

ANNEX P. ENVIRONMENT

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Table P.1-1 Physiography, Rainfall Erosivity and Soil Erodibility by Model Area

Priority Marginal Area	Relative Rolling Area(%)	Relative Steep/ Hilly Area (%)	Erosivityton- m ² /ha-hr (1)	Relative Erodibility (2)
Sappa-ac ARC, Bangued, Abra, CAR	40		900	Moderate-High
Talugtug ARC, San Juan, La Union, Reg I	15		1000	Moderate- High
Cofcaville ARC, Maddela, Quirino, Reg. II	44	66	1400	Moderate
Montilla ARC, Tuyo, Balanga, Bataan, Reg. III	62		900	Low-Moderate
Maulawin ARC, Calauag, Quezon, Reg. IV	20	40	1200	Moderate-High
Pagasa ARC, Tinanbac, Camarines Sur, Reg. V	83	10	1400	Moderate-High
Abiera Estate ARC, Altavas, Aklan, Reg. VI	74	26	900	Moderate
San Vaccinate ARC, Trinidad, Bohol, Reg. VII	30	60	700	Moderate
Marangog ARC, Hilongos, Leyte, Reg. VIII	45	35	1100	Moderate
Silae, ARC, Malaybalay Bukidnon, Reg. X	40	40	1000	Moderate
Kipalili ARC, Asuncion, Davao, Reg. XI	30	50	750	Moderate
Mar-i ARC, Surigao City Surigao Del Norte, Reg. XIII	25	70	1500	Moderate

(1) Source: Bayotlang (19)

(2) Source: Badayos (19)

(3) Corn planted in the terraced paddy field

Table P.1-2 Frequency Distribution of hazard/Calamity by Model Areas

(Unit: %)

Priority Marginal Area	Land- slide	Soil Erosion	Typhoon hazard	Calamity Fire	Grassland Fire	Occurrence of Flooding	Shallow Topsoil
Suppa-ac ARC, Bangued, Abra, CAR	24	24	26			26	22
Talugtug ARC, San Juan, La Union, Reg I	22	24	21		2	2	12
Cofcaville ARC, Maddela, Quirino, Reg. II	28	46	98		2	6	28
Montilla ARC, Tuyo, Balanga, Bataan, Reg. III	2	4	70		50	2	0
Maulawin ARC, Calauag, Quezon, Reg. IV	20	12	98	28	2	86	0
Pagasa ARC, Tinambac, Camarines Sur, Reg. V	38	26	100	2	8	5	24
Abiera Estate ARC, Altavas, Aklan, Reg. VI	28	36	30			58	30
San Vicente ARC, Trinidad, Bohol, Reg. VII	8	32	56			32	44
Marangog ARC, Hilongos, Leyte, Reg. VIII	28	44	86			12	58
Silae, ARC, Malaybalay, Bukidnon, Reg. X	68	72	4			54	56
Kipallili ARC, Asuncion, Davao, Reg. XI	44	54			20	36	36
Mat-i ARC, Sungao C., Surigao Norte, Reg. XIII	70	60	92		18	54	44

Source: Farmer's Agro-Socio-Economic Survey, JICA Study Team, 1996

Table P.1-3 Occurrence of Water Pollution and Water-Borne Diseases, Source of Drinking Water and Without Toilet by Priority Model Areas

