150	50	61	50
3 2nd District	447	18	49	35	200	60	0	0
4 3rd District	447	22	37	38	100	33	0	30
5 Bayugo	550	123	97	29	100	105	0	200
6 Punta	308	105	31	37	280	30	0	600
7 Palaypalay	221	68	59	36	500	22	8	500
8 Pagkalinawan	332	51	25	30	600	35	36	400
9 Lubo	375	43	72	29	400	28	33	500
10 Bagumbong	716	85	200	85	800	37	25	1,000
Municipality	4,930	582	771	445	3,630	455	168	6,580

Source:D.A., Provincial Office, 1988

Table IV.7.1 (1) Off-Farm/Non-Farm Activity by Barangay

Activity	Palay-Palay					Punta					Bayugo				
	Average Income by Activity (peso)	Farmers (No.)	Total Value (peso)	Income per H.H. Value (pesos)	%	Average Income by Activity (peso)	Farmers (No.)	Total Value (peso)	Income per H.H. Value (pesos)	%	Average Income by Activity (peso)	Farmers (No.)	Total Value (peso)	Income per H.H. Value (pesos)	%
1. Rent of Farm Implements	14,383	7	100,680	2,237	16.3	863	4	3,450	150	1.1	650	2	1,300	33	0.2
2. Rent of Farm Land	4,800	1	4,800	107	0.8	0	0	0	0	0.0	2,400	1	2,400	62	0.4
3. Cottage Industry	6,150	2	12,300	273	2.0	2,000	1	2,000	87	0.6	8,400	1	8,400	215	1.5
4. Subsidiary Business															
Working on other farms	12,557	6	75,340	1,674	12.2	15,000	1	15,000	652	4.6	7,020	2	14,040	360	2.5
Sari-sari store	10,800	3	32,400	720	5.3	5,914	7	41,400	1,800	12.8	7,600	3	22,800	585	4.1
Driver, const. workers	18,240	3	54,720	1,216	8.9	15,600	1	15,600	678	4.8	21,900	4	87,600	2,246	15.9
Beautician, etc.	9,996	4	39,984	889	6.5	0	0	0	0	0.0	6,375	2	12,750	327	2.3
Others	3,718	4	14,870	330	2.4	0	0	0	0	0.0	6,867	4	27,467	704	5.0
5. Other Occupation	35,700	4	142,800	3,173	23.2	27,000	2	54,000	2,348	16.7	31,020	2	62,040	1,591	11.2
6. Gifts and Remmitance	5,557	6	33,340	741	5.4	8,131	7	56,920	2,475	17.6	10,875	8	87,000	2,231	15.8
7. Fishing	5,057	18	91,030	2,023	14.8	7,337	11	80,702	3,509	25.0	6,985	21	146,680	3,761	26.6
8. Livestock	4,500	2	9,000	200	1.5	10,740	5	53,700	2,335	16.6	6,333	6	38,000	974	6.9
9. Other income	1,040	5	5,200	116	0.8	0	0	0	0	0.0	10,418	4	41,672	1,069	7.5
Total				13,699	100.0				14,034	100.0				14,158	100.0

Activity	3rd District					2nd District					1st District				
	Average Income by Activity (peso)	Farmers (No.)	Total Value (peso)	Income per H.H. Value (pesos)	%	Average Income by Activity (peso)	Farmers (No.)	Total Value (peso)	Income per H.H. Value (pesos)	%	Average Income by Activity (peso)	Farmers (No.)	Total Value (peso)	Income per H.H. Value (pesos)	%
1. Rent of Farm Implements	1,280	2	2,560	71	0.3	500	1	500	42	0.3	2,050	4	8,200	256	1.4
2. Rent of Farm Land	2,400	1	2,400	67	0.3	0	0	0	0	0.0	0	0	0	0	0.0
3. Cottage Industry	36,000	1	36,000	1,000	4.2	0	0	0	0	0.0	7,200	1	7,200	225	1.2
4. Subsidiary Business															
Working on other farms	0	0	0	0	0.0	18,000	1	18,000	1,500	10.0	900	2	1,800	56	0.3
Sari-sari store	18,000	6	108,000	3,000	12.6	6,258	4	25,032	2,086	13.9	4,913	4	19,650	614	3.3
Driver, const. workers	13,680	5	68,400	1,900	8.0	12,000	1	12,000	1,000	6.7	12,480	2	24,960	780	4.2
Beautician, etc.	8,400	1	8,400	233	1.0	0	0	0	0	0.0	0	0	0	0	0.0
Others	16,500	4	66,000	1,833	7.7	5,213	3	15,640	1,303	8.7	8,225	4	32,900	1,028	5.5
5. Other Occupation	16,000	3	48,000	1,333	5.6	0	0	0	0	0.0	26,573	13	345,452	10,795	57.8
6. Gifts and Remmitance	15,371	14	215,200	5,978	25.2	7,425	4	29,700	2,475	16.5	15,000	5	75,000	2,344	12.6
7. Fishing	11,100	10	111,000	3,083	13.0	4,800	1	4,800	400	2.7	8,467	3	25,400	794	4.3
8. Livestock	22,125	4	88,500	2,458	10.4	2,117	3	6,350	529	3.5	4,560	6	27,360	855	4.6
9. Other income	14,360	7	100,520	2,792	11.8	16,910	4	67,640	5,637	37.6	7,350	4	29,400	919	4.9
Total				23,749	100.0				14,972	100.0				18,666	100.0

Note:Farm Economic Survey by JICA, 1989

Table IV.7.1 (2) Off-Farm/Non-Farm Activity by Barangay

Activity	Sipsipin					Bagumbong					Paalaman				
	Average Income by Activity (peso)	Farmers (No.)	Total Value (peso)	Income per H.H. Value (pesos)	%	Average Income by Activity (peso)	Farmers (No.)	Total Value (peso)	Income per H.H. Value (pesos)	%	Average Income by Activity (peso)	Farmers (No.)	Total Value (peso)	Income per H.H. Value (pesos)	%
1. Rent of Farm Implements	4,636	11	51,000	879	4.3	1,138	4	4,550	61	0.4	2,533	3	7,600	1,267	9.5
2. Rent of Farm Land	850	2	1,700	29	0.1	4,500	2	9,000	120	0.7	0	0	0	0	0.0
3. Cottage Industry	41,000	1	41,000	707	3.4	0	0	0	0	0.0	0	0	0	0	0.0
4. Subsidiary Business															
Working on other farms	1,633	3	4,900	84	0.4	3,517	2	7,033	94	0.6	0	0	0	0	0.0
Sari-sari store	4,520	5	22,600	390	1.9	12,767	12	153,200	2,043	12.4	0	0	0	0	0.0
Driver, const. workers	18,823	11	207,048	3,570	17.4	17,553	11	193,080	2,574	15.7	0	0	0	0	0.0
Beautician, etc.	3,600	1	3,600	62	0.3	21,852	4	87,408	1,165	7.1	0	0	0	0	0.0
Others	13,886	7	97,200	1,676	8.2	14,040	5	70,200	936	5.7	8,600	4	34,400	5,733	42.8
5. Other Occupation	22,556	9	203,000	3,500	17.1	31,057	7	217,399	2,899	17.6	36,000	1	36,000	6,000	44.8
6. Gifts and Remmitance	10,231	13	133,000	2,293	11.2	8,540	10	85,400	1,139	6.9	0	0	0	0	0.0
7. Fishing	6,458	24	155,000	2,672	13.0	9,113	17	154,920	2,066	12.6	0	0	0	0	0.0
8. Livestock	6,144	16	98,305	1,695	8.3	6,791	22	149,400	1,992	12.1	0	0	0	0	0.0
9. Other income	19,111	9	172,000	2,966	14.4	17,000	6	102,000	1,360	8.3	2,400	1	2,400	400	3.0
Total				20,523	100.0				16,448	100.0				13,400	100.0

Activity	Lubo					Pagkalinawan					Total				
	Average Income by Activity (peso)	Farmers (No.)	Total Value (peso)	Income per H.H. Value (pesos)	%	Average Income by Activity (peso)	Farmers (No.)	Total Value (peso)	Income per H.H. Value (pesos)	%	Average Income by Activity (peso)	Farmers (No.)	Total Value (peso)	Income per H.H. Value (pesos)	%
1. Rent of Farm Implements	1,715	5	8,576	186	1.3	2,400	1	2,400	104	1.3	-	-	190,816	483	2.9
2. Rent of Farm Land	1,000	1	1,000	22	0.1	0	0	0	0	0.0	-	-	21,300	54	0.3
3. Cottage Industry	0	0	0	0	0.0	0	0	0	0	0.0	-	-	106,900	271	1.6
4. Subsidiary Business															
Working on other farms	4,625	2	9,250	201	1.4	7,800	2	15,600	678	8.5	-	-	160,963	408	2.5
Sari-sari store	10,000	3	30,000	652	4.4	0	0	0	0	0.0	-	-	455,082	1,152	7.0
Driver, const. workers	4,110	2	8,220	179	1.2	0	0	0	0	0.0	-	-	671,628	1,700	10.3
Beautician, etc.	12,000	1	12,000	261	1.8	0	0	0	0	0.0	-	-	164,142	416	2.5
Others	13,422	8	107,376	2,334	15.8	4,150	4	16,600	722	9.1	-	-	482,653	1,222	7.4
5. Other Occupation	40,333	6	242,000	5,261	35.7	51,000	2	102,000	4,435	55.8	-	-	1,452,691	3,678	22.4
6. Gifts and Remmitance	6,029	11	66,320	1,442	9.8	1,000	2	2,000	87	1.1	-	-	783,880	1,985	12.1
7. Fishing	10,438	8	83,500	1,815	12.3	2,560	5	12,800	557	7.0	-	-	865,832	2,192	13.3
8. Livestock	4,683	9	42,150	916	6.2	3,629	7	25,400	1,104	13.9	-	-	538,165	1,362	8.3
9. Other income	9,767	7	68,367	1,486	10.1	1,500	4	6,000	261	3.3	-	-	595,199	1,507	9.2
Total				14,756	100.0				7,948	100.0				16,428	100.0

Note:Farm Economic Survey by JICA, 1989

Table IV.7.2 Distribution of the Number of Industries and Employees by Province

Province	Industries		Employees	
	Number	Percent	Number	Percent
Rizal	136	57	7,545	71
Laguna	97	41	2,810	27
Cavite/Batangas	4	2	1,187	2
Total	237	100	10,542	100

Source: Laguna Lake Development
Laguna Lake Development Authority

Table IV.7.3 Agricultural Feedlots and Breeding Farms

Province and Municipality	Piggery		Poultry		Duck		Pig. & Poultry		Total		Distribution	
	No.	Emp.	No.	Emp.	No.	Emp.	No.	Emp.	No.	Emp.	No.	Emp.
	number										(%)	
Rizal												
Taguig, MM	1a/	22	1	3	20	122	0	0	22	147	25	13
Angono	1	7	0	0	0	0	0	0	1	7	1	1
Cardona	0	0	2	12	2	13	0	0	4	25	5	2
Morong	2	32	2	11	0	0	0	0	4	43	5	4
Baras	2	90	3	34	0	0	0	0	5	124	6	11
Tanay	6	101	2	15	0	0	0	0	8	116	9	10
Pililia	1	35	2	13	0	0	0	0	3	48	3	4
Pasig, MM	0	0	0	0	7	43	0	0	7	43	8	4
Taytay, MM	0	0	0	0	0	0	1	10	1	10	1	1
Antipolo	14	204	8	81	1	7	0	0	23	292	26	26
Montalban	1	10	2	14	0	0	0	0	3	24	4	2
Teresa	3	157	2	13	0	0	1	70	6	240	7	22
Sub-total	31	658	24	196	30	185	2	80	87	1119	100	100
Laguna												
San Pedro	4	78	0	0	4	12	0	0	8	90	12	9
Binan	3	91	0	0	0	0	0	0	3	91	5	9
Sta. Rosa	1	10	2	13	0	0	0	0	3	23	5	2
Cabuyao	4	130	5	38	1	5	0	0	10	173	15	18
Calamba	4	216	2	17	0	0	1	73	7	306	10	31
Los Banos	1	15	0	0	0	0	0	0	1	15	1	1
Bay	0	0	2	10	0	0	0	0	2	10	3	1
Victoria	0	0	7	50	0	0	0	0	7	50	10	5
Pila	0	0	7	54	0	0	0	0	7	54	10	6
Sta. Cruz	3	42	9	66	0	0	0	0	12	108	18	11
Pakil	0	0	1	3	0	0	0	0	1	3	1	b/
Siniloan	0	0	1	29	0	0	0	0	1	29	1	3
Calauan	0	0	2	13	0	0	0	0	2	13	3	1
Alaminos	0	0	1	4	0	0	0	0	1	4	1	b/
Liliw	2	19	1	10	0	0	0	0	3	29	5	3
Sub-total	22	601	40	307	5	17	1	73	68	998	100	100
Cavite												
Carmona	1	8	0	0	0	0	0	0	1	8	100	100
Sub-total	1	8	0	0	0	0	0	0	1	8	100	100
Batangas												
Sto. Tomas	0	0	1a/	64	0	0	0	0	1a/	64	100	100
Sub-total	0	0	1a/	64	0	0	0	0	1a/	64	100	100
TOTAL	54	1,267	65	567	35	202	3	153	157	2,189	0	0

Source: Laguna Lake Development Authority
Capitol, Pasig Metro Manila

a/ - breeding farms b/- less than 0.51

Table IV.7.4 Distribution of the Number of Industries and Employees by Type

Types of Industries	Industries		Employees		Employees Per Industry
	Number	Percent	Number	Percent	
Agricultural Feedlots	157	66	2,189	21	14
Food Processing	33	14	3,423	32	104
Meat Processing	7	3	1,135	11	162
Feed Processing	5	2	313	3	62
Fruit and Fruit Juice Processing	7	3	271	3	39
Flour Milling and Manufacturing	4	2	1,070	10	267
Coffee Manufacturing	5	2	1,340	13	268
Cooking Oil Refining Manufacturing	11	5	364	3	33
Slaughter House and Dressing Plant	8	3	437	4	54
Total	237	100	10,542	100	44

Source: Laguna Lake Development Authority
Capitol, Pasig, Metro Manila

Table IV.7.5 Summary of Agro-Based Industries by Province and Type

Type of Industries	Rizal		Laguna		Cavite/Batangas		Total	
	Number	Employees	Number	Employees	Number	Employees	Number	Employees
Agricultural Feedlots	87	1,119	68	998	2	72	157	2,189
Food Processing	17	2,388	15	1,020	1	15	33	3,423
Meat Processing	5	585	1	450	1	100	7	1,135
Feed Processing	4	268	1	45	0	0	5	313
Fruit and Fruit Juice Processing	3	210	4	61	0	0	7	271
Flour Milling and Manufacturing	4	1,070	0	0	0	0	4	1,070
Coffee Manufacturing	4	1,300	1	40	0	0	5	1,340
Cooking Oil Refining and Manufacturing	7	262	4	102	0	0	11	364
Slaughter House and Dressing Plant	5	343	3	94	0	0	8	437
Total	136	7,545	97	2,810	4	187	237	10,542

Source: Laguna Lake Development Authority
Capitol, Pasig Metro Manila

Table IV.7.6 Number of Agro-Based Industries

	Agricultural Feedlots	Food Processing Manufacturing	Cooking Oil Refining/ Manufacturing	Feed Processing	Slaughter House/Dressing Plant	Total
			(number)			
Quezon City						
Rizal						
Antipolo	23	0	0	0	0	23
Muntinlupa	0	3	0	0	0	4
Angono	1	0	0	1	0	1
Taguig	22	9	2	0	0	34
Cardona	4	0	0	0	0	4
Pasig	7	13	3	0	0	28
Morong	4	0	0	3	0	4
Marikina	0	2	0	0	0	2
Baras	5	0	0	0	0	5
Taytay	1	1	0	0	0	2
Cainta	0	1	0	0	0	2
Pililia	3	0	0	0	0	3
Montalban	3	0	0	0	0	4
Tanay	8	0	0	0	0	8
Teresa	6	0	0	0	0	6
Sub-Total	87	33	7	4	0	136
Laguna						
San Pedro	8	2	1	0	1	12
Binan	3	0	0	0	1	4
Sta. Rosa	3	3	0	1	0	7
Cabuyao	10	3	1	0	0	14
Calamba	7	4	0	0	0	11
Los Banos	1	1	0	0	1	3
Sta. Cruz	12	2	1	0	0	15
Magdalena	0	2	0	0	0	2
San Pablo City	0	2	1	0	0	3
Alaminos	1	2	0	0	0	3
Bay	2	0	0	0	0	2
Victoria	7	0	0	0	0	7
Pila	7	0	0	0	0	7
Pakil	1	0	0	0	0	1
Siniloan	1	0	0	0	0	1
Calauan	2	0	0	0	0	2
Liliw	3	0	0	0	0	3
Sub-Total	68	21	4	1	3	97
Cavite						
Carmona	1	2	0	0	0	3
Batangas						
Sto. Tomas	1	0	0	0	0	1
TOTAL	157	56	11	5	8	237

Table IV.7.7 Schedule of Fees for Environmental Permit for Investment Enterprise LLDA, 1990

Category of Enterprises	Size (Units)	Fee (Pesos)
Industrial	1.) less than P5 million	800.00
	2.) P5-20 million	160/M
	3.) more than 20 M	4000.00
Agro-Industrial		
Piggery	1.) less than 1000 head	800.00
	2.) 1000-5000 head	0.80/head
	3.) more than 5000 head	4000.00
Poultry	1.) less than 10,000 birds	400.00
	2.) 10,000-50,000 birds	0.04/bird
	3.) more than 50,000 bird	2000.00
Duck	1.) less than 2,000 birds	400.00
	2.) 2,000-10,000 birds	0.20/bird
	3.) more than 10,000 birds	2000.00
Lake Port, Wharps and Marina	1.) less than 25 vessel	800.00
	2.) 25-100 vessell	32.00/vessel
	3.) more than 100 vessel	3200.00

Source: Laguna Lake Development Authority
Capitol, Pasig Metro Manila

Table IV.8.1 Educational Attainment of Household Family Members by Barangay, 1989

Barangay	Educational Attainment							Total
	Elementary			High School		College & Vocational	Did not go to School/_1	
	1-3	4-5	6-7	1-2	3-4			
Palay Palay	48	53	70	44	49	22	9	295
Punta	20	27	24	7	28	20	2	128
Bayugo	53	50	44	27	30	9	1	214
3rd District	18	28	37	23	56	29	0	191
2nd District	3	7	8	2	30	19	0	69
1st District	17	19	38	7	60	36	0	177
Sipsipin	36	56	51	46	84	21	9	303
Bagumbong	61	65	70	35	133	46	0	410
Lubo	32	36	59	50	68	15	1	261
Pagkalinawan	31	18	17	14	27	8	12	127
Poalaman	6	7	13	4	4	3	10	47
Total	325	366	431	259	569	228	44	2,222

/_1: Includes young children and old adults who were not able to attend school.