Priority Marginal Area	Water Pollution (%)	Source of Drinking Water		Water Born Diseases					Without Toilet		
		Use of shallow well (%)	Use of spring (%)	Diarrhea	Amoebiasis	Dysentery	Gastroenteritis	ARC area	Barangay	Barangay (%)	Barangay (%)
Soppac ARC, Bangued, Abra, CAR		36	2	YI			YX		43	6	6
Talugtog ARC, San Juan, La Union, Reg. I		12	2							5.6	5.6
Cofeaville ARC, Maddela, Quirino, Reg. II	12	10	10							2	2
Montila ARC, Tuvo, Balanga, Bataan, Reg. III	2	14	38	YX						16	16
Maulawin ARC, Calauag, Quezon, Reg. IV		82	10	YX					55	19	19
Pagasa ARC, Tinambac, Canarines Sur, Reg. V	4 (1)	30	20			X				33	33
Abiera Estate ARC, Alitavas, Aklan, Reg. VI	24 (3)	74		Y						8	8
San Vicente ARC, Trinidad, Bohol, Reg. VII	2	56	8	YX					20	15	15
Marangog ARC, Hilongos, Leyte, Reg. VIII	1	10	84	Y			YX	24		24	24
Silac, ARC, Malaybalay, Bukidnon, Reg. X	12	4	94	YX				42	20	8	8
Kipalili ARC, Asuncion, Davao, Reg. XI	8	24	6							30	30
Mari ARC, Surigao City, Surigao Del Norte, Reg. XIII	12		54							27	27

(1) one respondent indicated pesticide pollution

(2) 8 respondents indicated pesticide pollution

1- key informant interview

Y- Disease among children

X- Disease among the population

Table P.1-4 Variety of Crops grown in the Model Areas

Priority Marginal Area	Lowland Rice	Upland Rice	Corn	Vegetables	Rootcrops	Mungbean	Tobacco	Coconut	Banana	Mango	Cacao	Coffee
Sagay-ar ARC, Bangued, Abra, CAR	T	T	T	T	T	T	T	T	T	T	T	T
Talugog ARC, San Juan, La Union, Reg I	X	D	X	X			X		X	X		
Cofaville ARC, Maddela, Quirino, Reg II	X	D	X	X					X	D		
Moztilla ARC, Tuyo, Balanga, Batang, Reg III	X		X	X	X			X	X	X		X
Maulawin ARC, Calauag, Quezon, Reg IV	X	X	X	D	X	X		X	X	X		
Pagasa ARC, Tinambac, Cam. Sur, Reg V	X	X		X				D	X			X
Abietra Estate, Alaynas, Aklan, Reg VI	X	X		X	X			D	X			
San Vicente ARC, Trinidad, Bohol, Reg VII	X	D	X	X	X			D	X	X		
Maramag ARC, Hilongos, Leyte, Reg VIII	X	X	D		D		X	X	X			
Silac ARC, Malaybalay, Bukidnon, Reg X	X	X	X		X			D				
Xipellit ARC, Asuncion, Davao, Reg XI	X	X	D	X				D	X		X	
Mat-i ARC, Surigao City, Surigao Del Norte, Reg XIII	X	D			X			D	X			

Note:

T - Traditional variety

I - Improved variety

D - Dominant

X - Present

Table P.1-5 Frequency Distribution(%) of the Preferred Agro-Forestry Species by Farmer Respondents in Model Areas

Priority Model Area	Acacia	Bamboo	Gemilina	Ipil-ipil	Kamagong	Mahogany	Paper Tree	Neem Tree	Narra	Yakal
Sappa-ac ARC, Bangued, Abra, CAR			38	2		68		2	26	
Talugtug ARC, San Juan, La Union, Reg I		4	6	4	2	28	2		18	
Cofcaville ARC, Maddela, Quirino, Reg II	4		22	2		20			12	
Montilla ARC, Tuvo, Balanga, Bataan, Reg III		2	2			6			2	
Maulawin ARC, Calauag, Quezon, Reg IV			2			8				
Pag-asa ARC, Tinambac, Cam. Sur, Reg. V						6			10	
Abierta Estate, Altavas, Aklan, Reg. VI	4		14	2		72	10		6	
San Vicente ARC, Trinidad, Bohol, Reg. VII	4		52	2		56				
Marangog ARC, Hilongos, Leyte, Reg. VIII			10			4	2		2	8
Silae ARC, Malaybalay, Bukidnon, Reg. X			58	2		12			8	
Kipalili ARC, Asuncion, Davao, Reg. XI			16			20			2	
Mat-i ARC, Surigao City Surigao Del Norte, Reg. XIII			62	16					8	

Table P.1-6 Frequency Distribution of Willingness and Possession of the Needed Skills in Various Agro-Forestry Production System of the Farm Respondents in Model Areas

Priority Marginal Area	Firewood Production		Bamboo Production		Charcoal Production		Bamboo Shoot Production	
	Willingness	With Skill	Willingness	With Skill	Willingness	With Skill	Willingness	With Skill
Sappa-ac ARC, Bangued, Abra, CAR	28	16	38	6	46	32	44	12
Talugtug ARC, San Juan, La Union, Reg. I	26	22	40	12	28	22	58	16
Cofeaville ARC, Maddela, Quirino, Reg. II	22	10	20	8	16	12	12	4
Montilla ARC, Tuyo, Balanga, Bataan, Reg. III	4	2	10	8	2	2	8	4
Maulawin ARC, Calauag, Quezon, Reg. IV	10	34	30	12	20	18	18	6
Pag-asa ARC, Tinambac, Cam. Sur, Reg. V	30	20	52	28	26	24	18	14
Abierra Estate, Altavas, Aklan, Reg. VI	54	34	64	36	54	34	56	34
San Vicente ARC, Trinidad, Bohol, Reg. VII	38	24	38	12	24	40	32	4
Marangog ARC, Hilongos, Leyte, Reg. VIII	46	32	34	20	38	28	30	14
Silae ARC, Malaybalay, Bukidnon, Reg. X	16	16	74	50	44	34	52	20
Kipailili ARC, Asuncion, Davao, Reg. XI	60	36	66	30	62	34	44	8
Mat-i ARC, Surigao City, Surigao Del Norte, Reg. XIII	54	30	66	18	52	20	54	18

Table P.1-7 Livestock and poultry Raised by 50 Farmer Respondents in Model Areas

Priority Marginal Area	Cattle	Carabao	Goat	Pig	Chicken	Duck	Geese	Turkey
Sappa-ac ARC, Bangued, Abra, CAR	66	58	79	61	372			
Talugtog ARC, San Juan, La Union, Reg I	39	42	70	11	264			
Cofcaville ARC, Maddela, Quirino, Reg. II	23	67	10	74	533		X	X
Mortilla ARC, Tuyo, Balanga, Bataan, Reg. III	65	10	76	21	372			
Maulawin ARC, Calauag, Quezon, Reg. IV	31	64	10	73	337			
Pag-asa ARC, Tinambac, Cam. Sur, Reg. V	38	53		73	501			
Abierra Estate, Altagas, Aklan, Reg. VI	43	42	2	97	272	7		
San Vicente ARC, Trinidad, Bohol, Reg. VII	26	47	19	65	557	X		
Marangog ARC, Hilongos, Leyte, Reg. VIII	27	79	78	66	257			
Silac ARC, Malaybalay, Bukidnon, Reg. X	25	37	16	37	354			
Kipalili ARC, Asuncion, Davao, Reg. XI		33	31	87	323	X		
Mat-i ARC, Surigao City Surigao Del Norte, Reg. XIII	11	56	32	82	343			

Note:

X - key informant is the source of data

Table P.1-8 Nutritional Status of Children below Seven Years Old in the Model Areas

Status	Region I		Region II		Region III		Region IV		Region V		Region VI		Region VII		Region VIII		Region X		Region XI		Region XIII	
	Abra	Bangued	San Juan	Macdula	Tayao	Bataan	Manila	Quezon	Quezon	Pagasa	Cam. Sur	Aberra	Dagupan	Alava	San Vicente	Trinidad	Marangog	Hilaga	Marangog	Marangog	Marangog	Marangog
Nutritional status of children	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Overweight	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Underweight	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Number per 1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1st degree	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2nd degree	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3rd degree	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table P.1-10 family Planning Services offered and accepted by Model Areas