Source: Farm Economic Survey, 1989

Table IV.8.2 Number of Pupils and Teachers by Barangay, Jala-Jala Municipality, School Year 1989-1990

Barangay	Grade						Total	Teacher	
	1	2	3	4	5	6		Principal /2	Classroom Teacher
	(Number)							(Number)	
Sipsipin	90	64	67	73	56	45	395	1	11
Jala-Jala Central /1	179	165	155	152	175	104	930	1	23
Paalaman	11	12	10	10	-	-	43	-	2
Bayugo	76	87	73	63	63	60	422	1	12
Punta	57	58	56	63	58	40	332	1	11
Palay-Palay	38	39	34	35	23	32	201	1	5
Lubo	36	35	32	22	29	24	178	1	6
Pagkalinawan	59	60	40	35	38	30	262	1	7
Bagumbong	107	104	106	69	71	65	522	1	15
Total	653	624	573	522	513	400	3,285	8	92

/1: Includes 3 barangay districts: Special District, 2nd District, and 3rd District.

/2: Includes 2 Head Teachers (one each for Bayugo and Pagkalinawan) and two Teachers Incharge (one each for Palay-Palay and Lubo).

Source: District Office, Department of Education, Culture and Sports, Pililla, Rizal.

Table IV.8.3 Number of High School Students Enrolled by Type of High School, Jala-Jala, Rizal, School Year 1989-1990

Year	High School		Teachers	
	Barangay/ 1	Private/ 2	Barangay/ 3	Private
First Year	204	126	)	
Second Year	96	131	) 9	13
Third Year	71	116	)	
Fourth Year	65	100	)	
Total	436	473	9	13

/_1: Includes Bagumbong Barangay High School and Malaya Barangay High School extension at Barangay Bayugo with 100 first year students.

/_2: Refer to St. Michael Parochial High School.

/_3: Includes one school head who also handles some academic subjects.

Source: DECS Division Office
Capitol, Pasig, Metro Manila

Table IV.8.4 Nutritional Status of Children in Barangays, Jala-Jala Municipality, September, 1989

Barangay	Nutritional Status					Total
	Normal	Mild	Moderate	Severe	Over-weight	
	(Number of Children)					
Sipsipin	72	67	59	14	17	229
First District	57	36	43	14	16	166
Second District	37	36	31	10	12	126
Third District	41	55	38	10	10	154
Bayugo	70	56	43	14	11	194
Punta	84	50	38	16	18	206
Palay-Palay	23	42	33	10	9	117
Pagkalinawan	43	38	36	9	11	137
Lubo	24	36	34	10	13	117
Bagumbong	63	28	46	15	18	170
Paalaman	n.a	n.a	n.a	n.a	n.a	n.a
Total	514	444	401	122	135	1,616

n.a.: not available

Note: First degree - mild; second degree - moderate; third degree - severe; and overweight (considered also malnourished).

Source: 1989 Municipal Data: Jala-Jala, Rizal (Prepared by the Municipal Agricultural Officer, Department of Agriculture).

Table IV.8.5 Number of Households with Sanitary Toilets and Potable Water Supply, Jala-Jala, 1988

Barangay	Number of Households with: /1	
	Sanitary Toilet	Potable Water Supply
Sipsipin	112	75
First District /2	150	126
Second District	111	53
Third District	109	56
Bayugo	172	77
Punta	115	120
Pagkalinawan	59	33
Lubo	123	38
Bagumbong	147	106
Palay-Palay	82	44
Total	1,180	728

/1 Total for the municipality = 3,156
/2 Includes Barangay Palaman

Source: Municipal Health Center
Department of Health
Jala-Jala, Rizal

FIGURES

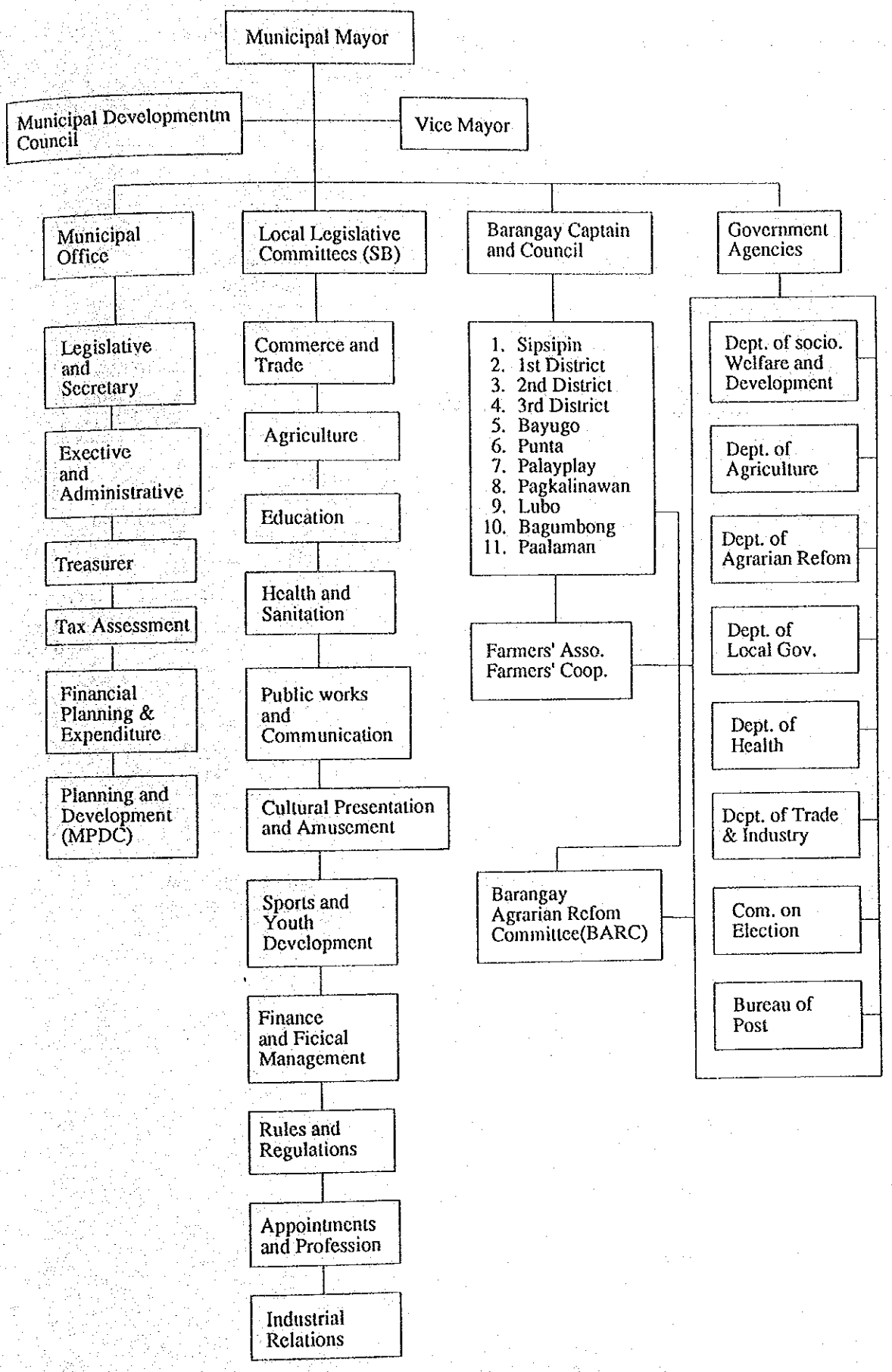
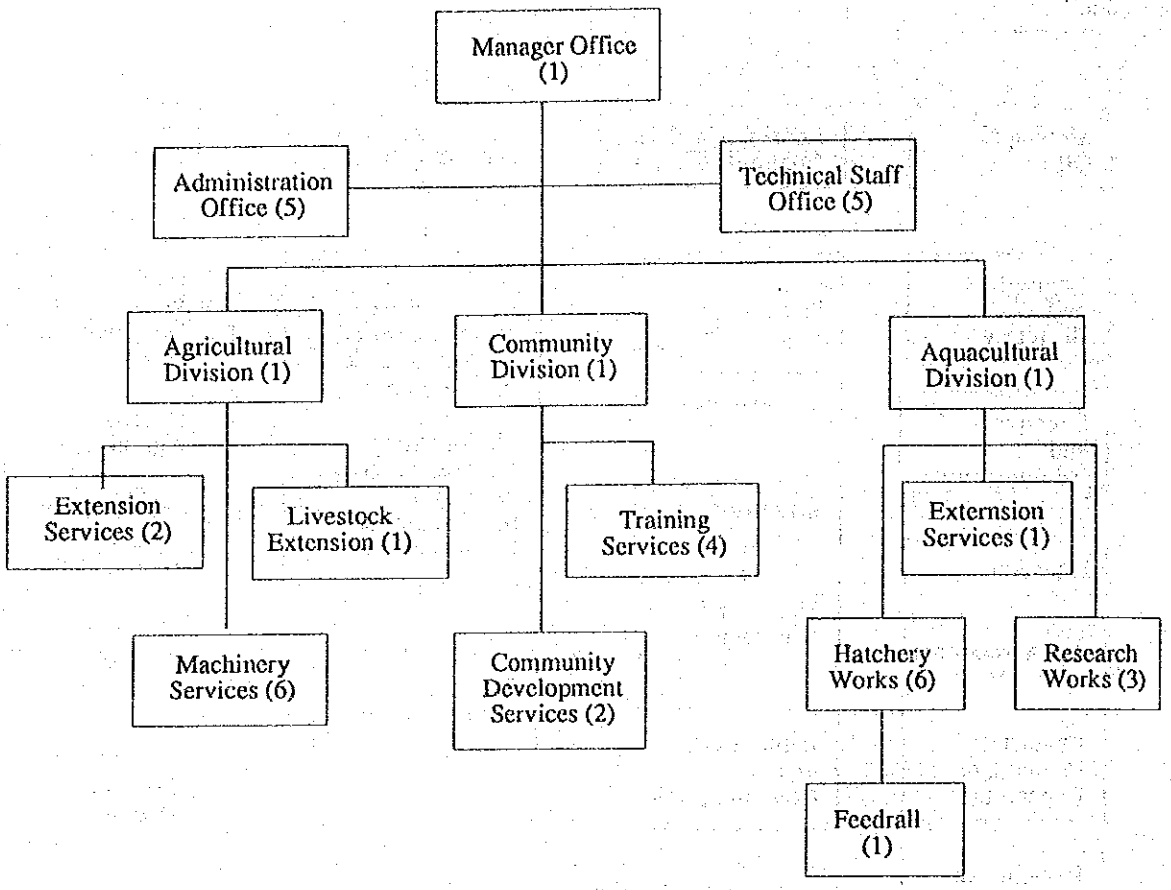


Fig. IV.4.1 Municipal Administration Organization Structure

Fig. IV.4.2 Agro-Aquatic Development Center, MERALCO Foundation Inc.

ORGANIZATION CHART



Remarks: - Figures in parenthesis in the above show the present staffing of the Center.
- The breakdown of staffing by speciality and/or designation is as follows:

1. Head of Center
2. 5-Administration staff
3. Agronomist (head of Agric. Division)
4. Horticulturist (Extension)
5. Agronomist (Extension Assistant)
6. Livestock Specialist
7. 5-Farm Attendants
8. Tractor Operator
9. Sociologist (Community Development Division)
10. 5-Technical Staff
11. Aquaculturist (head of Fishery Division)
12. Technician (Fishery Extension)
13. Sr. Reserach Officer
14. 2-Research Assistant
15. Technician (Hatchery work)
16. 5-Fishery Aid (Hatchery work)
17. Feedrall Operator
18. Technician (Training Service)
19. 3-Trainer (Training Service)
20. 2-Community Development Worker

ANNEX-V

AGRICULTURE AND AGRO-ECONOMY

ANNEX- V

AGRICULTURE AND AGRO-ECONOMY

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AGRICULTURE AND AGRO-ECONOMY

1. GENERAL

This report presents the results of agricultural study in the area of 4,930 ha, which is administratively belongs to municipality Jala-Jala, Rizal province, Region IV.

2. SCHEDULE AND PROCEDURE OF STUDY

2.1 Collection of Data and Information

Data and information used in this study are provided by following government agencies and private associations:

1) Bureau of Agricultural Economics (BEAcon)
2) Bureau of Agricultural Statistics (BAS)
3) Provincial Agricultural Office, DA
4) Office of Municipal Agricultural Officer (MAO), DA
5) Office of Municipal Agrarian Reform Officer (MARO), DAR
6) Bureau of Plant Industry (BPI)
7) Bureau of Animal Industry (BAI)
8) Bureau of Cooperative Development
9) MERALCO FOUNDATION INCOOPERATION (MFI)
10) Philippines Crop Insurance Cooperation

2.2 Interview Survey on Sample Farmers

In order to clarify the present farm economic situation in the study area, a interview survey on sample farm household of 395, selected rondamly, was conducted during first field survey period in 1989. The interview survey contains information pertaining to the farm and the household such as number of family, land holdings, tenure of operation, inventory of farm machinery and livestock, crops and area cultivated, farming practices, income from other sources, cost of living allowance and farmers' intention on improving farm management and selection of crops. They are:

Barangay	No. of Household	No. of Sample Farmer	Share in Total Household (%)
Sipsipin	358	58	16.2
District I	370	32	8.6
District II	243	12	4.9
District III	242	36	14.9
Bayugo	410	39	9.5
Punta	365	23	6.3
Palay-Palay	231	45	19.5
Pagkalinawan	210	23	11.0
Lubo	211	46	21.8
Bagumbong	414	75	18.1
Paalaman	102	6	5.9
Total	3,156	395	12.5

Note : Data Source;Annual Statistics, Jala-Jala Rural Healtu Center, 1990

3 PRESENT AGRICULTURAL SETTING

3.1 Land use

The agricultural land has a total extent of 1,440ha or 30% of the study area. The other land are respectively of grass land (cogonal area) 1,360ha or 27% , bush/shrub 1,520 ha or 30%, forest 280 ha or 6% and buildings or residence 330 ha or 7%(Table V.3.1).

Present Land Use (ha)

Land Categories	Steeply Sloped Mountains	Lower Terraces	Alluvial Fans	Total
Agricultural Land:	310	450	680	1,440
- Irrigated Paddy Field	0	0	450	450
- Rainfed Paddy Field	0	270	50	320
- Upland Field	10	50	100	160
- Orchard Garden	170	130	50	350
- Coconut Plantation	70	0	30	100
- Others	60	0	0	60
Non-Agricultural Land	2,360	740	60	3,160
- Forest	200	80	0	280
- Bush/Shrub	1,150	340	30	1,520
- Grass land	1,010	320	30	1,360
Residence Yard/Others	10	150	170	330
Total	2,680	1,340	910	4,930

Paddy fields occupying 770ha or 53% of total agricultural land have been developed on low lying area (500ha) and a part on gently sloped terrace (270ha). About 450 ha of these paddy fields are irrigated by communal irrigation systems. However, the rainy season cropping is practiced only for 350 ha out of the irrigable paddy field since rainfall and river water discharges fluctuate to a certain extent. Due to quite limited available water, the dry season cropping is limited to only 50 ha paddy and 20 ha vegetables and some corn production. About 160ha of upland fields are utilized for traditional crops such as corn, root crops, vegetables, etc. The remaining area of 160 ha are used for plantations such as mango, citrus, banana and industrial crops such as coconuts (100 ha),coffee, cacao, etc (60 ha).

3.2 Land ownership and tenure systems

Before implementation of the agrarian reform, the study area including the mountainous area as a whole was belonging to nine land owners. Majority of farm land had been reclaimed as paddy field for rice plantation of those land owners. The farmers who are the beneficiaries of the current agrarian reform were the peasant employed in those rice plantation.

DAR as of the end of April, 1990 has already distributed 3,460 emancipation patents to 1,670 farmer beneficiaries covering 1,650 ha . Of which the farm land shares 1,000 ha, housing yard 320 ha and non-cultivated land 330 ha The present land tenure status of farms in the study area showed that about 73% are owner operators and/or amortizing owners under the current agrarian reform. The remaining 27% of the farmers are either renters, overseers or casual workers to be employed by those new owner farmers.

The land distribution conceived in the agrarian reform program is as summarized below:

Plan of Land Distribution in Jala-Jala Area

Size of Land Distribution Unit	Number of Farmer Beneficiaries	Proportional Extent (%)
Housing Yard (ha):		
>0.10	1,306	68.0
0.10 - 0.25	616	32.0
Farm Land (ha):		
0,25 - 0.49	557	29.0
0.50 - 0.99	826	43.1
1.00 - 1.49	391	20.1
1.50 - 1.99	96	5.0
2.00 - 2.45	20	1.2
2.50 - 2.99	10	0.5
3.00 - 3.49	5	0.2
3.50 - 5.00	17	0.9

3.3 Farm production and farming practice

As shown in Table V.3.2, agriculture is the mainstay of the rural economy in the study area. The major crops are paddy, corn, root crops, vegetables, coffee, cacao, and fruit trees. Root crops include taro, sweet potato, yam and cassava, while vegetables include string beans, tomatoes, squashes, eggplants, sponge gourds, bitter gourds, bottle gourds, watermelons, etc. Fruit trees include mango, citrus, guanabana, jackfruit, banana, etc. Among the above, citrus plantation is now development as the new diversified crop in the lower terrace area. Besides, coffee plantation in narrow valley is the essential cash source for the local farmers in the mountainous area.

In 1988, the total paddy production stood at about 1,540 tons (including upland paddy). Paddy planted in the wet season has increased rapidly at an annual rate of 8% from 461 ha (1983) to 703 ha (1988), and as at 1989, reclamation of paddy field has been accomplished over 770 ha .Total production of paddy increased only about 5% annually, from 968 tons to 1,265 tons during the said period. However, the unit yield of paddy remained as low at 2.1 ton/ha on an average. The yield of the rainy season paddy widely varies from 1.8 ton/ha to 4.3 ton/ha. Dry season paddy planted during the past six years averaged 50 hectares. The yield of dry season paddy ranged from 2.0 ton/ha to 3.8 ton/ha and 2.8 ton/ha on an average. A low productivity of paddy (Table V.3.3) are attributed to crop damages caused by typhoon (79%), drought (68%), and pests and diseases (67%). Less use of farm inputs due to luck of basic infrastructure and inadequate farm guidance or technical extension services is another constraint in paddy production.

Vegetables are planted for about 70 hectares in 1988 (Table V.3.4). Total production of vegetables is estimated about 470 tons. More than 60% of vegetable production consist of bitter gourd, string beans and tomatoes. Root crops are about 90 hectares and their total production is about 680 tons (Table V.3.4).

Orchard plantation has been developed about 350 ha in the entire study area (Table V.3.5). Out of the total planting area, most 85% or 290 ha is extended in the lower terrace and/or valley portion in mountain area. Approximately 1,130 farm households grow orchard trees, however, the regular orchard farmers are so far only 45 households. Greater remains grow limited trees as sub-income source. At present, main production of orchard are mango and banana. these production are as low as 3.5 to 5 ton/ha. Major constraints in these production are use of traditional varieties in case of mango, while serious typhoon damage on matured stem in case of banana. A part of citrus is just reached over the harvesting stage .The initial yield is estimated approximately 6 ton/ha. In the future, it will be expected to harvest more than 15 ton/ha when those citrus trees are maturated.

For paddy cultivation, the soils are prepared by use of draft animals. Use of power tillers or tractors is still rare in the study area. All the paddy cultivators use the high yielding variety (HYV). In reality, however, use of certified seeds or quality seeds is limited to less than 5% of total farmers. Majority of farmers consecutively use owned seeds which were obtained from the preceding production and those has been seriously contaminated in varieties .In most cases, seedlings is prepared from June to August for the wet season cropping and November to January for the dry season cropping. HYV prevailing in the area is IR-42, IR-36, IR-66 and IR70. The seedlings are transplanted to the main fields with the plant spacing at 20 cm x 20 cm. Regular transplantation with a spacing at 20 cm x 20 cm is predominant in this practice. Use of chemical fertilizers is limited to small extent where road network is rather adequate. urea is dominantly used at the application rate of about 100 kg per hectare. Recently, such compound fertilizers as 14-14-14, 16-20-0 and 21-0-0 are also introduced for paddy production. Weeding is usually done once by use of rotary-weeders during the initial growing stage, and thereafter , controlled by hand, time to time. Recently, some 46% of the farmers have introduced herbicides (mostly in liquid form) into the weeding practices. Harvesting including reaping, threshing and winnowing are commonly done on a contract basis by use of hired labor. The payment is, in most cases, made in harvested paddy by sharing rate at 1:6 with land owner.

Total labour force spent for ha-operation is estimated at about 90 man-days at present. More than 50% of the said labor force is mainly used for land preparation (11 man-days), transplanting (11 man-days) and harvesting (13 man-days). Both animal and mechanical power either hired or owned for land preparation is managed by use of family labor (Table V.3.6).

3.4 Agro-related production

3.4.1 Fishery

The aquaculture of such fishes as tilapia, bighead-carp and milk fish in lake Laguna contributes in significant extent to the economy of the study area. The fishing area of Jala-Jala occupies about 9,400 ha in lake Laguna of which 1,450 ha is used for 12 blocks of fishpens. Greater remain is considered to be not suitable for setting of fishpens or cages due to shallow shoal, and thus, hard to maintain effective water depth in the dry season.

At present, about 700 households are engaged in fishing. Among them, the licence households for using the said fishpens under contract with Laguna Lake Development Authority LLDA) are 178 . Remaining 612 household are the part time engagement and/or the casual labourers for aquaculture. The total production of aquaculture in 1988 is about 530 tons of fish and 480 tons of snails.

According to the statistical data provided by LLDA, the total fish production in the lake has ben recently reduced significantly, and overcome with apprehension on fishery life. Major constraints on such reduction of fish production is considered to be a water contamination due to oversetting of fishpens as well as increase flow of drainage water from urban area surrounding the lake.

3.4.2 Livestock

Most of farmers in the study area are also characterized as small scale backyard raisers of livestocks and poultry (Table V.3.7). The livestock include water-buffaloes, cattle, hogs and goats. Poultry includes chickens and ducks.

Recently, number of beef cattle has been increased to 1 - 2 heads/household, however, cattle grazing is always faced a shortage of forage. Chickens and ducks are the typical backyard grazing and contribute to the local consumption.

Livestock in the Study Area (heads)

Beef Cattle	Water Buffaloes	Swine	Goat	Horse	Chicken	Duck
582	771	445	455	168	3,630	6,580

Among the livestock presented above, water buffaloes, swine and chicken are almost evenly grazed in each barangay. As for beef cattle grazing, barangay Bayugo and Punta have a grazing head more than two times of other barangays. Duck grazing is mostly concentrated in barangay Sipsipin and Bagumbong .

3.5 Farm Economy

3.5.1 Farm and household characteristics

The socio-economic characteristics in the Study Area have been investigated primarily through the farm economic survey among the farm households and the Barangay captains as well as the interviews with the various local government and non-government institutions.

a) Far economic survey

Farm economic survey was conducted to grasp the present econojmic status of farm households.

The number of households interviewed was 395, which corresponds to about 14% of the total households of the Municipality Jala-Jala. The sample farmers were selected at random from the farmers' list prepared by the Barangay captains.

b) Farm size by type of crops

The size of farm area operated is as follows (Table V.3.9);

- paddy cultivator : 0.1 to 3.0 ha with the average of 1.0 ha.
- paddy cum upland : 0.1 to 4.0 ha with the average of 0.7 ha.
- upland cultivator : 0.3 to 5.0 ha with the average of 0.4 ha.
- orchard plantation : 0.3 to 5.0 ha with the average of 0.5 ha.

c) Crops planted

The number of paddy growers is 92% of sample farmers and the remaining 8% are upland or orchard growers who have farm land on terraces or mountain (Table V.3.10 and V.3.11).

d) Farm input

About 87% of the farmers apply fertilizers using urea at about 100 kg per hectare. Other fertilizers used are compound types, such as 14-14-14, 16-20-0 and 21-0-0. They are;

Ferti-lizer	Average kgs. per ha	No. of rice farmers applied	Ratio of paddy farm applied	Weight ave. applied in kgs.	Actual Q'ty applied(kg) N	P2O5	K2O
Urea	108	319	0.87	94	42	0	0
T.S.P.	47	4	0.01	1	0	0	0
14-14-14	63	53	0.15	9	1	3	2
16-20-20	75	10	0.03	2	0	1	0
21-0-0	89	14	0.04	3	1	0	0
Total		400	1.10	110	45	4	2

Source:Farm Economic Survey

As shown in above table, nutrient elemnts applied to rice faming is estimated as 45 kg/ha of nitrogen, 4kg/ha of P2O5 and 2 kg/ha of K20. Qantity of seed applied per ha is 75kg of certified seed or 100 kg of ordinary seed. Average qantity of pesticides applied to rice field is 0.9 liter per ha of liquid and 17.2 kg of granular, and that of herbicide is 0.9 liter per ha of liquid and 28.9 kg of granular.

Under the current implementation of agrarian reform program, about 70% of the total farmers have received the farm land and registered as owner cultivationship. With broad classification, five types of farms are recognized as the production units of farm economy according to the results obtained from the Farm Economic Survey.

Farm Household by Farm Types

Farm Types	Households	Proportion (%)
- Paddy Cultivator	710	43
- Upland Crop Cultivator	260	16
- Paddy cum Upland Crop	80	5
- Orchard Plantation	160	9
- Others	460	27

Farm size varies from 3 ha as the maximum holding as specified in the agrarian reform law to 0.3 ha as the smallest holding. The average holding size is a little smaller than 1 ha. About 70% of the farms are amortizing owners and remaining 30% is still land less farmers. These landless farmers are, at present, seasonally employed by the new owner farmers, while in off-farm season, they shall get other job outside of the study area.

Annual income level of each typical farm is estimated based on the farm economic survey conducted in Phase I stage. Mean average income and living expenditures are as summarized as follows:

Farm Economy by Farming Types

Descriptions	Paddy Cultivator	Upland Crop Cultivator	Paddy/Upland Crop Cultivator	Orchard Plantation
Farm income	8,550	4,300	6,400	4,800
Sub-farm income	2,500	4,900	3,000	4,900
Off-farm income	13,600	13,600	13,600	13,600
Total Income	24,650	22,800	23,400	23,800
Farming cost	2,100	1,100	1,600	1,200
Living Expenditure	18,800	18,800	18,800	18,80
Total Out go	20,700	19,700	20,200	19,800
Balance	3,750	2,700	3,000	3,300

As seen in the above Table, the annual income from both crop production and side business is not sufficient to meet the living expenditure of some P18,770 which has been estimated as the mean average for standard size of family consisting of 6 persons. In fact, almost all of the farmers are being engaged in the off-farm works especially in such advanced are as Antipolo, Tay-Tay, Metro Manila , etc., and supplement the income to a significant extent. The major sources of sub-income are livestock grazing and free fishing in the lake. A part of farmers also got some additional income from such side business as operation of small rural shop called sali-sali store, garment, production of ceramic articles, transportation services by use of jeepny, etc. Other than the labour work outside of the study area, remittance from kindreds who have been engaged in jobs in the advanced area (Table V.3.12).

3.5.2 Off Farm Activities and Off-Farm Income

The size of farm in the study area imposed a limit on the available labor force of the farming household and consequently on its productivity to earn higher farm income. Thus, some members of the family household have to find other alternative sources of income other than farming. In addition to the income from their own farming business venture, the households are engaged in various off-farm activities. This includes working in other farm such as planting, weeding and harvesting, renting to others their farm equipment and farm lands, and in various non-farm activities such as cottage industry, sari-sari store, and others.

Survey results, as presented in ANNEX-IV show that a farm household earns an average of ₱18,447.60 annually from off farm activities. The frequency of farms households reporting these off-farm activities varies from one to 118 households in a sample of 350 farms. Some households may have one or more activities depending on the available members who have been employed. Likewise, the average income per household from an activity or work engaged in, varies from ₱5.71 (interest earned on credit) to as high as ₱4,150.65 (other occupations). The need to find more work for the family household members who would otherwise waste their idle time is always a concern to improve the level or living in the study area.

3.5.3 Living Expenditure of Household

Generally, the standard of living in the study area is relatively low if expressed in the family expenditure at about ₱18,770 per year for a family of 6 members. The average family expenditure for food items is about 44.5% and for rice consumption alone, a little less than one third of the total cost of living allowance (Table 35). Other significant cost items include education (120%) clothing (7.9%), personal and medical area (7.4%) and tobacco and cigarettes (70%). Expenditures for all other items are small to a negligible extent.

By grouping the items in the above Table, the summary presented below shows that the two most significant cost items would include food, beverage, and tobacco (51.6%) and services (26.6%) or a total of 78.2%. The proportionate expenditure for other items ranges from 3.1% (fuel, light, and water) to 7.8% (for clothing).

Item	Amount	
	Pesos	Percentage
Food, beverage & tobacco	9,676	51.6
Clothing	1,474	7.8
Housing and repairs	729	3.9
Fuel, light and water	592	3.1
Services	4,985	26.6
Miscellaneous	1,314	7.0
Total	18,770	100.00

3.6 Marketing facilities and structures

The farm products produced in the study area consist of perishables and semi-perishables. Paddy is semi-perishable while root crops, vegetables and fruits are highly perishable products. In case of paddy, it would need sufficient drying (usually 14-16% moisture content) to be stored for a longer period. In the study area, only the Meralco MFI has a batch dryer with a capacity of 20 cavans per six hours for their use while most farmers used sundrying of paddy on mats, nets and on pavements. The drying capacity of one paved basketball court is about 30 cavans of paddy. After drying, the farmers store the produce at their house for future consumption or safe keeping or a portion is sold as paddy or as milled

rice. In some barangays, there are one or two "kiskisam" rice mills of 15-20 cavan/8-hour capacity to service the local milling needs of residents. Only one "baby cono" mills of 110 cavan/8 hr. capacity near the poblacion is available for higher quality milling. The mill includes a warehouse with 600-cavan capacity.

About 75% of other products such as corn, root crops, fruits and vegetables are generally sold in the market outlets in fresh form without any grading or sorting. Available local materials for package such as sacks and baskets are used by the farmers while transporting these products to market or to consumers. Facilities for grading and standardization of these farm products are not available in the study area. On the other hand, coffee berries sold by farmers are sun dried with pulp. No coffee bean processing is done in the study area.

The sale of live livestock and poultry is done with or without weighing. The weights of carabaos, cattle, goats and hogs sold by the farmers are usually estimated based on the judgement of the buyers and both parties agreed on a price to transact the sale. Live chickens and ducks could either be weighed or not when sold in the market. Only small weighing scales are available at the public market outlets for weighing. Milk sold to market outlets is measured in liters while the prices of eggs sold are based on their sizes. Perishable products of livestock such as milk requires faster delivery to the buyer to avoid deterioration. The first buyer may stored the milk in cold storage for later processing into pasteurized milk or local cheese. On the other hand, duck eggs sold by the farmers could be processed further into "balut" (semi-hatched eggs cooked) and "penoy" (unfertilized eggs cooked). The buyers usually have the necessary facilities for further processing.

Fish products sold by fishermen estimated at 110 tons annually are fresh or iced in boxes for transport to further place within the province or to Metro Manila area. Two fish ports are available (one at Poblacion and one at Bagumbong) for unloading fish.

Transportation facilities for marketing the farm products include jeepneys (for passengers or owner types) and small boats (motorized) numbering about 50 and 90 units, respectively.

4. AGRICULTURAL DEVELOPMENT PLAN

4.1 Land Resource and Land Use Plan

As of the middle of May, 1990, the land distribution has been achieved about 1,650 ha. The distributed land is mostly the paddy and upland field which had been developed in the lowlying area (see Table V.4.1) and being scheduled on the Program A of agrarian reform. The distributed land includes some 120 ha of upland field, 720 ha of paddy field,480 ha of non-cultivated land and 250 ha of homestead. Out of the non-cultivated land of 480 ha, 60 ha land is considered to be possible to reclaim for the crop farming . The remaining 420 ha land is of shrub and/or grass land. Among these land, some 130 ha of

shrub extending over the mountainous area is not suitable for economical land use and/or agricultural investment due to steep topography and shallow soil depth. The other 290 ha lying on lower terrace area is classified into arable land in class IV, however, it is hardly expected to develop for intensive agricultural production due mainly to unfavorable soil and topographic conditions.

The land of 3,280 ha being remained in the current agrarian reform includes some 520 ha of farm, of which 100 ha of upland field and 20 ha of paddy field in Bagumbong and 30 ha of paddy field in Punta area is still under negotiation with the land owners. These lands are recognized as suitable for intensive agricultural development investment. Remaining 370 ha land consisting of 360 ha of plantation and 10 ha of common field are patchy scattered widely in the mountainous area.

The land of 3,280 ha excluded from the current agrarian reform program A is mostly lying over the steeply dissected mountainous area and a part in the lower terraces. Almost all of the land is classified into class VI :non-arable land. This means that an economic development is hardly expected on these land. Since the vegetation as well as ecology is seriously degenerated in this area, the soil and land conservation measures are essential and urgently needed. Thus, in this development planning, it is recommended to pursue reforestation for the entire mountainous area so as to maintain total ecology and water shade environment.

The proposed land use has been planned based on the above basic consideration as well as wishes of the farmer beneficiaries. The basic plan is as follows:

	Mountainous/ Hilly Land		Lower Terraces		Alluvial Fans		Total	
	Present	Proposed	Present	Proposed	Present	Proposed	Present	Proposed
Agricultural Land:	310	960	450	1,000	680	730	1,440	2,690
Paddy Field	0	0	270	480	500	500	770	980
- Irrigated	0	0	0	450	450	500	450	950
- Rainfed	0	0	270	30	50	0	320	30
Upland Field	10	10	50	110	100	140	160	260
- Irrigated	0	0	0	10	0	120	0	130
- Rainfed	10	10	50	100	100	20	160	130
Plantation	300	320	130	190	80	90	510	600
- Orchard	170	260	130	190	50	90	350	540
- Coconut	70	0	0	0	30	0	100	0
- Others	60	60	0	0	0	0	60	60
Agro-Forest	0	630	0	220	0	0	0	850
Non-Agric. Land	2,360	1,710	740	190	60	10	3,160	1,910
- Forest	200	1,710	80	190	0	10	280	1,910
- Shrub/Bush	1,150	0	340	0	30	0	1,520	0
- Grasses	1,010	0	320	0	30	0	1,360	0
Homestead/Others	10	10	150	150	170	170	330	330
Total	2,680	2,680	1,340	1,340	910	910	4,930	4,930

At present, the village yard and/or homestead is estimated at about 290 ha in total which is corresponding to about 0.1 ha/household. This unit holding size is rather small if compared with that in other rural area. In this land use planning , however, no special arrangement is made for further expansion of the households since limited farm land in this area.

As for promotion of the reforestation in the mountainous area, it is proposed that the local farmers shall organize themselves into the specific cooperative for forestation, and introduce the Integrated Social Forestation program of the Department of Environment and Natural Resources(DENR). For implementation of the reforestation work, following trees are selected as recommendable species:

- Higher portion in dissected mountain where soil moisture is shortened in a certain months period especially in the dry season.
  - Acacia, Eucalyptus, and Cashew

- Lower part and/or valley portion of mountains where high soil moisture conditions are expected almost throughout the year.
  - Narra and Mahogany, etc.

The nursery of those tree species is prepared by the provincial nursery DENR in Antipolo, however, steady supply of nursery is hardly expected from the said nursery because of small production. Thus, it is proposed to establish nursery farm with farmer growers especially in the mountainous area under promotion of crop diversification program.

4.2 Crop Production Programme

The study area has been inhabited densely as against limited arable land of only 2,830 ha in gross or 57% of the total area. Therefore, in order to achieve self-sufficiency of staple food and financial self-reliance of the beneficiary farmers of agrarian reform as early as possible, cropping intensification and diversification of farm productions are the essential bases. With this understanding, it is planned to pursue the following promotion of agricultural intensification including crop diversification.

(1) Irrigated paddy field

- To diffuse and generalize double cropping of paddy a year
- To increase unit yield to around 5 ton/ha/crop season
- To stabilize paddy production

The proposed rice cropping pattern in CIS areas is prepared as illustrated in Fig. V.4.1.

(2) Rainfed paddy field

- To increase unit yield of paddy to 2.5 ton/ha on an average

To the above promotion of rice production increase, the institutional supporting services, i.e., technical extension service, qualified seed supply, steady supply of farm inputs, post-harvest activities, etc. will have to be reinforced and activated.

	Prospective Rice Production				
Land Category	Farm Area	Cropping Area	Unit Yield	Production	Milled Rice
Irrigated Field	950 ha	1,830 ha	5 ton/ha<1	9,150 ton/y	5,950 ton/y
Rainfed Field	30	30	2.5	75	50
Total	980	1,860	-	9,225	6,000

The constraints being prevailing in the rice production are :

- Unstable rain distribution and /or irrigation for rice cultivation
- Inadequate services for farm inputs supply
- Inadequate supply of quality seeds, and serious variety contamination in the prevailing seeds (owned seeds)
- large field operation losses

In the study area, total 15 CIS had been developed, and of them, 13 CIS are being under operation for rice production. Practically, however, these CIS are not always functioning well even in the rainy season due to poor water resources. Accordingly, even

under irrigation services, both of cropped area and paddy yield largely varies, year and year (see TableV.3.2).

As shown in Table V.3.2, the yield of paddy is recorded as high at 4.1 ton to 4.3 ton/ha under good rain distribution. This yielding condition suggests that the soil and land in the study area would be highly response to paddy cultivation, and thus, with provision of adequate irrigation services and modern farming practices, it could be expected more than the present yield.

In fact, high production of paddy has been regularily obtained in the advanced area in Rizal province where CIS has been consolidated satisfactorily (see Table V.4.2). These area are located very close to the national highways, and thus, provided intensive services on both of technical extension and farm inputs supply. With the said advanced conditions, more than 5 ton/ha of yield has been realized as regular production. Table V.4.2 demonstrates that the prevailing rice varietires have a high enough productivity at more than 5 ton/ha.