Family Planning Services Offered	Region I		Region II		Region III		Region IV		Region V		Region VI		Region VII		Region VIII		Region IX		Region X		Region XI		Region XII	
	San Juan, La Union	San Juan, La Union	Marikina	Quezon	Quezon	Quezon	Quezon	Quezon	Pagasa Cam. Sur	Tinambac	Albarrin	Dalipolo	Albarrin	San Vicente	Trinidad	Marikina	Marikina	Marikina	Marikina	Marikina	Marikina	Marikina	Marikina	Marikina
Pill	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Condom	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IUD	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Legation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vasectomy	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DMPA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Simulation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Reproductive method	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Accepted Method																								
Pill	691	691	13	1163	104	1601	1601	1601	ND	352	19	9	25	50	50	43	43	28	28	28	28	28	28	28
Condom	5	5	1	17	1	11	11	11	ND	38	3	1	46	46	46	15	15	4	4	4	4	4	4	4
OBPO/DVGA	17	149	5	32	1	1	1	1	ND	38	1	1	119	119	119	15	15	15	15	15	15	15	15	15
IUD	4	38	1	343	2	62	62	62	ND	3	3	1	48	48	48	4	4	2	2	2	2	2	2	2
Tubal Ligation																								
Simulation Method	8	83				2031																		
Simulation's Effectivity	18	184																						

Note:
X - provided but not quantified
ND - no data

Table P.1-11 Five Common Causes of Morbidity among Children in Model Areas

Common Diseases	CAM		Region I		Region II		Region III		Region IV		Region V		Region VI		Region VII		Region VIII		Region IX		Region X		Region XI		Region XII	
	Suriname	Bangladesh	Trinidad	La Union	San Juan	Cafeteira	Madalena	Quilima	Torre	Shillong	Manuelita	Quilima	Alborno	Dalipaly	Alborno	San Vicente	San Francisco	Manabito	Manabito	Manabito	Manabito	Manabito	Manabito	Manabito	Manabito	Manabito
1. Diarrhea	X	X	ND			X	X	X	50																	
2. Infection									200																	
3. Schistosomiasis																										
4. Dengue																										
5. Pneumonia																										
6. Gastroenteritis	X	X																								
7. Dengue fever																										
8. Malaria																										
9. Anemia																										
10. Skin disease	X																									
11. Arthritis																										
12. Dysentery																										
13. Parasitosis																										
14. Stomach ache																										
15. Typhoid fever																										
16. Fever																										
17. Cough with fever		X																								
18. Cough with cold		X																								
19. Pneumonia with infection																										
20. Tetanus																										
21. Upper respiratory tract infection																										
22. Tuberculosis																										
23. Measles																										
24. Smallpox																										
25. Convulsion																										
26. Malnutrition																										

Table P.1-12 Five Most Common Causes of Morbidity in Model Areas

Common Diseases	CAR		Region I		Region II		Region III		Region IV		Region V		Region VI		Region VII		Region VIII		Region X		Region XI		Region XIII	
	Syndrome	Bangladesh	Telapragada	San Juan, La Union	Madagascar	Quintana Roo	Togo	Batavia	Manila	Quezon	Calcutta	Papua New Guinea	Tianjin, Cam. Sur	Albarran	San Vicente	Trinidad, Barbados	Mauritius	Hong Kong	Singapore	Malaysia, Brunei	Nippon	Taiwan, Devo	Mal-4	Manila City
1. Dysentery	X						800	1,111		72,900					X	43,142		20,141 X	164		20,136		341	
2. Influenza	X						20,000			14,970		134		190	100	100		18,000 X	50					
3. Bronchitis								725		41,560								X						
4. Schistosomiasis																								
5. Pneumonia																		681 X	229		230		331	
6. Malaria																		511 X	33		200			
7. Tuberculosis	X																							
8. Skin diseases	X																							
9. Gastroenteritis	X						300																	
10. Measles	X																							
11. Dysentery																								
12. Parasitosis																								
13. Upper respiratory tract infection	X							274		107														
14. Hypertension																								
15. Malnutrition																								
16. Cardiovascular diseases																								
17. Musculo-skeletal diseases																								
18. Dysentery																								
19. Anemia																								
20. Fever																								
21. Hepatitis																								
22. Typhoid fever																								
23. Respiratory diseases																								
24. Systemic viral infections																								
25. Wound																								
26. Urinary tract infection																								
Pallor																								