Making reference to the above production record in the advance areas and taking into account a high suitability of the vertic soils predominant in the existing paddy field, it is expected that the prospective paddy yield with project conditions is estimated to be 5 ton/ha for CIS area. As for the rice yield under rainfed conditions, no drastic change is expected on the farming. Therefore,it is directly refer to the present yield and presumably set 2.5 ton/ha for with project conditions.

The total production of rice will meet the domestic demand of 3,000 ton in 2000 and accordingly, 3,000 ton of excessive rice will be surplus for marketing. Other than the rice production, some 1,680 ton of rice bran, 2,050 ton of husk will also be produced as the by-product. The rice bran is useful for feeding of livestock and/or poultry. Husk is useful as one of the fuel source for small scale industrial operation.

(3) Intensification of Upland Cropping

The upland crop cultivation will be subject to enhance a land productivity and profitability, therefore, intensification cum diversification of crop production are scheduled on the following basis:

- To diffuse and generalize the rotational crop operation with more than 2.5 cropping intensity,
- To diversify the traditional food crops to profitable cash crops.
- To increase crop yield as well as to improve quality of production for successful marketing.

The proposed cash crops are selected taking into account the following conditions:

a. Seasonal adoptability shall be high enough for controlling the harvesting to a certain long period according to the demand in market.
b. The production never conflicts with that from the other producing areas at the market.
c. Price of production do not fluctuate so seriously.
d. The production be solid enough against damages which are generally given during the long transportation.

The proposed cash crops herein preliminarily selected are:

- For dry season cropping : bitter gourd, corn, soybean
- For rainy season cropping : corn, eggplant, tomatoes, string bean, soybean

The production of major crops and prospective marketing values are estimated as shown in Table V.4.3 and the cropping pattern is illustrated in Fig. V.4.1.

In the near future, it is also expected that a part of the upland farming is diversified to an industrialized horticulture, such as plantation of cut-flower, production of pot plants and gardening plant, etc.

(4) Rainfed upland field

The farming conditions in the rainfed upland field do not change drastically from the present setting. To uplift the land productivity as well as profitability of crop production, production diversification will be made with enhancement of livestock production through introduction cum increase of forage crop. As for the upland field lying on steeply sloped land it is proposed to change those farm into agro-forestation and /or reforestation.

To achieve the intensification and diversification of upland crop production and raise the farm economy in upland farmers, the institutional supporting services, such as extension services, qualified seed supply, steady supply of farm inputs, shall be reinforced. Besides, establishment of information services system in respect to the marketing activities is an essential schedule for promotion of this crop production increase programme.

(5) Promotion of Fruit Production Increase

As for the fruit plantation developed in the alluvial fans and lower terraces, production stabilization is emphasized by introduction of modern technology. To this end, reinforcement of technical extension services, including improved farming practices on fertilization of trees, artificial pollination practices, control of sprig, twig/bough, etc. as well as supply of sound seedlings will be made through supporting activities of the proposed rural development center.

The fruit production under intensification program is presumably estimated as follows:

Citrus (Orange):

85 ha x 15 ton/ha	=	1,275 ton
1,275 ton x 0.7	=	890 ton to be marketable as fresh fruit
		380 ton to be out-grade for marketing but useful for agro-processing

(6) Agro-forestation

In higher terrace and sloped area, agro-forestation is proposed as an advantageous economic setting. Promotion of fruit plantation will be scheduled in terraces where soil is deep enough in soil depth. Mango and lime (Karamancy) will be taken up as one of the most recommendable crop. Maturation of these fruits is practically free from typhoon season. Vigorous growth even under dry conditions is also an advantageous feature of these trees.

Annual production of the above plantation will fluctuate to significant extent, year and year, due to rainfed operation and plantphysiological constraint on fertilization of fruit. Annual production of these fruits is estimated conservatively as follows:

Mango (medium size of fruit):

300 ha x 10 ton/ha	=	3,000 ton
3,000 ton x 0.7	=	2,100 ton to be marketable
		900 ton to be out-grade for marketing but useful for agro-processing

Citrus (Karamancy):

580 ha x 7 ton/ha	=	4,000 ton to be all marketable

4.3 Promotion of Animal-Husbandry

In the dry season, majority of wild pasture are dried up, and accordingly, such livestock as cattles, horses, water buffalo, etc.are affected by serious shortages of forages, at present. On the contrary, no enough spaces for producing the forages is available in this study area due to limited arable land. With this background, it is hardly expected to develop livestock more than the present setting. Thus, in this rural development plan, the development goal of animal-husbandry is set forth with particular emphasis on the following schedule:

- Livestock production will be made as the off-farm work of farmers.

- Beef cattle will be the main production in this plan.

- In principle, cattle will graze in the wild pasture land during the wet season, while feeding by use of forage products during dry season.

- The existing water buffaloes shall be gradually replaced in line with the farm mechanization so as to secure forage and pasture for beef cattle farming. As the meat of water buffaloes is less economic value in the market, replacement to beef cattle would be one of the essential diversification to up-grading the farm economy.

- Development potential of daily farming in this area is quite low due to no possibility to reserve forages for maintaining milk production for more than eight months. Then the existing small number of milch cows is also scheduled to be replaced into beef cattle.

- Small livestock, such as sheep, goats, rabbits, etc. will be fed same as the present conditions mainly for the home and/or rural consumption.

- Rather than the above, piggery and poultry will have possibility to some extent to develop the commercial based farming owing to increase in forage products (by-product of the main farm production), such as rice bran, waste of fruit and vegetable productions, etc.

Based upon the preliminary estimation of the basic nutrition of forages and pastures, the prospective livestock farming is foreseen as follows:

Variety of Livestock	Gross Heads to be Fed	Number of Heads to be Marketable
Beef Cattle	1,300	700
Swine	620	520
Poultry	25,900	10,400 (broiler) 378,000 (eggs)

4.4 Promotion of Aquaculture

Since the present setting of fish-pens has shared almost full spaces, there is no possibility for expansion of aquaculture. Therefore, in the time being, the production of fishes might remain same as the present situation, unless special feeding is practised, artificially.

To ensure an economic upliftment of the aquaculture, amendment of the present production pattern and marketing system should be pursued with particular emphasis on the following schedule:

- Introduction of rotational cultivation and systematic harvesting according to the seasonal demand of market,
- Organization of joint marketing system as one of the essential functions of the farmers cooperative society.
- Provision of additional values to an excessive production by introducing small scale processing plant

To the above promotion, it is planned to provide fishery ports for the following locations:

- Punta
- Bayugo
- Pagkalinawan
- Ik-Ik
- Bagumbong

5. AGRICULTURAL BENEFIT AND FARM ECONOMY

5.1 Price Forecast

Economic and financial farmgate prices of farm inputs and outputs were set in order to evaluate the monetary benefit and effects. Prices of international market prices by the World bank with the necessary adjustments, and are all expressed in 1990 constant value as shown in Table V.5.1 for rice and Table V.5.2 for corn.

5.2 Agricultural Benefit

Agricultural benefit to be expected is defined as the difference of net return from crops between the future with Project and the future without condition. The economic net return per ha for each crop was caluculated as shown in Table V.5.7, on the basis of estimated gross income and production cost. They are summarized as follows:

Applying the above net return per ha for each crop to the cropped area, the total annual net return accued from the agricultural production was calculated on both future with Project and without project conditions. Based on this, the agricultural benefit in each CIS area is culculated as show in Table V.5.8 and V.5.9. The agricultural benefit at full development stage were estimated at about 40.9 million pesos. This value includes rice production program, upland crop production, ctrus production and livestock benefit. Agricultural

benefits may be expected to increase linealy year by year, and reach its full benefit about three years after completion of the project.

After implementation of the project, more irrigation water and extension services and establishment of large scale rice mill center at proposed Rural Development Center would be provide to all famers in the Project Area, and crop productivity would improve remarkably. As a result, a significant increase in farm income would be expected in future with Project condition.

5.3 Farm Economy

The impact of the Project on the beneficiary famers was expected analyzing the farm budget of typical representative farmers with average farm size. As mentioned in Section 3.3.6, thier average size are estimated at 1.00 ha, 0.70 ha, 0.40ha and 0.50 ha for paddy farm, paddy-upland farm, upland farm and plantation farm, respectively. Financial net return for each crop was analyzed as shown in Table V.5.7. The results of farm bugdet analysis are shown in ANNEX XII.

The net income under the with project condition would be expected to increase 3 to 8 times as compared in future under the without project condition. The annual net reserve under the future with project condition would also remarkably increase as compared with future without project condition. The increase in net reserve would enable farmers to pay the irrigation fee (3,585 peso/ha), water charge (66 peso/household), land amortization (4,405 peso/ha), annual repayment of rice mill center (2,760 peso/ha), farm machinery (2,484 peso/household), pump station (3,300 peso/ha) and milling charge to be paid (1,200 peso/ha; 5ton/ha).

TABLES

Table V.3.1 Present Land Use

Unit:ha

Land Category	Mountainous Slope Land	Lower Terrace	Alluvial Fans	Total
1. Agricultural Land				
1.1 Paddy Field				
-Irrigated	0	0	450	450
-Rainfed	0	270	50	320
sub-total	0	270	500	770
1.2 Upland Field				
-Irrigated	0	0	0	0
-Rainfed	10	50	100	160
sub-total	10	50	100	160
1.3 Plantation				
-Orchard	170	130	50	350
-Coconuts	70	0	30	100
-Others	60	0	0	60
sub-total	300	130	80	510
Total Agricultural Land	310	450	680	1,440
2. Non-Agricultural Land				
2.1 Forest	200	80	0	280
2.2 Bush	1,150	340	30	1,520
2.3 Grass Land	1,010	320	30	1,360
Total Non-Agricultural Land	2,360	740	60	3,160
3. Homestead/Village Yard	10	150	170	330
Ground Total	2,680	1,340	910	4,930

Table V.3.2 (1/2) Agricultural Production in the Study Area, 1983-1988

Year	1983			1984			1985		
Cropping season	D.S.	W.S	Annual	D.S.	W.S	Annual	D.S.	W.S	Annual
1. Lowland Rice Production									
Planted Area (ha)	56	461	517	45	461	506	50	642	692
Unit Yield (ton/ha)	2.7	2.1	2.2	2.0	3.8	3.6	3.8	4.3	4.3
Production (ton)	150	968	1,119	90	1,752	1,842	190	2,761	2,951
2. Upland Rice Production									
Planted Area (ha)	0	80	80	0	110	110	0	80	80
Unit Yield (ton/ha)	0.0	1.1	1.1	0.0	2.8	2.8	0.0	3.0	3.0
Production (ton)	0.0	88.0	88.0	0.0	302.5	302.5	0.0	240.0	240.0
3. Corn Production									
Planted Area (ha)	-	60	60	-	70	70	-	80	80
Unit Yield (ton/ha)	-	1.5	1.5	-	2.2	2.2	-	3.0	3.0
Production (ton)	-	90.0	90.0	-	154.0	154.0	-	240.0	240.0
4. Root Crop Production									
Planted Area (ha)	-	50	50	-	50	50	15	60	75
Unit Yield (ton/ha)	-	7.0	7.0	-	6.5	6.5	7.0	6.0	6.2
Production (ton)	-	350.0	350.0	-	325.0	325.0	105.0	360.0	465.0
5. Vegetable Production									
Planted Area (ha)	43	59	102	20	70	90	20	70	90
Unit Yield (ton/ha)	1.2	4.9	3.3	5.8	5.5	5.6	5.5	5.5	5.5
Production (ton)	53.0	288.4	341.4	115.7	385.0	500.7	110.0	385.0	495.0
6. Fruit Production									
Planted Area (ha)	-	22	22	12	15	27	10	25	35
Unit Yield (ton/ha)	-	4.5	4.5	3.6	4.0	3.8	5.5	5.0	5.1
Production (ton)	-	99.0	99.0	43.0	60.0	103.0	55.0	125.0	180.0

Source : Office of the Municipal Agricultural Officer
Poblacion, Jalajala, Rizal, 1983, 1984, 1985, 1986, 1987, 1988

Table V.3.2 (2/2) Agricultural Production in the Study Area, 1983-1988

Year	1986			1987			1988		
Cropping season	D.S.	W.S	Annual	D.S.	W.S	Annual	D.S.	W.S	Annual
1. Lowland Rice Production									
Planted Area (ha)	50	643	693	50	541	591	50	703	753
Unit Yield (ton/ha)	2.0	4.3	4.1	3.0	1.9	2.0	3.2	1.8	1.9
Production (ton)	100	2,765	2,865	150	1,028	1,178	160	1,265	1,425
2. Upland Rice Production									
Planted Area (ha)	0	80	80	0	22	22	0	40	40
Unit Yield (ton/ha)	0.0	2.2	2.2	0.0	1.8	1.8	0.0	2.8	2.8
Production (ton)	0.0	174.0	174.0	0.0	38.5	38.5	0.0	112	112
3. Corn Production									
Planted Area (ha)	-	57	57	-	-	-	-	40	40
Unit Yield (ton/ha)	-	2.4	2.4	-	-	-	-	2.8	2.8
Production (ton)	-	138.8	138.8	-	-	-	-	112	112
4. Root Crop Production									
Planted Area (ha)	8	84	92	15	50	65	15	89	104
Unit Yield (ton/ha)	10.5	7.9	8.2	-	19.2	-	-	7.6	-
Production (ton)	84.0	666.5	750.5	-	960.0	-	-	676	-
5. Vegetable Production									
Planted Area (ha)	20	50	70	37	-	-	37	72	109
Unit Yield (ton/ha)	3.2	6.2	5.3	-	-	-	-	6.5	-
Production (ton)	64.0	309.0	373.0	-	-	-	-	468	-
6. Fruit Production									
Planted Area (ha)	15	26	41	-	42	42	-	-	-
Unit Yield (ton/ha)	-	-	-	-	3.6	3.6	-	-	-
Production (ton)	-	-	-	-	151.0	151.0	-	-	-

Source : Office of the Municipal Agricultural Officer
Poblacion, Jalajala, Rizal, 1983, 1984, 1985, 1986, 1987, 1988

Table V.3.3 Accomplishment of Annual Target for Paddy Production, Jala-Jala, 1987
(Municipality Agricultural Office) (Paddy: 1987)

Item	M-99 (Dry Season)			M-99 (Wet Season)			Annual		
	Target	Actual	Accom-plishment (%)	Target	Actual	Accom-plishment (%)	Target	Actual	Accom-plishment (%)
1. Total Area (ha)									
Irrigated	80.0	80.0	100.0	300.0	225.5	75.2	380.0	305.5	80.4
Rainfed	-	-	-	403.0	315.0	78.2	403.0	425.0	78.2
Total	80.0	80.0	100.0	703.0	540.5	76.9	783.0	620.5	79.2
2. Production (ton)									
Irrigated	300.0	303.0	101.0	1,350.0	451.0	33.4	1,650.0	754.0	45.7
Rainfed	-	-	-	1,712.0	598.5	35.0	1,712.0	598.5	35.0
total	300.0	303.0	101.0	3,062.0	1,049.5	34.3	2,053.0	1,069.0	52.1
3. Average Yield (ton/ha)									
Irrigated	3.8	3.8	100.0	4.5	2.0	44.4	4.3	2.5	56.8
Rainfed	-	-	-	4.2	1.9	44.7	4.2	1.9	44.7
Total	3.8	3.8	100.0	4.4	1.9	44.6	2.6	1.7	65.7
4. No. of Farmers									
Irrigated	78.0	75.0	96.2	352.0	164.0	46.6	430.0	239.0	55.6
Rainfed	-	-	-	397.0	301.0	75.8	403.0	315.0	78.2
Total	78.0	75.0	96.2	749.0	465.0	62.1	833.0	554.0	66.5

Source: Municipal Agricultural Office, DA, Poblacion, Jala-Jala, Rizal

Table V.3.4 Upland crop production, Jala-Jala, 1988

	Area (ha)		Production	Yield	No. of
	Planted	Harvested	(ton)	(ton/ha)	farmers
1. Vegetables					
- Pea	16.0	16.0	99.2	6.2	60
- Tomato	14.0	14.0	89.6	6.4	38
- Squash	5.0	5.0	21.3	4.3	28
- Eggplant	6.0	3.5	35.0	5.8	24
- Sponge gourd	4.0	4.0	22.0	5.5	16
- Bitter gourd	15.0	15.0	104.0	6.9	46
- Bottle gourd	5.0	5.0	50.0	10.0	20
- Water melon	5.0	5.0	50.0	10.0	17
sub-total	70.0	67.5	471.1	6.9	249
2. Root crops					
- Taro	50.0	50.0	450.0	9.0	100
- Sweet Potato	11.0	7.0	70.0	6.4	20
- Yam	10.0	10.0	98.0	9.8	20
- Cassava	18.0	11.0	66.0	3.7	20
sub-total	89.0	78.0	684.0	7.2	160

Source : Office of Municipal Agricultural Officer, 1988
Poblacion, Jalajala, Rizal,

Table V.3.5 Perenial Crop Production in 1988, Jala-Jala

Kind of Trees	Net area Planted(ha)	Number of Trees	Production (ton)/_1	Yield (ton/ha)	No. of farmers
- Coffee	31.0	34,441	93.0	3.0	77
- Cacao	5.0	3,125	12.5	2.5	25
- Mango	85.0	2,890	382.5	4.5	212
- Chico	4.0	816	14.0	3.5	40
- Santol	25.0	3,900	112.5	4.5	62
- Atis	3.0	3,333	10.5	3.5	30
- Jackfruit	8.0	1,250	60.0	7.5	40
- Guava	2.0	2,222	16.0	8.0	20
- Starapple	5.0	780	27.5	5.5	125
- Guyabano	17.0	18,887	85.0	5.0	85
- Citrus	(70.0)	(34,000)	(435.0)	(6.2)	(266)
1) Calamansi	5.0	8,000	45.0	9.0	50
2) Szingkom	55.0	22,000	330.0	6.0	183
3) Ladu	10.0	4,000	60.0	6.0	33
- Bananas	(28,0)	(27,220)	(131.0)	(4.7)	(145)
1) Saba	8.0	5,000	40.0	5.0	40
2) Lakatan	3.0	3,333	12.0	4.0	30
3) Latundan	12.0	13,332	54.0	4.5	50
4) Bongolan	5.0	5,555	25.0	5.0	25
- Coconuts	100.0	N.A	100.0	1.0	N.A
Total	283.0	132,864	1,379.5		1,127

/_1 : Estimated from area planted and the yield per hectare.
Source : Office of Municipal Agricultural Officer, 1988
Poblacion, Jalajala, Rizal,

Table V.3.6 (1/2) Unit Labor Requirement under Present Condition(per ha)