Note:
X - reported but not quantified
ND - No data

Table P.1-13 Annual Medical Expenses of Household in Model Areas

Priority Marginal Area	Annual Medical Expenditure	Percent of Annual Household expenses
Sappa-ac ARC, Bangued, Abra, CAR	788	4
Talugtug ARC, San Juan, La Union, Reg I	1081	2
Cofcaville ARC, Maddela, Quirino, Reg II	2585	7
Montilla ARC, Tuyo, Balanga, Bataan, Reg III	3589	4
Maulawin ARC, Calauag, Quezon, Reg. IV	1028	3
Pag-asa ARC, Tinambac, Cam. Sur. Reg. V	1564	5
Abierra Estate, Altavas, Aklan, Reg. VI	819	3
San Vicente ARC, Trinidad, Bohol, Reg. VII	1337	5
Marangog ARC, Hilongos, Leyte, Reg. VIII	320	1
Silae ARC, Malaybalay, Bukidnon, Reg. X	1204	43
Kipalili ARC, Asuncion, Davao, Reg. XI	554	ND
Mat-i ARC, Surigao City Surigao Del Norte, Reg. XIII	1907	5

Table P.1-14 Leading Causes of Death among Population and Children in Model Areas

Major Cause of Death	Region I		Region II		Region III		Region IV		Region V		Region VI		Region VII		Region VIII		Region IX		Region X		Region XI		Region XII	
	San Juan	Trujillo	San Juan	Trujillo	San Juan	Trujillo	San Juan	Trujillo	San Juan	Trujillo	San Juan	Trujillo	San Juan	Trujillo	San Juan	Trujillo	San Juan	Trujillo	San Juan	Trujillo	San Juan	Trujillo	San Juan	Trujillo
Adults (number per 10,000 population)																								
Unborn																								
Cardiovascular disease																								
Cancer																								
Sudden death																								
Tuberculosis																								
Unsanitary conditions																								
Meningitis																								
Drowning																								
Severe pneumonia																								
Children 5 yr old or younger																								
Still birth																								
Fetal distress																								
Accident																								
Pneumonia																								
Severe pneumonia																								
Systemic viral infection																								
Cardiovascular disease																								
Influenza																								
Fever																								
Malaria																								
Sudden death																								
Conjunctival anomaly																								
Breast cancer																								
Diabetes																								
Anthrax																								
Amoebiasis																								
Plasmodium																								
Female anorexia																								
Agitation																								
Syphilis																								
Hypertension																								
Old Age																								
Pneumonia																								
Prothrombinemia																								
Systemic viral infection																								
Cardio-respiratory disease																								
Still birth																								

FIGURE P.1-1

CONCEPTION FRAMEWORK OF COMMUNITY-BASED
ENVIRONMENTAL AND PUBLIC HEALTH MANAGEMENT

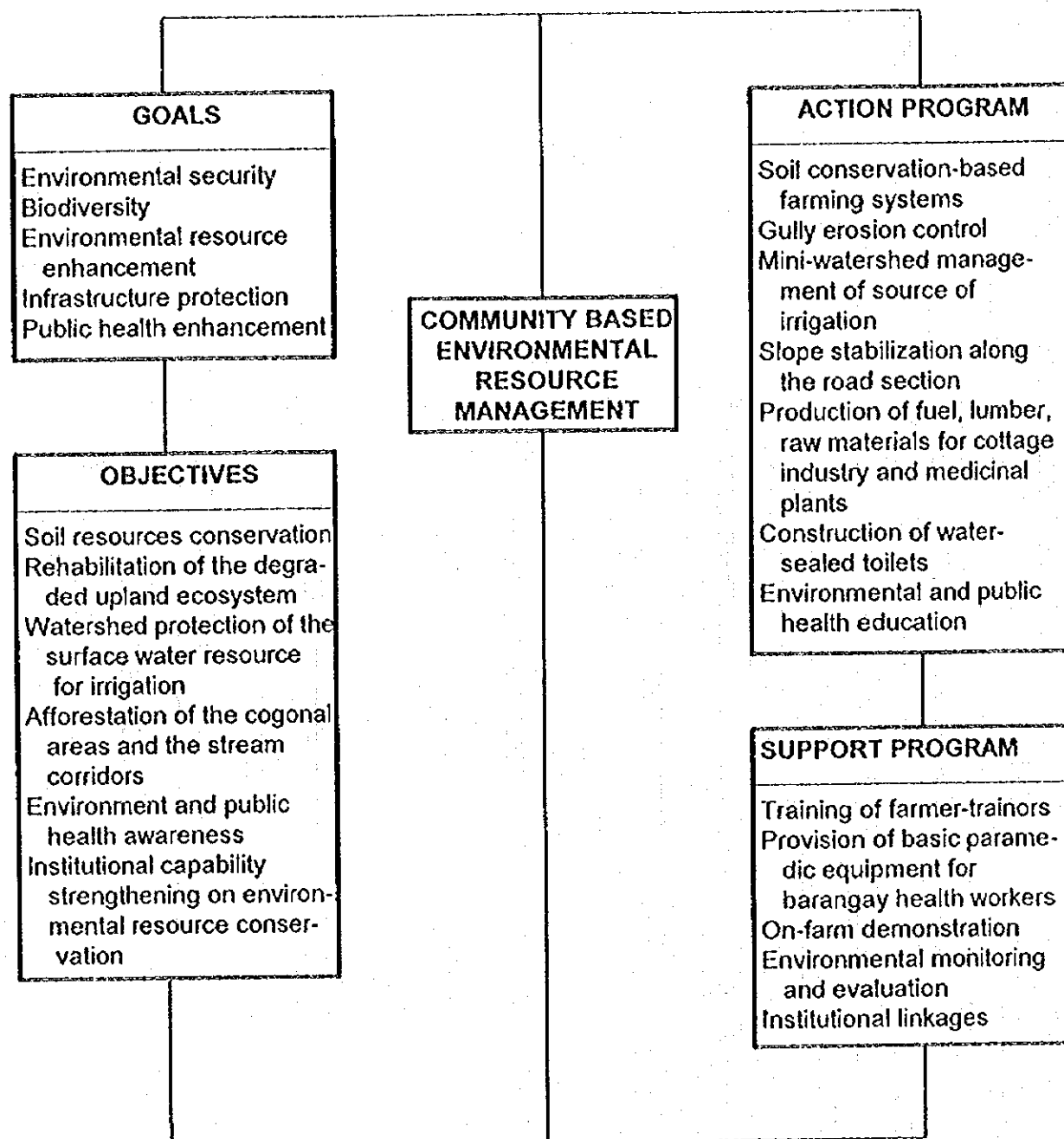


Table P.2-1 Physiography, land Use, Rainfall Erosivity and Soil Erodibility

Project Areas	Relative Rolling Area (%)	Relative Steep/ Hilly Area (%)	Extent of Grass and Shrubland (%)	Area Planted to Annual Crops (%)	Erosivity ton m ² /ha-hr(1)	Relative Erodibility (2)
Sappaac ARC, Bangued, Abra, CAR	43.4	30.4	58.9	8.0	900	Moderate-High
Cotcaville ARC, Maddela, Quirino, Reg.- II	41.4	31.6	48.4	33.3	1,400	Moderate
Marangog ARC, Hilongos, Leyte, Reg. - VIII	37.0	54.6	41.8	10.0	1,000	Moderate
Silae ARC, Malaybalay Bukidnon, Reg. - X	29.2	44.5	49.4	41.5	1,000	Moderate