Crop	Labor Requirement per Hectare (m-d)	Unit Area Cropped (ha)	Month J	F	M	A	M	J	J	A	S	O	N	D	Total
			(m-d/ha)												
Paddy															
Irrigaged															
Wet season	94	1	-	-	-	-	-	8	17	12	16	26	15	-	94
Dry season	100	1	13	17	28	16	-	-	-	-	-	-	8	18	100
Rainfed															
Wet season	91	1	-	-	-	-	-	8	16	12	15	26	14	-	91
Upland Crops															
Corn, shelled	43	1	-	-	-	-	-	-	11	5	13	10	4	-	43
Tomato	120	1	15	20	33	20	-	-	-	-	-	-	10	22	120
Squash	82	1	15	12	23	20	6	-	-	-	-	-	-	6	82
Eggplant	150	1	20	24	42	20	5	-	-	-	-	-	12	27	150
Sponge gourd	80	1	14	12	22	20	6	-	-	-	-	-	-	6	80
Bitter gourd	85	1	14	22	21	6	-	-	-	-	-	-	7	15	85
Bottle gourd	80	1	13	21	20	5	-	-	-	-	-	-	6	15	80
Taro	53	1	-	-	-	-	-	4	10	7	9	15	8	-	53
Sweet potato	45	1	-	-	-	-	-	5	8	6	8	12	6	-	45
Yam	71	1	-	-	-	-	-	6	13	9	12	20	11	-	71
Cassava	39	1	-	-	-	-	-	4	7	5	7	11	5	-	39
Others	70	1	9	12	20	10	-	-	-	-	-	-	6	13	70
Orchard		1													
Banana	20	1	3	-	3	-	2	-	3	-	3	-	4	2	20
Calamansi	120	1	6	6	5	-	12	10	14	18	10	14	7	18	120
Szingkom	150	1	8	9	12	-	15	12	18	20	12	15	9	20	150
Ladu	151	1	9	9	12	-	15	12	18	20	12	15	9	20	151
Mango	90	1	14	16	14	23	-	-	-	-	-	-	7	16	90
Coffee	50	1	9	6	-	-	2	4	7	5	3	4	5	5	50
Others	60	1	14	7	5	5	-	-	-	-	-	7	9	13	60
Total	1,844		176	193	260	145	63	73	142	119	120	175	162	216	1,844

Table V.3.6 (2/2) Total Labor Requirement under Present Condition(total man-day), 1988

Crop	Labor Requirement per Hectare (m-d)	Total Area Cropped (ha)	Month J	F	M	A	M	J	J	A	S	O	N	D	Total
			(m-d/ha)												
Paddy															
Irrigaged															
Wet season	95	350	-	-	-	-	-	2,800	5,950	4,200	5,600	9,100	5,250	-	32,900
Dry season	100	50	650	850	1,400	800	-	-	-	-	-	-	400	900	5,000
Rainfed															
Wet season	91	400	-	-	-	-	-	3,200	6,400	4,800	6,000	10,400	5,600	-	36,400
Upland Crops		(220)													
Corn, shelled	43	40	-	-	-	-	-	-	440	200	520	400	160	-	1,720
Tomato	120	14	210	280	462	280	-	-	-	-	-	-	140	308	1,680
Squash	82	5	75	60	115	100	30	-	-	-	-	-	-	30	410
Eggplant	150	6	120	144	252	120	30	-	-	-	-	-	72	162	900
Sponge gourd	80	4	56	48	88	80	24	-	-	-	-	-	-	24	320
Bitter gourd	85	15	210	330	315	90	-	-	-	-	-	-	105	225	1,275
Bottle gourd	80	5	65	105	100	25	-	-	-	-	-	-	30	75	400
Taro	53	50	-	-	-	-	-	200	500	350	450	750	400	-	2,650
Sweet potato	45	11	-	-	-	-	-	55	88	66	88	132	66	-	495
Yam	71	10	-	-	-	-	-	60	130	90	120	200	110	-	710
Cassava	39	18	-	-	-	-	-	72	126	90	126	198	90	-	702
Others	70	42	378	504	840	420	-	-	-	-	-	-	252	546	2,940
Orchard		(305)													
Banana	20	30	90	-	90	-	60	-	90	-	90	-	120	60	600
Calamansi	120	5	30	30	25	-	60	50	70	90	50	70	35	90	600
Szingkom	150	45	360	405	540	-	675	540	810	900	540	675	405	900	6,750
Ladu	151	10	90	90	120	-	150	120	180	200	120	150	90	200	1,510
Mango	90	100	1,400	1,600	1,400	2,300	-	-	-	-	-	-	700	1,600	9,000
Coffee	50	30	270	180	-	-	60	120	210	150	90	120	150	150	1,500
Others	60	85	1,190	595	425	425	-	-	-	-	-	595	765	1,105	5,100
Total	1,845	1,850	5,194	5,221	6,172	4,640	1,089	7,217	14,994	11,136	13,794	22,790	14,940	6,375	113,562

Table V.3.7 Inventory of Livestock and Poultry

	No. of Sample	Carabao		Cattle		Horse		Hog	
		No.	Average	No.	Average	No.	Average	No.	Average
1. Sipsipin	58	99	1.7	3	0.1	4	0.1	124	2.1
2. 1st District	32	36	1.1	5	0.2	0	0.0	24	0.8
3. 2nd District	12	14	1.2	1	0.1	0	0.0	10	0.8
4. 3rd District	36	53	1.5	10	0.3	3	0.1	19	0.5
5. Bayugo	39	86	2.2	68	1.7	11	0.3	9	0.2
6. Punta	23	23	1.0	0	0.0	0	0.0	11	0.5
7. Palay-Palay	45	83	1.8	7	0.2	2	0.0	7	0.2
8. Pagkalinawan	23	22	1.0	44	1.9	6	0.3	5	0.2
9. Lubo	46	31	0.7	23	0.5	1	0.0	33	0.7
10.Bagumbong	75	136	1.8	40	0.5	4	0.1	106	1.4
11.Paalaman	6	0	0.0	0	0.0	8	1.3	0	0.0
Total	395	583	1.5	201	0.5	39	0.1	348	0.9

	No. of Sample	Goats		Duck		Chickin		Game cock	
		No.	Average	No.	Average	No.	Average	No.	Average
1. Sipsipin	58	21	0.4	360	6.2	642	11.1	0	0.0
2. 1st District	32	14	0.4	8	0.3	200	6.3	49	1.5
3. 2nd District	12	3	0.3	25	2.1	18	1.5	3	0.3
4. 3rd District	36	7	0.2	243	6.8	155	4.3	17	0.5
5. Bayugo	39	69	1.8	15	0.4	215	5.5	18	0.5
6. Punta	23	7	0.3	3	0.1	14	0.6	28	1.2
7. Palay-Palay	45	38	0.8	56	1.2	79	1.8	0	0.0
8. Pagkalinawan	23	21	0.9	0	0.0	109	4.7	0	0.0
9. Lubo	46	13	0.3	0	0.0	372	8.1	0	0.0
10.Bagumbong	75	38	0.5	123	1.6	618	8.2	97	1.3
11.Paalaman	6	0	0.0	0	0.0	86	14.3	0	0.0
Total	395	231	0.6	833	2.1	2,508	6.3	212	0.5

Source;Farm Economic Survey (1989 JICA)

Table V.3.8 Inventory of Farm Machinery

No.:Number of Farm Household cultivated

	No. of Sample	Hand Tractor		Rotovator		Reaper		Swath Sprayer	
		No.	Ratio%	No.	Ratio%	No.	Ratio%	No.	Ratio%
1. Sipsipin	58	3	5.2	0	0.0	0	0.0	2	3.4
2. 1st District	32	0	0.0	0	0.0	0	0.0	0	0.0
3. 2nd District	12	0	0.0	0	0.0	0	0.0	0	0.0
4. 3rd District	36	1	2.8	0	0.0	0	0.0	0	0.0
5. Bayugo	39	1	2.6	0	0.0	0	0.0	0	0.0
6. Punta	23	2	8.7	0	0.0	0	0.0	0	0.0
7. Palay-Palay	45	1	2.2	0	0.0	0	0.0	0	0.0
8. Pagkalinawan	23	0	0.0	0	0.0	0	0.0	0	0.0
9. Lubo	46	1	2.2	1	2.2	1	2.2	1	2.2
10.Bagumbong	75	2	2.7	0	0.0	0	0.0	0	0.0
11.Paalaman	6	0	0.0	0	0.0	0	0.0	0	0.0
Total	395	11	2.8	1	0.3	1	0.3	3	0.8

	No. of Sample	Knapsack Sprayer		Power Thresher		Rotary Weeder		Irrigation Pump	
		No.	Ratio%	No.	Ratio%	No.	Ratio%	No.	Ratio%
1. Sipsipin	58	17	29.3	0	0.0	3	5.2	0	0.0
2. 1st District	32	5	15.6	0	0.0	12	37.5	0	0.0
3. 2nd District	12	2	16.7	0	0.0	0	0.0	0	0.0
4. 3rd District	36	10	27.8	0	0.0	0	0.0	0	0.0
5. Bayugo	39	0	0.0	0	0.0	0	0.0	0	0.0
6. Punta	23	0	0.0	1	4.3	0	0.0	0	0.0
7. Palay-Palay	45	11	24.4	0	0.0	1	2.2	0	0.0
8. Pagkalinawan	23	4	17.4	0	0.0	0	0.0	0	0.0
9. Lubo	46	3	6.5	0	0.0	1	2.2	2	4.3
10.Bagumbong	75	18	24.0	1	1.3	3	4.0	1	1.3
11.Paalaman	6	0	0.0	0	0.0	0	0.0	0	0.0
Total	395	70	17.7	2	0.5	20	5.1	3	0.8

	No. of Sample	Rice Mill		Pedal Thresher		Jeep		Wheel Tractor	
		No.	Ratio%	No.	Ratio%	No.	Ratio%	No.	Ratio%
1. Sipsipin	58	1	1.7	1	1.7	4	6.9	0	0.0
2. 1st District	32	1	3.1	0	0.0	0	0.0	0	0.0
3. 2nd District	12	0	0.0	0	0.0	0	0.0	0	0.0
4. 3rd District	36	0	0.0	0	0.0	0	0.0	0	0.0
5. Bayugo	39	3	7.7	0	0.0	0	0.0	0	0.0
6. Punta	23	1	4.3	0	0.0	0	0.0	0	0.0
7. Palay-Palay	45	1	2.2	0	0.0	0	0.0	0	0.0
8. Pagkalinawan	23	0	0.0	0	0.0	0	0.0	0	0.0
9. Lubo	46	2	4.3	0	0.0	0	0.0	0	0.0
10.Bagumbong	75	1	1.3	0	0.0	0	0.0	0	0.0
11.Paalaman	6	0	0.0	0	0.0	0	0.0	0	0.0
Total	395	10	2.5	1	0.3	4	1.0	0	0.0

Source;Farm Economic Survey (1989 JICA)

Table V.3.9 Distribution of Farmers by Size and Barangay

UNIT:Number of Farm Household

Farm Size (ha)	Barangay											Total
	Sipsipin	1st District	2nd District	3rd District	Bayugo	Punta	Palay-Palay	Pagkali-nawan	Lubo	Bagumbong	Paalaman	
Less than 0.25	4	0	1	2	4	9	1	1	6	4	0	32
0.25-0.49	21	12	4	10	18	5	10	7	16	17	0	120
0.50-0.74	1	2	1	3	3	0	2	0	4	7	0	23
0.75-0.99	14	11	2	8	8	4	14	8	10	16	1	96
1.00-1.24	2	0	0	1	0	0	0	0	1	4	0	8
1.25-1.49	5	3	1	4	2	2	8	0	0	7	0	32
1.50-1.74	0	1	0	2	2	0	2	0	0	0	0	7
1.75-1.99	5	2	1	2	0	0	4	3	2	5	1	25
2.00-2.24	0	0	0	0	0	0	0	0	0	0	0	0
2.25-2.49	4	0	1	2	1	1	1	0	2	7	0	19
2.50-2.74	0	0	0	0	0	0	0	0	0	2	1	3
2.75-2.99	0	0	0	2	0	1	3	3	3	1	2	15
More than 2.99	2	1	1	0	1	1	0	1	2	5	1	15
Total	58	32	12	36	39	23	45	23	46	75	6	395
Average Holding Size(ha)	0.99	0.90	1.14	1.03	0.74	0.81	1.12	1.22	0.96	1.25	2.53	1.05

Source : Farm Economic Survey Conducted by JICA, 1989

Table V.3.10 Distribution of Type of Farm by Barangay

Barangay	Total Samples	Paddy		Paddy/Upland		Paddy/Orchard		Paddy/Orchard/Upland		Sub-Total(Paddy)	
		No.	%	No.	%	No.	%	No.	%	No.	%
Sipsipin	58	51	87.9	1	1.7	5	8.6	0	0.0	57	98.3
District I	32	30	93.8	0	0.0	0	0.0	0	0.0	30	93.8
District II	12	9	75.0	2	16.7	1	8.3	0	0.0	12	100.0
District III	36	22	61.1	5	13.9	3	8.3	2	5.6	32	88.9
Bayugo	39	25	64.1	10	25.6	1	2.6	1	2.6	37	94.9
Punta	23	20	87.0	3	13.0	0	0.0	0	0.0	23	100.0
Palay-Palay	45	42	93.3	2	4.4	0	0.0	1	2.2	45	100.0
Pagkalinawan	23	1	4.3	14	60.9	0	0.0	5	21.7	20	87.0
Lubo	46	21	45.7	7	15.2	3	6.5	4	8.7	35	76.1
Bagumbong	75	67	89.3	3	4.0	3	4.0	1	1.3	74	98.7
Paalaman	6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	395	288	72.9	47	11.9	16	4.1	14	3.5	365	92.4

Barangay	Total Samples	Upland		Orchard		Upland/Orchard		Sub Total(Non-Paddy)	
		No.	%	No.	%	No.	%	No.	%
Sipsipin	58	0	0.0	1	1.7	0	0.0	1	1.7
District I	32	0	0.0	0	0.0	2	6.3	2	6.3
District II	12	0	0.0	0	0.0	0	0.0	0	0.0
District III	36	3	8.3	0	0.0	1	2.8	4	11.1
Bayugo	39	2	5.1	0	0.0	0	0.0	2	5.1
Punta	23	0	0.0	0	0.0	0	0.0	0	0.0
Palay-Palay	45	0	0.0	0	0.0	0	0.0	0	0.0
Pagkalinawan	23	1	4.3	2	8.7	0	0.0	3	13.0
Lubo	46	8	17.4	2	4.3	1	2.2	11	23.9
Bagumbong	75	1	1.3	0	0.0	0	0.0	1	1.3
Paalaman	6	0	0.0	2	33.3	4	66.7	6	100.0
Total	395	15	3.8	7	1.8	8	2.0	30	7.6

Table V.3.11 Distribution of Upland/Orchard Cultivators by Barangay

No.:Number of Farm Household cultivated

	No. of Sample	Corn		Taro		Yam		Mango	
		No.	Ratio%	No.	Ratio%	No.	Ratio%	No.	Ratio%
1. Sipsipin	58	1	1.7	2	3.4	0	0.0	22	37.9
2. 1st District	32	3	9.4	2	6.3	1	3.1	6	18.8
3. 2nd District	12	1	8.3	1	8.3	0	0.0	1	8.3
4. 3rd District	36	11	30.6	6	16.7	0	0.0	12	33.3
5. Bayugo	39	14	35.9	3	7.7	1	2.6	5	12.8
6. Punta	23	3	13.0	0	0.0	0	0.0	0	0.0
7. Palay-Palay	45	5	11.1	3	6.7	1	2.2	5	11.1
8. Pagkalinawan	23	7	30.4	21	91.3	5	21.7	11	47.8
9. Lubo	46	1	2.2	23	50.0	8	17.4	23	50.0
10.Bagumbong	75	3	4.0	2	2.7	0	0.0	11	14.7
11.Paalaman	6	0	0.0	3	50.0	2	33.3	6	100.0
Total	395	49	12.4	66	22.1	18	4.6	102	25.8

	No. of Sample	Banana		Citrus		Guyabano		Coffee	
		No.	Ratio%	No.	Ratio%	No.	Ratio%	No.	Ratio%
1. Sipsipin	58	6	10.3	8	13.8	8	13.8	1	1.7
2. 1st District	32	0	0.0	5	15.6	2	6.3	1	3.1
3. 2nd District	12	0	0.0	1	8.3	3	25.0	1	8.3
4. 3rd District	36	3	8.3	7	19.4	8	22.2	5	13.9
5. Bayugo	39	4	10.3	2	5.1	7	17.9	0	0.0
6. Punta	23	1	4.3	0	0.0	1	4.3	0	0.0
7. Palay-Palay	45	7	15.6	1	2.2	5	11.1	0	0.0
8. Pagkalinawan	23	0	0.0	2	8.7	0	0.0	7	30.4
9. Lubo	46	4	8.7	12	26.1	13	28.3	17	37.0
10.Bagumbong	75	6	8.0	11	14.7	5	6.7	4	5.3
11.Paalaman	6	6	100.0	5	83.3	2	33.3	6	100.0
Total	395	37	9.4	54	17.9	54	13.7	42	10.6

	No. of Sample	Coconuts		Guaba		Jackfruit		Starapple	
		No.	Ratio%	No.	Ratio%	No.	Ratio%	No.	Ratio%
1. Sipsipin	58	7	12.1	10	17.2	3	5.2	6	10.3
2. 1st District	32	2	6.3	4	12.5	2	6.3	1	3.1
3. 2nd District	12	0	0.0	1	8.3	2	16.7	1	8.3
4. 3rd District	36	7	19.4	3	8.3	1	2.8	3	8.3
5. Bayugo	39	1	2.6	5	12.8	1	2.6	0	0.0
6. Punta	23	0	0.0	1	4.3	0	0.0	0	0.0
7. Palay-Palay	45	1	2.2	5	11.1	2	4.4	3	6.7
8. Pagkalinawan	23	0	0.0	0	0.0	0	0.0	0	0.0
9. Lubo	46	5	10.9	5	10.9	2	4.3	1	2.2
10.Bagumbong	75	11	14.7	6	8.0	4	5.3	4	5.3
11.Paalaman	6	3	50.0	2	33.3	2	33.3	0	0.0
Total	395	37	9.4	42	10.6	19	4.8	19	4.8

Source;Farm Economic Survey (1989 JICA)