(1) Source : Bayotlang (1986)

(2) Source: Badayos (1994)

Note: Annual crops other than lowland rice paddy

Table P.2-2 Estimated Soil Erosion with Various Land Uses at Different Slope in Sappaac Area

Slope (%)	Grassland with Upland Crops	Orchardstons (ton/ha)	Forest with Shrubsand Grasses
0-8	12	12	6
	67	58	28
18-30	102	85	51

Table P.2-3 Frequency Distribution of Farmer Respondents indicating the Occurrence of Landslide, Soil Erosion, Grassland Fire, Typhoon and Flooding Hazard in Their Farmlots during the Last Five Years

Project Areas	Land-slide	Soil Erosion	Typhoon hazard	Grassland Fire	Occurrence of Flooding	Shallow Topsoil
Sappaac ARC, Bangued, Abra, CAR	24	24	26		26	22
Cofcaville ARC, Maddela, Quirino, Reg.-II	28	46	98	2	6	28
Marangog ARC, Hilongos, Leyte, Reg.-VIII	28	44	86		12	58
Silac ARC, Malaybalay, Bukidnon, Reg.-X	68	72	4		54	56

Table P.2-4 Frequency Distribution of Farmer Respondents indicating the Occurrence of water Pollution and Water-borne Diseases of Drinking Water and of the Presence of Toilet in the Farmhouseholds

Project Areas	Water Pollution (%)	Source of Drinking Water			Without Toilet		
		Use of shallow well (%)	Use of spring (%)	Gastroenteritis	ARC (%)	Barangay (%)	Municipality (%)
Sappaac ARC, Bangued, Abra, CAR		36	2	YX	30	43	6
Cofcaville ARC, Maddela, Quirino, Reg.- II	12	10	10		20		2
Marangog ARC, Hilongos, Leyte, Reg.-VIII	I	10	84	YX	24		24
Silac ARC, Malaybalay, Bukidnon, Reg.-X	12	4	94		42	20	8

(1) one respondent indicated pesticide pollution

Y - Disease among the children

X - Disease among the population

Table P.2-5 Coliform Test of the Drinking Water in Sappaac Area

Sampling Location of Drinking Water	Nature of Drinking Water Source	Number of Blue Spots on the Test Paper	Water Quality 1/
Parparia	Level II, water is available only in July-Jan; Source is in Sitio Pita	75	Still below the critical level; chlorination or boiling is needed to have safe drinking water
Sappaac Proper	Artesian well near the creek	80	Still below the critical level; boiling is needed to have safe drinking water
Sappaac South	Artesian well near the cemented tank under the mango trees; water yield decreases in May	85	Still below the critical level; water needs to be boiled to have safe drinking water
Sappaac South	Artesian well inside the private property; about 40 ft deep	3	Safe for drinking
Sappaac Proper	Artesian well under the mango tree and used by the community for washing clothes; color turns orange during the dry season	1	Safe for drinking
Sappaac Proper	Artesian well near the road and in the adjacent lot of the Barangay Chairman	90	Still below the critical level; The water needs to be boiled to ensure free from water-borne diseases
Sappaac Proper	Private artesian well of the store	1	Safe for drinking

1/ Critical level - 100 blue spots on the test paper

Table P.2-6 Frequency Distribution (%) of the Preferred Agroforestry Species by the Farmer Respondents

Project Areas	Acacia	Gemilina	Ipil-ipil	Mahogany	Paper Tree	Neem Tree	Narra	Yakal
Sappaac ARC, Bangued, Abra, CAR		38	2	68		2	26	
Cofcaville ARC, Maddela, Quirino, Reg.-II	4	22	2	20			12	
Marangog ARC, Hilongos, Leyte, Reg.-VIII		10		4	2		2	8
Silac ARC, Malaybalay Bukidnon, Reg.-X		58	2	12			8	