Table V.3.12 Income Classification by Land Holding Size

Annual Farm Income (peso/H.H)	Total Sample Farm		Land Holding of Paddy Field (ha)																		Non Paddy Farm	
			<0.25		0.25-0.49		0.50-0.74		0.75-0.99		1.00-1.24		1.25-1.49		1.50-2.00		2.00-2.49		2.50-3.00		>3.00			
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Less than 9,999	72	18.5	6	40.0	8	26.7	28	25.2	1	6.3	11	12.6	2	20.0	2	7.1	1	3.3	1	9.1	2	12.5	10	28.6
10,000-14,999	71	18.3	5	33.3	7	23.3	16	14.4	7	43.8	21	24.1	2	20.0	3	10.7	2	6.7	0	0.0	0	0.0	8	22.9
15,000-19,999	53	13.6	0	0.0	4	13.3	17	15.3	2	12.5	11	12.6	0	0.0	6	21.4	5	16.7	2	18.2	1	6.3	5	14.3
20,000-24,999	37	9.5	1	6.7	1	3.3	13	11.7	0	0.0	8	9.2	2	20.0	4	14.3	4	13.3	0	0.0	0	0.0	4	11.4
25,000-29,999	37	9.5	1	6.7	2	6.7	11	9.9	3	18.8	8	9.2	0	0.0	3	10.7	5	16.7	1	9.1	3	18.8	0	0.0
30,000-34,999	17	4.4	0	0.0	1	3.3	7	6.3	0	0.0	3	3.4	1	10.0	1	3.6	1	3.3	1	9.1	0	0.0	2	5.7
35,000-39,999	22	5.7	1	6.7	2	6.7	4	3.6	0	0.0	8	9.2	0	0.0	1	3.6	3	10.0	2	18.2	0	0.0	1	2.9
40,000-44,999	15	3.9	0	0.0	1	3.3	3	2.7	0	0.0	5	5.7	0	0.0	1	3.6	2	6.7	0	0.0	2	12.5	1	2.9
45,000-49,999	13	3.3	0	0.0	1	3.3	4	3.6	2	12.5	2	2.3	1	10.0	1	3.6	1	3.3	0	0.0	1	6.3	0	0.0
50,000-54,999	12	3.1	0	0.0	2	6.7	3	2.7	0	0.0	1	1.1	2	20.0	1	3.6	1	3.3	0	0.0	0	0.0	2	5.7
55,000-59,999	4	1.0	0	0.0	0	0.0	1	0.9	0	0.0	2	2.3	0	0.0	0	0.0	0	0.0	0	0.0	1	6.3	0	0.0
60,000-64,999	6	1.5	0	0.0	0	0.0	2	1.8	1	6.3	0	0.0	0	0.0	0	0.0	2	6.7	1	9.1	0	0.0	0	0.0
65,000-69,999	6	1.5	0	0.0	0	0.0	2	1.8	0	0.0	1	1.1	0	0.0	2	7.1	1	3.3	0	0.0	0	0.0	0	0.0
70,000-74,999	3	0.8	0	0.0	0	0.0	0	0.0	0	0.0	1	1.1	0	0.0	0	0.0	1	3.3	0	0.0	1	6.3	0	0.0
75,000-79,999	4	1.0	0	0.0	0	0.0	0	0.0	0	0.0	2	2.3	0	0.0	1	3.6	0	0.0	0	0.0	1	6.3	0	0.0
80,000-84,999	3	0.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	9.1	2	12.5	0	0.0
85,000-89,999	3	0.8	0	0.0	0	0.0	0	0.0	0	0.0	1	1.1	0	0.0	1	3.6	0	0.0	0	0.0	1	6.3	0	0.0
90,000-100,000	2	0.5	0	0.0	0	0.0	0	0.0	0	0.0	1	1.1	0	0.0	0	0.0	0	0.0	0	0.0	1	6.3	0	0.0
More than 100,000	9	2.3	1	6.7	1	3.3	0	0.0	0	0.0	1	1.1	0	0.0	1	3.6	1	3.3	2	18.2	0	0.0	2	5.7
Total	389		15		30		111		16		87		10		28		30		11		16		35	
Average Income (peso)	28,131		16,194		23,999		21,844		22,803		26,983		27,508		33,844		36,532		58,708		49,981		31,003	

Source:Farm Economic Survey, JICA, 1989

Table V.4.1 Land Use Plan (Whole Area) (1/3)

(Unit : ha)

	Mountainous/ Hilly Land		Lower Terraces		Alluvial Fans		Total	
	Present	Proposed	Present	Proposed	Present	Proposed	Present	Proposed
1 Agricultural Land	310	960	450	1,000	680	730	1,440	2,690
1) Paddy land								
- Irrigated	0	0	0	450 *1	450	500 *2	450	950
- Rainfed	0	0	270	30	50	0	320	30
Sub-total for 1)	0	0	270	480	500	500	770	980
2) Upland field								
- Intensification	0	0	0	10 *3	0	120 *4	0	130
- Rainfed	10	10	50	100 *5	100	20 *6	160	130
Sub-total for 2)	10	10	50	110	100	140	160	260
3) Plantation								
Orchard								
- Intensification	0	0	0	5 *7	0	75 *8	0	80
- Rainfed	170	260 *9	130	185 *10	50	15	350	460
Sub-total	170	260	130	190	50	90	350	540
Coconut	70	0	0	0	30	0	100	0
Others *17	60	60	0	0	0	0	60	60
Sub-total for 3)	300	320	130	190	80	90	510	600
4) Agro-forest	0	630 *11	0	220 *12	0	0	0	850
2 Non-agricultural Land	2,360	1,710	740	190 *14	60	10	3,160	1,910
1) Forest	200	1,710 *13	80	190	0	10 *15	280	1,910
2) Bush	1,150	0	340	0	30	0	1,520	0
3) Grass	1,010	0	320	0	30	0	1,360	0
3 Residential and others	10	10	150	150 *16	170	170	330	330
Total	2,680	2,680	1,340	1,340	910	910	4,930	4,930

Remarks)

*1 : Irrigation development to 240 ha of existing rainfed and 210 ha to be suitable for the paddy field out of 320 ha of grass land
*2 : Rehabilitation for 450 ha of existing irrigated field and irrigation development of 50 ha of existing paddy field
*3 : Irrigation development of 10 ha out of 50 ha existing rainfed upland field
*4 : Irrigation development of 100 ha of existing rainfed upland field and 20 ha of grass land
*5 : Rainfed development of 60 ha out of 320 ha of existing grass land
*6 : Rainfed development of 5 ha of existing grass land and 15 ha of bush land
*7 : Intensified orchard development to 5 ha out of 130 ha of existing orchard
*8 : Intensified orchard development to 35 ha out of 50 ha of existing orchard, 30 ha of coconut and 20 ha of bush land
*9 : Orchard development of 70 ha of coconut, 20 ha of bush land and 170 ha of existing orchard
*10 : Orchard development to 50 ha ofbush land, 10 ha of forest and 125 ha of existing orchard
*11 : Agro-forest development to 350 ha of bush land and 280 ha of grass land
*12 : Agro-forest development to 220 ha of bush land
*13 : Reforestation to 730 ha of grass land and 200 ha of existing forest
*14 : Reforestation to 110 ha of existing bush land and 80 ha of existing forest
*15 : Reforestation to 1190 ha of bush land and 80 ha of existing forest
*16 : 37 ha out of 150 ha is included in the land of Agro-aquatic Development Centre managed by MERALCO FOUNDATION INC.
*17 : Including coffee, cocoa, cashewnut, ipil-ipil, etc.

Table V.4.1 Land Use Plan (Distributed Area) (2/3)

(Unit : ha)

	Mountainous/ Hilly Land		Lower Terraces		Alluvial Fans		Total	
	Present	Proposed	Present	Proposed	Present	Proposed	Present	Proposed
1 Agricultural Land	20	40	310	545	590	640	920	1,225
1) Paddy land								
- Irrigated	0	0	0	415 *1	450	480 *2	450	895
- Rainfed	0	0	240	0	30	0	270	0
Sub-total for 1)	0	0	240	415	480	480	720	895
2) Upland field								
- Intensification	0	0	0	10 *3	0	90 *4	0	100
- Rainfed	0	0	50	50 *5	70	20 *6	120	70
Sub-total for 2)	0	0	50	60	70	110	120	170
3) Plantation								
Orchard								
- Intensification	0	0	0	5 *7	0	35 *8	0	40
- Rainfed	20	40 *9	20	65 *10	30	15	70	120
Sub-total	20	40	20	70	30	50	70	160
Coconut	0	0	0	0	10	0	10	0
Others *14	0	0	0	0	0	0	0	0
Sub-total for 3)	20	40	20	70	40	50	80	160
4) Agro-forest	0	0	0	0	0	0	0	0
2 Non-agricultural Land	130	110	290	55	60	10	480	175
1) Forest	70	110 *11	40	55 *12	0	10 *13	110	175
2) Bush	40	0	90	0	30	0	160	0
3) Grass	20	0	160	0	30	0	210	0
3 Residential and others	10	10	100	100	140	140	250	250
Total	160	160	700	700	790	790	1,650	1,650

Remarks)

*1 : Irrigation development to 240 ha of existing rainfed and 160 ha of grass land 15 ha of bush land
*2 : Rehabilitation for 450 ha of existing irrigated field and irrigation development of 50 ha of existing paddy field
*3 : Irrigation development to 10 ha out of 50 ha existing rainfed upland field
*4 : Irrigation development to 70 ha of existing rainfed upland field and 20 ha of grass land
*5 : Rainfed development of 10 ha of bush land as well as 40 ha out of 50 ha of existing upland field
*6 : Rainfed development to 5 ha of existing grass land and 15 ha of existing bush land
*7 : Intensified orchard development to 5 ha out of 20 ha of existing orchard
*8 : Intensified orchard development to 15 ha out of 30 ha of existing orchard, 10 ha of coconut and 10 ha of bush land
*9 : Orchard development of 20 ha of bush land and 20 ha of existing orchard
*10 : Orchard development to 50 ha of bush land 15 ha of existing orchard
*11 : Agro-forest development to 40 ha of bush land as well as 70 ha of the forest
*12 : Agro-forest development to 15 ha of bush land as well as 40 ha of existing forest
*13 : Reforestation to each 5 ha of existing riverine forest and bush land
*14 : Including coffee, cocoa, cashewnut, ipil-ipil, etc.

Table V.4.1 Land Use Plan (Undistributed Area) (3/3)

(Unit : ha)

	Mountainous/ Hilly Land		Lower Terraces		Alluvial Fans		Total	
	Present	Proposed	Present	Proposed	Present	Proposed	Present	Proposed
1 Agricultural Land	290	920	140	455	90	90	520	1,465
1) Paddy land								
- Irrigated	0	0	0	35 *1	0	20 *2	0	55
- Rainfed	0	0	30	30 *3	20	0	50	30
Sub-total for 1)	0	0	30	65	20	20	50	85
2) Upland field								
- Intensification	0	0	0	0	0	30 *4	0	30
- Rainfed	10	10	0	50 *5	30	0	40	60
Sub-total for 2)	10	10	0	50	30	30	40	90
3) Plantation								
Orchard								
- Intensification	0	0	0	0	0	40 *6	0	40
- Rainfed	150	220 *7	110	120 *8	20	0	280	340
Sub-total	150	220	110	120	20	40	280	380
Coconut	70	0	0	0	20	0	90	0
Others *14	60	60	0	0	0	0	60	60
Sub-total for 3)	280	280	110	120	40	40	430	440
4) Agro-forest	0	630 *9	0	220 *10	0	0	0	850
2 Non-agricultural Land	2,230	1,600	450	135	0	0	2,680	1,735
1) Forest	130	1,600 *11	40	135 *12	0	0	170	1,735
2) Bush	1,110	0	250	0	0	0	1,360	0
3) Grass	990	0	160	0	0	0	1,150	0
3 Residential and others	0	0	50	50 *13	30	30	80	80
Total	2,520	2,520	640	640	120	120	3,280	3,280

Remarks)

*1 : Irrigation development to 30 ha of existing rainfed and 5 ha out of 160 ha of grass land (Barangay Punta)
*2 : Irrigation Development to 20 ha of existing rainfed paddy field in Bagumbong
*3 : Irrigation development to 30 ha out of 160 ha of grass land
*4 : Irrigation development to 30 ha of existing rainfed upland field
*5 : Rainfed development to 50 ha out of 160 ha of existing grass land
*6 : Intensified orchard development to 20 ha out of existing orchard, 20 ha out of existing coconut field
*7 : Orchard development of 70 ha of coconut as well as 150 ha of existing orchard
*8 : Orchard development to 10 ha ofbush land and 110 ha out of existing forest
*9 : Agro-forest development to 350 ha of bush land and 280 ha of grass land
*10 : Agro-forest development to 220 ha of bush land
*11 : Reforestation to 760 ha out of existing bush land and 70 ha out of 990 ha of bush land as well as 130 ha of existing forest
*12 : Reforestation to 95 ha of bush land and 40 ha of existing forest
*13 : 37 ha out of 50 ha is included in the land of Agro-aquatic Development Centre managed by MERALCO FOUNDATION INC.
*14 : Including coffee, cocoa, cashewnut, ipil-ipil, etc.

Table V.4.2 Rice Production Record at Advanced Rice Producing Area

Municipality		Major Seeding Season			
		Jan-Feb	Apr-Jun	Jul-Sep	Oct-Dec
Cardona	Cropping Area (ha)	8.0	2.0	19.0	-
<1	Production (ton)	36.8	11.0	85.5	-
	Average Yield (ton/ha)	4.6	5.5	4.5	-
Montarban	Cropping Area (ha)	5.0	-	-	-
<1	Production (ton)	27.5	-	-	-
	Average Yield (ton/ha)	5.5	-	-	-
Morong	Cropping Area (ha)	834.0	132.0	240.0	40.0
<1	Production (ton)	3753.0	699.6	1320.0	180.0
	Average Yield (ton/ha)	4.5	5.3	5.5	4.5
Tay-Tay	Cropping Area (ha)	20.0	10.0	-	-
<1	Production (ton)	100.0	58.0	-	-
	Average Yield (ton/ha)	5.0	5.8	-	-
Jala-Jala	Cropping Area (ha)	-	8.0	-	4.0
(Meralco	Production (ton)	-	40.0	-	24.0
Center)<2	Average Yield (ton/ha)	-	5.0	-	6.0

Note;
<1:1980 Census of Agriculture, Rizal
<2:Production Record (cropping year=1987) provided by Meralco Foundation Inc., 1988
Variety;IR-66,70,72,74
Fertilizer Requirement;Urea=250kg, 14-14-14=100kg, 16-20-0=50kg

Table V.4.3 Crop Production under Crop Production Programme

Crops	Unit Yield (ton/ha)	Unit Price (peso/ton)	Production Value per ha (Peso/ha)	Planted Area (ha)	Total Production (ton)	Gross Production Value (,000 Peso)
1. Rice						
-Irrigated	/_1	/_2	/_3		/_4	
Wet Season	5.0	8,000	26,000	950	3,088	24,700
Dry Season	5.0	8,000	26,000	880	2,860	22,880
sub-total				1,830	5,948	47,580
-Rainfed	2.5	8,000	13,000	30	49	390
Total (Rice)				1,860	5,997	47,970
2. Upland Crop						
-Irrigated Paddy Field (Dry season/3rd Crop)						
Cowpea	1.5	12,000	18,000	265	398	4,770
Mongo bean	2.0	13,000	26,000	35	70	910
Watermelon	17.0	3,200	54,400	35	595	1,904
sub-total				335	1,063	7,584
-Irrigated Upland Field						
Wet Season						
Corn	2.8	5,300	14,840	32	90	475
Tomato	15.0	3,500	52,500	30	450	1,575
Eggplant	12.0	12,000	144,000	30	360	4,320
Soy bean	1.0	20,000	20,000	30	30	600
String bean	8.0	5,150	41,200	30	240	1,236
sub-total				152	1,170	8,206
Dry Season						
Bitter gourd	14.0	10,000	140,000	30	420	4,200
Corn	2.8	5,300	14,840	98	274	1,454
Soy bean	1.0	20,000	20,000	70	70	1,400
sub-total				198	764	7,054
Total (Upland Crops)				685	2,997	22,844
3. Plantation						
-Irrigated Upland Field						
Citrus	15.0	5,000	75,000	85	1,275	6,375
4. Total (1+2+3)				2,630	10,269	77,189

Note: /_1: Unit Yield of Paddy.
/_2: Unit Price of Rice; 5% of Broken Rice.
/_3: Milling Rate=0.65 (3.5 ton/hour scale Rice Mill Unit)
/_4: Production of Milled Rice.

Table V.4.4 Farm Input Requirement Under Without Project Condition

Crops	Seed			Fertilizer						Total Amount per ha (peso)
				14-14-14		Urea		Others		
	Q'ty (kg)	Unit Price (peso)	Amount per ha (peso)	Q'ty (kg)	Amount per ha (peso)	Q'ty (kg)	Amount per ha (peso)	Q'ty (kg)	Amount per ha (peso)	
Bitter Gourd	15	1,100	16,500	150	720	0	0	0	0	720
Corn	20	37	740	150	720	100	410	0	0	1,130
Eggplant	0.2	58	12	150	720	0	0	0	300	1,020
Yam	2	60	120	150	720	0	0	0	0	720
Orange	-	-	-	0	0	0	0	0	0	0
Paddy	44	12	528	0	0	90	369	0	0	369
Taro	2	60	120	100	480	0	0	0	0	480
String bean green	45	100	4,500	150	720	0	0	0	0	720
Watermelon	2	435	870	150	720	0	0	0	0	720
Tomato	0.2	48	10	300	1,440	0	0	0	0	1,440

Table V.4.5 Farm Input Requirement Under With Project Condition

Crops	Seed			Fertilizer						Total Amount per ha (peso)
				14-14-14		Urea		Others		
	Q'ty (kg)	Unit Price (peso)	Amount per ha (peso)	Q'ty (kg)	Amount per ha (peso)	Q'ty (kg)	Amount per ha (peso)	Q'ty (kg)	Amount per ha (peso)	
Bitter Gourd	15	1,100	16,500	300	1,440	0	0	0	0	1,440
Corn	20	37	740	300	1,440	150	615	0	0	2,055
Cowpea	10	100	1,000	150	720	150	615	0	0	1,335
Eggplant	0.2	58	12	400	1,920	0	0	150	300	2,220
Mongo bean	20	29	580	150	720	150	615	0	0	1,335
Orange	-	-	-	150	720	150	615	0	0	1,335
Paddy	44	12	528	200	960	150	615	0	0	1,575
Soy bean	60	29	1,740	0	0	0	0	200	720	720
String bean green	45	100	4,500	300	1,440	0	0	0	0	1,440
Watermelon	2	435	870	300	1,440	0	0	0	0	1,440
Tomato	0.2	48	10	550	2,640	0	0	0	0	2,640

Table V.5.1 Economic Price of Rice

Item	Unit	Economic price	Remarks
1. Projected 2000, FOB Bangkok price	US$/ton	240	(1)
2. Ocean freight and insutrance	US$/ton	20	
3. CIF Manila price	US$/ton	260	
4. Converted Philippine pesos	Pesos/ton	7,150	(2)
5. Port charge, handling and warehousing	Pesos/ton	176	(3)
6. NFA administration charge	Pesos/ton	650	
7. Wholesale price of rice in manila	Pesos/ton	7,976	
8. Transportation cost (Manila - Jala Jala)	Pesos/ton	91	(4)
9. Wholesale price of rice in Jala Jala	Pesos/ton	7,885	
10. Milling cost	Pesos/ton	880	(5)
11. Value of milling by-products	Pesos/ton	525	(5)
12. Ex-mill price of paddy	Pesos/ton	7,530	
13. Procurement, transportation and handling cost	Pesos/ton	20	(5)
14. Farmgate price of paddy		7,510	

Remarks)
(1) Based on World Bank Commodity Price Forecasts (January 1990)
Projected year 2000 price at constant 1990 price
(2) US $ 1 : Pesos 27.5
(based on the shadow exchange rate 1.2 to prevailing rate 22.9)
(3) Based on the information from the Philippine Port Authority
(4) Assuming a foreign exchange component of 50 % and
shadow exchange rate of P27.5/$1
(5) Based on the information from the Philippine Port Authority

Table V.5.2 Economic Price of Corn

Item	Unit	Economic price	Remarks
1. Projected 1995, FOB Gulf Port price	US$/ton	105	(1)
2. Ocean freight and insutrance	US$/ton	20	
3. CIF Manila price	US$/ton	125	
4. Converted Philippine pesos	Pesos/ton	3,438	(2)
5. Port charge, handling and warehousing	Pesos/ton	176	(2)
6. NFA administration charge	Pesos/ton	650	
7. Wholesale price in manila	Pesos/ton	4,264	
8. Transportation cost (Manila - Jala Jala)	Pesos/ton	91	(2)
9. Wholesale price in Jala Jala	Pesos/ton	4,173	
10. Procurement, transportation and handling cost	Pesos/ton	20	(2)
11. Farmgate price of paddy		4,153	

Remarks)
(1) World Bank price projection for US No.2 yellow(FOB Galf Port)
(2) Same as economic pprice projection of paddy

Table V.5.3 Economic Price of Fertilizer

Item	Unit	Import parity price				Remarks
		14-14-14	Urea	21-0-0	16-20-0	
1. Projected 2000 CIF Manila price	US$/ton	4,022	3,917	2,278	3,844	(1)
2. Port charge and handling cost	Pesos/ton	176	176	176	176	(2)
3. Importer's cost (3 %)	Pesos/ton	121	118	68	115	(3)
4. Average costof handling and distribution in manila	Pesos/ton	295	295	295	295	(3)
5. Dealer's administrative cost	Pesos/ton	102	102	102	102	(3)
6. Transportation cost (Manila - Jala Jala)	Pesos/ton	146	146	146	146	(3)
7. Transport to farmgate	Pesos/ton	20	20	20	20	(4)
8. Farmgate price of fertilizer	Pesos/ton	4,882	4,774	3,085	4,698	

Note)
(1) Assuming the average projected ratio of fertilizer between 1989 price and 2000 price, the ratio is adopted in order to the projection of 2000 price of proposed fertilizer.
(2) Same as the cost on the rice and corn
(3) Based on the information from the Fertilizer and Pesticide Authority
(4) Based on the information of the field survey

Table V.5.4 Farm Gate Price of Selected Farm Products
Jalajala, Rizal, Nov. 1989

Item			Unit	Unit Price (peso) Financial /1	Economic /2
Crops					
	Rice (1)/3		kg	8.00	7.50
	Rice (2)/4		kg	7.00	6.20
	Bitter Gourd		kg	10.00	10.00
	Citrus, calamansi		kg	4.00	4.00
	Citrus, szingkom		kg	5.00	5.00
	Coconuts		kg	5.00	5.00
	Coffee bean, robusta		kg	14.30	14.30
	Corn, shelled		kg	5.30	4.15
	Eggplant		kg	12.00	12.00
	Mango, carabao		kg	5.00	5.00
	Mongo bean		kg	13.50	13.50
	String bean		kg	5.15	5.15
	Taro		kg	2.85	2.85
	Watermelon		kg	3.20	3.20
Livestock and Poultry/_5					
	Cattle		head	7,670.00	7670.00
	Carabao		head	7,250.00	7250.00
	Goat		head	325.00	325.00
	Pig		kg	29.00	29.00
	Chicken		kg	37.00	37.00
	Duck for:	layer	head	52.00	52.00
		meat	head	25.00	25.00
Products (Livestock and Poultry)					
	Egg	chicken	pc.	1.50	1.50
		duck	pc.	2.50	2.50
	Milk	carabao	li.	6.00	6.00
		cattle	li.	4.50	4.50

/_1: Financial Price in 1990
/_2: Economic Price in 2000 (1990 constant)
/_3: Including 5% broken rice, With Project Condition (3.5 on/hr scale rice mill)
/_4: Including 10% broken rice, Without Project Condition (Kiskisan rice mill)
/_5: Live animals of average size for sale
Source : Interviews with Barangay Officials and Farmers in Project Area, Jalajala, Rizal

Table V.5.5 Financial Price List of Agricultural Input

	Unit	Price
1. Seed		
Bitter gourd	peso/kg	1,100
Corn	peso/kg	7
Cowpea	peso/kg	100
Eggplant	peso/kg	58
Mung bean	peso/kg	29
Rice (H.Y.V.)	peso/kg	12
Soybean	peso/kg	29
String bean	peso/kg	100
Sweet Potato	peso/kg	60
Taro	peso/kg	60
Tomato	peso/kg	48
Watermelon	peso/kg	435
2. Fertilizer		
Urea	peso/kg	4.1
14-14-14	peso/kg	4.8
21-0-0	peso/kg	2.0
16-20-0	peso/kg	3.6
3. Insecticides		
Thiodan	peso/lit.	160
Furadan	peso/kg	400
Malathion	peso/lit.	350
Sevin 50 WP	peso/kg	180
Sevin XLR	peso/lit.	270
Lannate	peso/lit.	195
Chlordane	peso/lit.	200
Azodrin	peso/lit.	215
4. Fungicide		
Dithane M	peso/kg	155
Manzate	peso/kg	180
Cupravit	peso/kg	145
Vitagran	peso/kg	135
5. Labor		
Man Power	peso/M-D	45
Animal Power	peso/M-D	100
6. Fuel		
Gasoline	peso/lit.	5.8
Diesel	peso/lit.	3.8
7. Agro-Machinery (peso/unit)		
Hand Tractor	5.0 hp	21,000
Mist Duster	Gasoline	9,000
Power Thresher	5.0 hp	13,000
Tractor (4WD)	45 hp	744,880
Corn Sheller	20 hp	90,000
Power Dryer	1ton/4-6hr	63,000
Rice Mill Unit	3.5 ton	10,034,720
Rice Mill Unit	1.0 ton	2,314,400
Rice Mill Unit	0.6 ton	108,500
Rice Mill Unit	0.2 ton	58,300

Table V.5.6 Economic Price List of Agricultural Input

	Unit	Price
1. Seed/_1		
Bitter gourd	peso/kg	1,100
Corn	peso/kg	7
Cowpea	peso/kg	100
Eggplant	peso/kg	58
Mung bean	peso/kg	29
Rice (H.Y.V.)	peso/kg	12
Soybean	peso/kg	29
String bean	peso/kg	100
Sweet Potato	peso/kg	60
Taro	peso/kg	60
Tomato	peso/kg	48
Watermelon	peso/kg	435
2. Fertilizer/_2		
Urea	peso/kg	4.77
14-14-14	peso/kg	4.88
21-0-0	peso/kg	3.09
16-20-0	peso/kg	4.70
3. Insecticides/_3		
Thiodan	peso/lit.	202
Furadan	peso/kg	504
Malathion	peso/lit.	441
Sevin 50 WP	peso/kg	227
Sevin XLR	peso/lit.	340
Lannate	peso/lit.	246
Chlordane	peso/lit.	252
Azodrin	peso/lit.	271
4. Fungicide/_3		
Dithane M	peso/kg	195
Manzate	peso/kg	227
Cupravit	peso/kg	183
Vitagran	peso/kg	170
5. Labor/_4		
Man Power	peso/M-D	27
Animal Power	peso/M-D	60
6. Fuel/_5		
Gasoline	peso/lit.	6.96
Diesel	peso/lit.	4.56
7. Agro-Machinery (peso/unit)/_5		
Hand Tractor	5.0 hp	25,200
Mist Duster	Gasoline	10,800
Power Thresher	5.0 hp	15,600
Tractor (4WD)	45 hp	893,800
Corn Sheller	20 hp	108,000
Power Dryer	1ton/4-6hr	75,600
Rice Mill Unit	3.5 ton	12,041,600
Rice Mill Unit	1.0 ton	2,777,200
Rice Mill Unit	0.6 ton	130,200
Rice Mill Unit	0.2 ton	69,900

Note:

/_1;Appling financial retail price.

/_2;Appling import parity (see Table 7.1.1).

/_3;Appling the average conversion rate of 1.26 between financial and economic prices for fertilizer in order to calculate the economic price of agro-chemicals.

/_4;Appling the shadow wage rate of 0.6 on calculation of economic price.

/_5;Appling the shadow exchange rate of 1.2 on calculation of economic price.

Table V.5.7 Net Return per Ha by Crop

	Paddy (Irrigated)	Paddy (Rainfed)	Corn (shelled)	Tomato	Eggplant	Bitter Gourd	Cowpea	Mongo Bean	Soybean	String Bean	Water-melon	Citrus
1. Seed												
Unit Price (peso/kg)	12	12	7	250	350	1,100	100	29	29	100	435	0
Q'ty (kg)	44	44	20	0.2	0.3	15	10	20	60	45	2	0
Amount/ha(peso)	528	528	140	50	105	16,500	1,000	580	1,740	4,500	870	0
2. Fertilizer												
2.1 Urea												
Unit Price (peso/kg)	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10
Q'ty (kg)	150	100	0	0	0	0	0	0	0	0	0	0
Amount/ha(peso)	615	410	0	0	0	0	0	0	0	0	0	0
2.2 14-14-14												
Unit Price (peso/kg)	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80
Q'ty (kg)	200	50	300	600	500	500	300	300	200	500	500	500
Amount/ha (peso)	960	240	1,440	2,880	2,400	2,400	1,440	1,440	960	2,400	2,400	2,400
2.2 Others												
Unit Price (peso/kg)	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	3.60	0.00	0.00	0.00
Q'ty (kg)	0	0	0	0	150	0	0	0	200	0	0	0
Amount/ha (peso)	0	0	0	0	300	0	0	0	720	0	0	0
sub-total (peso/ha)	1,575	650	1,440	2,880	2,700	2,400	1,440	1,440	1,680	2,400	2,400	2,400
3. Agro-Chemical	900	900	950	1,485	1,710	1,710	1,090	1,070	2,200	1,210	1,970	5,170
4. Labor												
Unit Price (peso/M-D)	45	45	45	45	45	45	45	45	45	45	45	45
Hired (M-D)	0	0	20	120	100	50	40	60	20	50	50	50
Family (M-D)	150	143	43	180	180	200	200	190	54	130	210	150
Amount/ha (peso)	0	0	900	5,400	4,500	2,250	1,800	2,700	900	2,250	2,250	2,250
5. Machinery Cost (peso/ha)												
Power Tiller	479	479	0	0	0	0	479	479	0	0	479	0
Ploughing	0	0	0	0	0	0	0	0	0	0	0	0
Tractor	0	0	614	614	614	614	0	0	614	614	0	0
Mist Duster	122	122	179	179	179	179	122	122	179	179	122	179
Thresher	196	196	0	0	0	0	0	0	0	0	0	0
Sheller	0	0	0	0	0	0	0	0	0	0	0	0
sub-total	797	797	793	793	793	793	601	601	793	793	601	179
6. Miscellaneous	87	59	98	274	243	658	145	160	153	298	184	145
7. Total Production Cost (peso/ha)	3,887	2,934	4,321	10,882	10,051	24,311	6,076	6,551	7,466	11,451	8,275	10,144
Gross Income (peso)	26,000	13,000	18,000	52,500	60,000	80,000	18,000	26,000	20,000	41,200	32,000	50,000
Net Profit (peso)	22,113	10,066	13,679	41,618	49,949	55,689	11,924	19,449	12,534	29,749	23,725	39,856

Table V.5.8 Net Economic Agricultural Value Under Without Project Condition by CIS(1)

Crops	Unit Yield (ton/ha)	Unit Price (peso/ton)	Production Value per ha (Peso/ha)	Production Cost per ha (Peso/ha)	Net Production Value per ha (Peso/ha)	Sipsipin Planted Area (ha)	Sipsipin Production Value ('000 Peso)	Mapakla Planted Area (ha)	Mapakla Production Value ('000 Peso)	Manggahan Planted Area (ha)	Manggahan Production Value ('000 Peso)	Bayugo Planted Area (ha)	Bayugo Production Value ('000 Peso)	Llano Planted Area (ha)	Llano Production Value ('000 Peso)	Punta Planted Area (ha)	Punta Production Value ('000 Peso)	Palay-Palay Planted Area (ha)	Palay-Palay Production Value ('000 Peso)
1. Rice							(735)		(423)		(152)		(59)		(178)		(89)		(385)
-Irrigated	/_1	/_2	/_3				(691)		(423)		(122)		(0)		(0)		(0)		(0)
Wet Season	2.1	6,210	7,825	4,120	3,705	150	556	75	278	20	74	0	0	0	0	0	0	0	0
Dry Season	3.8	6,210	14,159	4,509	9,650	14	135	15	145	5	48	0	0	0	0	0	0	0	0
-Rainfed	1.9	6,210	7,079	4,120	2,959	15	44	0	0	10	30	20	59	60	178	30	89	130	385
2. Upland Crop							(12)		(202)		(5)		(8)		(0)		(0)		(0)
-Irrigated Paddy Field (Dry season)							(12)		(8)		(5)		(0)		(0)		(0)		(0)
Corn	1.0	4,150	4,150	2,596	1,554	8	12	5	8	3	5	0	0	0	0	0	0	0	0
-Rainfed							(0)		(194)		(0)		(8)		(0)		(0)		(0)
Corn	1.0	4,150	4,150	2,596	1,554	0	0	5	8	0	0	5	8	0	0	0	0	0	0
Tomato	6.4	3,500	22,400	6,140	16,260	0	0	3	49	0	0	0	0	0	0	0	0	0	0
Eggplant	5.8	12,000	69,600	6,390	63,210	0	0	0	0	0	0	0	0	0	0	0	0	0	0
String bean	6.2	5,150	31,930	10,178	21,752	0	0	5	109	0	0	0	0	0	0	0	0	0	0
Bitter gourd	6.9	10,000	69,000	21,204	47,796	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taro	3.0	2,850	8,550	3,013	5,537	0	0	5	28	0	0	0	0	0	0	0	0	0	0
3. Plantation							(0)		(135)		(0)		(0)		(0)		(0)		(0)
Citrus	7.0	5,000	35,000	8,082	26,918	0	0	5	135	0	0	0	0	0	0	0	0	0	0
Coconuts	1.0	3,000	3,000	1,500	1,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4. Livestock							(77)		(45)		(14)		(12)		(28)		(14)		(60)
5. Total (1+2+3+4)							(824)		(805)		(171)		(79)		(206)		(103)		(445)
6. Value per ha ('000peso)							(5.0)		(8.2)		(5.7)		(3.2)		(3.4)		(3.4)		(3.4)

Note:
/_1:Unit Yield of Paddy.
/_2:Unit Price of Ordinary Rice (Mill Gate).
/_3:Milling Rate=0.6 ("Kiskisan" type rice mill unit).

Table V.5.8 Net Economic Agricultural Value Under Without Project Condition by CIS(2)

Crops	Unit Yield (ton/ha)	Unit Price (peso/ton)	Production Value per ha (Peso/ha)	Production Cost per ha (Peso/ha)	Net Production Value per ha (Peso/ha)	Pagkalinawan Planted Area (ha)	Pagkalinawan Production Value ('000 Peso)	Ik-Ik Planted Area (ha)	Ik-Ik Production Value ('000 Peso)	Lubo Planted Area (ha)	Lubo Production Value ('000 Peso)	Lumang Nayon Planted Area (ha)	Lumang Nayon Production Value ('000 Peso)	Pulong Ligaya Planted Area (ha)	Pulong Ligaya Production Value ('000 Peso)	Bagumbong Planted Area (ha)	Bagumbong Production Value ('000 Peso)	Total Planted Area (ha)	Total Production Value ('000 Peso)
1. Rice							(89)		(30)		(90)		(217)		(126)		(302)		(2,875)
-Irrigated	/_1	/_2	/_3				(0)		(0)		(75)		(187)		(37)		(245)		(1,780)
Wet Season	2.1	6,210	7,825	4,120	3,705	0	0	0	0	15	56	40	148	10	37	40	148	350	(1,297)
Dry Season	3.8	6,210	14,159	4,509	9,650	0	0	0	0	2	19	4	39	0	0	10	97	50	(483)
-Rainfed	1.9	6,210	7,079	4,120	2,959	30	89	10	30	5	15	10	30	30	89	20	57	370	(1,095)
2. Upland Crop							(0)		(0)		(175)		(80)		(8)		(920)		(1,410)
-Irrigated Paddy Field (Dry season)							(0)		(0)		(3)		(3)		(0)		(0)		(0)
Corn	1.0	4,150	4,150	2,596	1,554	0	0	0	0	2	3	2	3	0	0	0	0	20	(31)
-Rainfed							(0)		(0)		(172)		(77)		(8)		(920)		(31)
Corn	1.0	4,150	4,150	2,596	1,554	0	0	0	0	4	6	4	6	5	8	21	33	44	(0)
Tomato	6.4	3,500	22,400	6,140	16,260	0	0	0	0	1	16	1	16	0	0	11	179	16	(1,379)
Eggplant	5.8	12,000	69,600	6,390	63,210	0	0	0	0	1	63	0	0	0	0	4	253	5	(69)
String bean	6.2	5,150	31,930	10,178	21,752	0	0	0	0	0	0	0	0	0	0	5	109	10	(260)
Bitter gourd	6.9	10,000	69,000	21,204	47,796	0	0	0	0	1	48	0	0	0	0	4	191	5	(316)
Taro	3.0	2,850	8,550	3,013	5,537	0	0	0	0	7	39	10	55	0	0	28	155	50	(218)
3. Plantation							(135)		(0)		(0)		(0)		(0)		(1,256)		(239)
Citrus	7.0	5,000	35,000	8,082	26,918	5	135	0	0	0	0	0	0	0	0	45	1,211	55	(277)
Coconuts	1.0	3,000	3,000	1,500	1,500	0	0	0	0	0	0	0	0	0	0	30	45	30	(1,481)
4. Livestock							(16)		(5)		(16)		(30)		(21)		(97)		(45)
5. Total (1+2+3+4)							(240)		(35)		(281)		(327)		(155)		(2,575)		(457)
6. Value per ha ('000peso)							(6.9)		(3.5)		(8.3)		(5.0)		(3.4)		(12.4)		(6,246)

Table V.5.9 Net Economic Agricultural Value Under With Project Condition by CIS(1)

Crops	Unit Yield (ton/ha)	Unit Price (peso/ton)	Production Value per ha (Peso/ha)	Production Cost per ha (Peso/ha)	Net Production Value per ha (Peso/ha)	Sipsipn Planted Area (ha)	Sipsipn Production Value ('000 Peso)	Mapakla Planted Area (ha)	Mapakla Production Value ('000 Peso)	Manggahan Planted Area (ha)	Manggahan Production Value ('000 Peso)	Bayugo Planted Area (ha)	Bayugo Production Value ('000 Peso)	Liano Planted Area (ha)	Liano Production Value ('000 Peso)	Punta Planted Area (ha)	Punta Production Value ('000 Peso)	Palay-Palay Planted Area (ha)	Palay-Palay Production Value ('000 Peso)
1. Rice							(3,954)		(2,326)		(1,046)		(1,164)		(1,512)		(814)		(2,442)
-Irrigated	/_1	/_2	/_3																
Wet Season	5.0	7,500	24,375	12,743	11,632	170	1,977	100	1,163	45	523	50	582	65	756	35	407	140	1,628
Dry Season	5.0	7,500	24,375	12,743	11,632	170	1,977	100	1,163	45	523	50	582	65	756	35	407	70	814
2. Upland Crop							(481)		(2,125)		(872)		(139)		(278)		(93)		(2,080)
-Irrigated Paddy Field (Dry season/3rd Crop)							(481)		(278)		(130)		(139)		(278)		(93)		(2,080)
Cowpea	1.5	12,000	18,000	8,746	9,254	52	481	30	278	14	130	15	139	30	278	10	93	0	0
Mongo bean	2.0	13,000	26,000	7,954	18,046	0	0	0	0	0	0	0	0	0	0	0	0	35	632
Watermelon	17.0	3,200	54,400	13,019	41,381	0	0	0	0	0	0	0	0	0	0	0	0	35	1,448
-Irrigated Upland Field							(0)		(1,847)		(742)		(0)		(0)		(0)		(0)
Wet Season							(0)		(1,069)		(429)		(0)		(0)		(0)		(0)
Corn	2.8	4,150	11,620	7,887	3,733	0	0	6	22	3	11	0	0	0	0	0	0	0	0
Tomato	15.0	3,500	52,500	12,395	40,105	0	0	5	201	2	80	0	0	0	0	0	0	0	0
Eggplant	12.0	12,000	144,000	12,293	131,707	0	0	5	659	2	263	0	0	0	0	0	0	0	0
Soy bean	1.0	20,000	20,000	10,140	9,860	0	0	5	49	2	20	0	0	0	0	0	0	0	0
String bean	8.0	5,150	41,200	13,693	27,507	0	0	5	138	2	55	0	0	0	0	0	0	0	0
Dry Season							(0)		(778)		(313)		(0)		(0)		(0)		(0)
Bitter gourd	14.0	10,000	140,000	28,101	111,899	0	0	5	559	2	224	0	0	0	0	0	0	0	0
Corn	2.8	4,150	11,620	7,887	3,733	0	0	19	71	8	30	0	0	0	0	0	0	0	0
Soy bean	1.0	20,000	20,000	10,140	9,860	0	0	15	148	6	59	0	0	0	0	0	0	0	0
3. Plantation							(0)		(335)		(0)		(0)		(0)		(0)		(0)
-Irrigated Upland Field																			
Citrus	15.0	5,000	75,000	8,082	66,918	0	0	5	335	0	0	0	0	0	0	0	0	0	0
4. Livestock							(712)		(545)		(235)		(209)		(272)		(147)		(586)
5. Total (1+2+3+4)							(5,147)		(5,331)		(2,153)		(1,512)		(2,062)		(1,054)		(5,108)
6. Value per ha ('000peso)							(30.3)		(41.0)		(38.4)		(30.2)		(31.7)		(30.1)		(36.5)

Table V.5.9 Net Economic Agricultural Value Under With Project Condition by CIS(2)

Crops	Unit Yield (ton/ha)	Unit Price (peso/ton)	Production Value per ha (Peso/ha)	Production Cost per ha (Peso/ha)	Net Production Value per ha (Peso/ha)	Pagkalinawan Planted Area (ha)	Pagkalinawan Production Value ('000 Peso)	Ik-Ik Planted Area (ha)	Ik-Ik Production Value ('000 Peso)	Lubo Planted Area (ha)	Lubo Production Value ('000 Peso)	Lumang Nayon Planted Area (ha)	Lumang Nayon Production Value ('000 Peso)	Puiong Ligaya Planted Area (ha)	Puiong Ligaya Production Value ('000 Peso)	Bagumbong Planted Area (ha)	Bagumbong Production Value ('000 Peso)	Total Planted Area (ha)	Total Production Value ('000 Peso)
1. Rice							(1,046)		(1,046)		(698)		(2,210)		(1,046)		(1,978)		(21,286)
-Irrigated	/_1	/_2	/_3																
Wet Season	5.0	7,500	24,375	12,743	11,632	45	523	45	523	30	349	95	1,105	45	523	85	989	950	11,050
Dry Season	5.0	7,500	24,375	12,743	11,632	45	523	45	523	30	349	95	1,105	45	523	85	989	880	10,236
2. Upland Crop							(926)		(130)		(1,188)		(278)		(130)		(6,623)		(15,339)
-Irrigated Paddy Field (Dry season/3rd Crop)							(194)		(130)		(83)		(278)		(130)		(241)		(4,532)
Cowpea	1.5	12,000	18,000	8,746	9,254	21	194	14	130	9	83	30	278	14	130	26	241	265	2,452
Mongo bean	2.0	13,000	26,000	7,954	18,046	0	0	0	0	0	0	0	0	0	0	0	0	35	632
Watermelon	17.0	3,200	54,400	13,019	41,381	0	0	0	0	0	0	0	0	0	0	0	0	35	1,448
-Irrigated Upland Field							(732)		(0)		(1,105)		(0)		(0)		(6,382)		(10,807)
Wet Season							(429)		(0)		(643)		(0)		(0)		(3,825)		(6,394)
Corn	2.8	4,150	11,620	7,887	3,733	3	11	0	0	4	15	0	0	0	0	16	60	32	119
Tomato	15.0	3,500	52,500	12,395	40,105	2	80	0	0	3	120	0	0	0	0	18	722	30	1,203
Eggplant	12.0	12,000	144,000	12,293	131,707	2	263	0	0	3	395	0	0	0	0	18	2,371	30	3,951
Soy bean	1.0	20,000	20,000	10,140	9,860	2	20	0	0	3	30	0	0	0	0	18	177	30	296
String bean	8.0	5,150	41,200	13,693	27,507	2	55	0	0	3	83	0	0	0	0	18	495	30	825
Dry Season							(303)		(0)		(462)		(0)		(0)		(2,557)		(4,413)
Bitter gourd	14.0	10,000	140,000	28,101	111,899	2	224	0	0	3	336	0	0	0	0	18	2,014	30	3,357
Corn	2.8	4,150	11,620	7,887	3,733	8	30	0	0	10	37	0	0	0	0	53	198	98	366
Soy bean	1.0	20,000	20,000	10,140	9,860	5	49	0	0	9	89	0	0	0	0	35	345	70	690
3. Plantation							(335)		(0)		(0)		(0)		(0)		(5,019)		(5,688)
-Irrigated Upland Field																			
Citrus	15.0	5,000	75,000	8,082	66,918	5	335	0	0	0	0	0	0	0	0	75	5,019	85	5,688
4. Livestock							(256)		(188)		(184)		(398)		(188)		(959)		(4,860)
5. Total (1+2+3+4)							(2,563)		(1,364)		(2,070)		(2,886)		(1,364)		(14,579)		(47,173)
6. Value per ha (peso)							(42.0)		(30.3)		(47.0)		(30.4)		(30.3)		(63.7)		(40.5)

Table V.5.10 Livestock Benefit

	Without	With	Incremental
I. Nos. of Livestock Production (Marketable)			
1. Beef Cattle	0	700	700
2. Dairl Cattles	300	0	-300
3. Hogs	445	520	75
4. Poultly			
-Eggs	54,450	378,000	323,550
-Broiler	0	10,400	10,400
II. Unit Price of Livestock Production (Marketable)			
1. Beef Cattle (peso/kg)	60.0	60.0	60.0
2. Daily Cattle (peso/lit.)	4.5	4.5	4.5
3. Hogs (peso/kg, pork)	29.0	29.0	29.0
4. Poultly			
-Eggs (peso/pc.)	1.5	1.5	1.5
-Broiler (peso/non-dressed)	38.0	38.0	38.0
III. Total Production Value ('000peso)			
1. Beef Cattle	0	4,725	4,725
2. Dairl Cattles	203	0	-203
3. Hogs	323	377	54
4. Poultly			
-Eggs	82	567	485
-Broiler	0	395	395
Total Livestok Production Value	607	6,064	5,457
IV. Proction Cost			
1. Feed	100	477	377
2. Others	50	728	678
V. Net Production Value	457	4,859	4,403

FIGURES

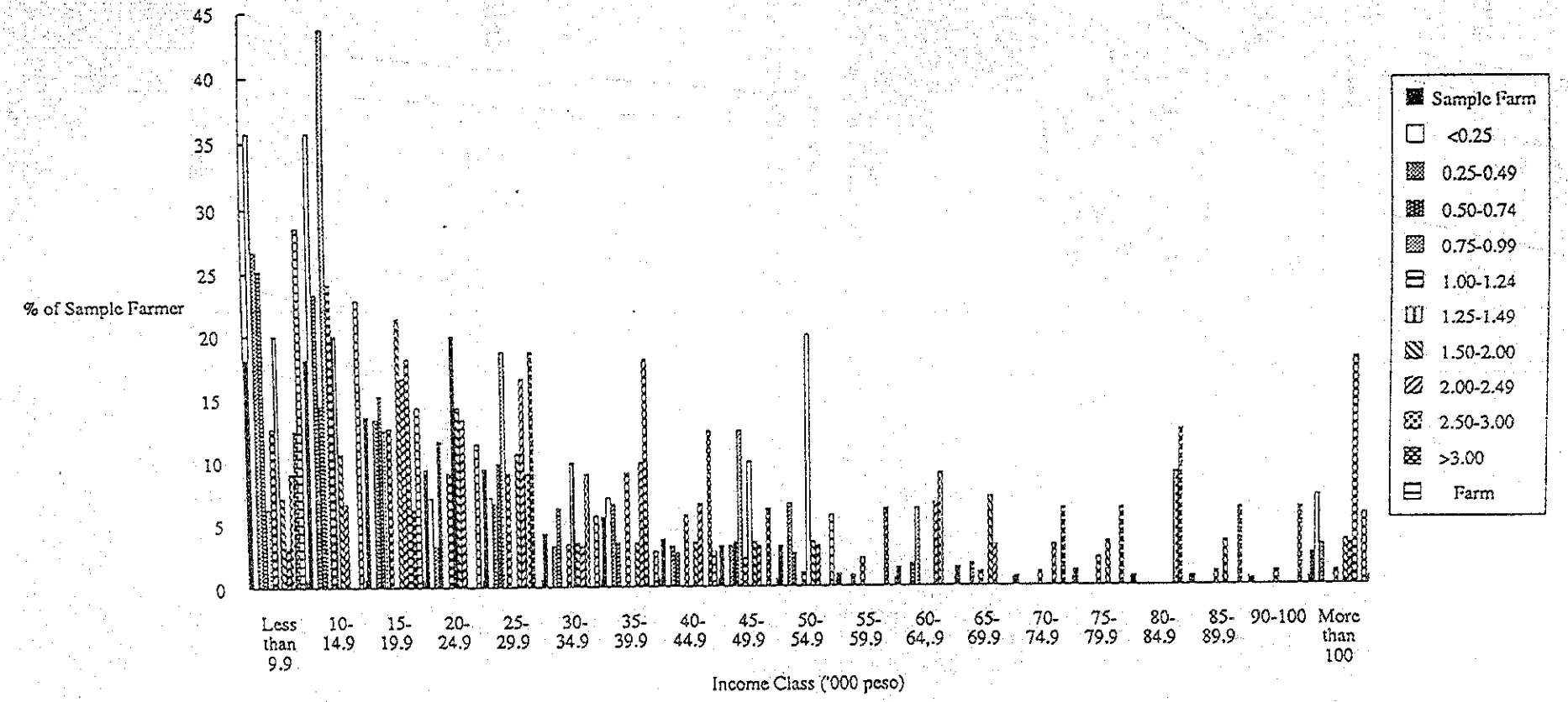

Fig. V.3.1 Farm Income Distribution by Land Holding Size

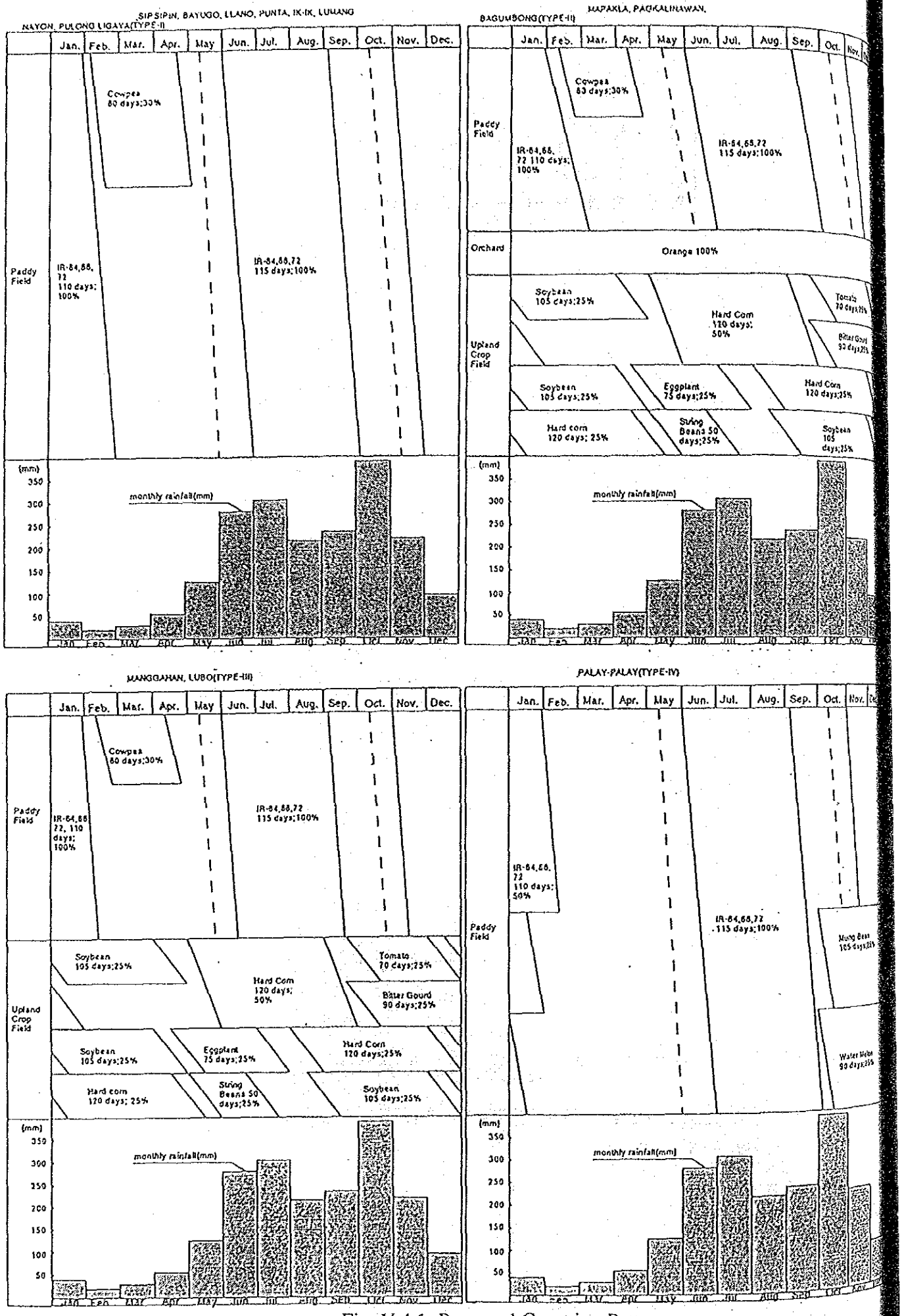

Fig. V.4.1 Proposed Cropping Pattern

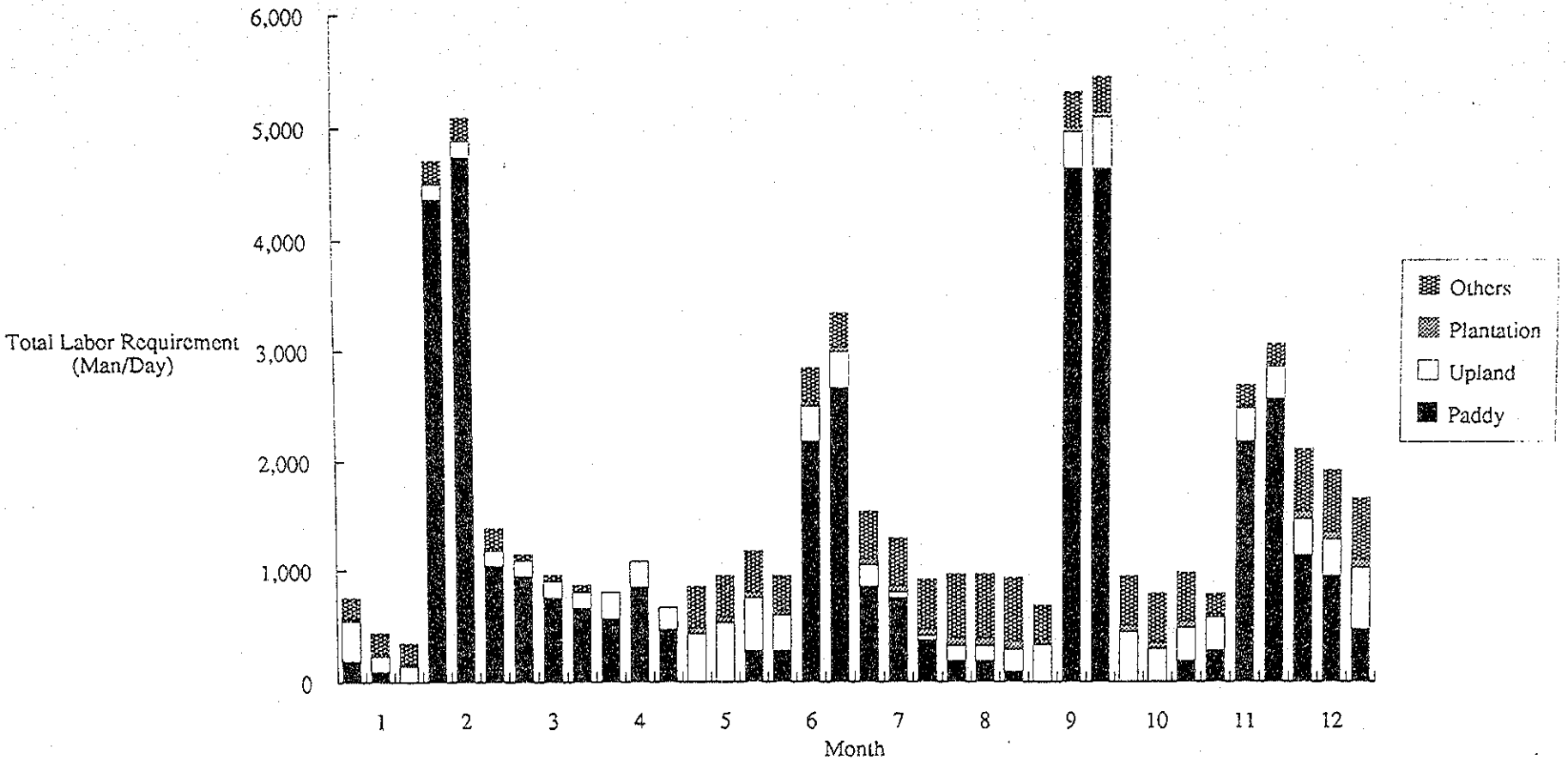

Fig. V.4.2 Agricultural Labor Requirement Under With Project Condition