Table P.2-7 Frequency Distribution (%) of the Farmer Respondents Who are Willing to Practice and Have the Needed Skills in Various Agroforestry Production Systems

Project Areas	Firewood Production		Bamboo Production		Charcoal Production		Bamboo Shoot Production	
	Willingness	With Skill	Willingness	With Skill	Willingness	With Skill	Willingness	With Skill
Sappaac ARC, Bangued, Abra, CAR	28	16	38	6	46	32	44	12
Cofcaville, ARC Maddela, Quirino, Reg.-II	22	10	20	8	16	12	12	4
Marangog ARC, Hilongos, Leyte, Reg.-VIII	46	32	34	20	38	28	30	14
Silac ARC, Malaybalay, Bukidnon, Reg.-X	16	16	74	50	44	34	52	20

Table P.2-8 Variety of Crops Grown in the Project Areas

Project Area	Lowland Rice	Upland Rice	Corn	Vegetables	Rootcrops	Mungbean	Tobacco	Coconut	Banana	Mango	Cacao	Coffee
Sappaac ARC, Bangued, Abra, CAR	T	T	T	T	T	T	T	T	T	T	T	T
Cofcaville ARC, Maddela, Quirino, Reg.- II	X	D	X	X	X		X		X	D	X	
Marangog ARC, Hilongos, Leyte, Reg.- VIII	X	X	X	X	X		X	X	D	D		X
Silac ARC, Malaybalay, Bukidnon, Reg.- X	X	X	X		X		X	D	X			

Note:

T - Traditional variety

I - Improved variety

D - Dominant

X - Present

Table P.2-9 Livestock and Poultry raised by 50 Farmer Respondents

Project Areas	Cattle	Carabao	Goat	Pig	Chicken	Geese	Turkey
Sappaac ARC, Bangued, Abra, CAR	66	58	79	61	372		
Cofcaville ARC, Maddela, Quirino, Reg.- II	23	67	10	74	533	X	X
Marangog ARC, Hilongos, Leyte, Reg.- VIII	27	79	78	66	257		
Silac ARC, Malaybalay, Bukidnon, Reg.- X	25	37	16	37	354		

Note:

X - key informant is the source of data

Table P.2-10 Nutritional Status of Children below Seven Years Old

Status	CAR			Region II		Region VIII		Region X	
	Sappaac	Bangued, Abra	Cofcaville	Maddela, Quirino	Marangog	Hilongos, Leyte	Silac	Malaybalay, Bukidnon	
Nutrition status of children	ND	ND	ND		ND	ND	ND	ND	
Normal				3,671					
Overweight				225					
Malnutrition of children below 7 yr. old			ND	ND					
number per 1,000									
3rd degree	27	204	6	12	5	5			
2nd degree	5	379		194	10	52			
1st degree	5	3		1,228	36	13			

ND - no available data

Table P.2-11. Frequency Distribution of Immunization of Children

Type of Immunization	CAR		Region II		Region VIII		Region X	
	Sappaac	Bangued, Abra	Cofcaville	Maddela, Quirino	Marangog	Bilongos, Leyte	Silac	Malaybalay, Bukidnon
BCG	17	842	X	X	X	875	81	2,733
DPT	14	864	X		X	805		
DPT 1				X			68	2,733
DPT 2				X			61	2,615
DPT 3				X			61	2,386
OPV	14	864	X		X	899		
OPV 1				X			64	2,469
OPV 2				X			60	2,309
OPV 3				X			66	2,383
Measles	14	864	X	X		755	66	2,403
Hepatitis B	15		X	X		710		
Tetanus toxoid								
Fully immunized	14	1,084					61	2,425

Note:

- ND - no data
- X - reported but not quantified
- DPT - Diphtheria, pertussis, a and tetanus vaccine
- BCG - tuberculosis vaccine
- OPV - oral polio vaccine

Table P.2-12. Five Common Causes of Morbidity among Children

Common Diseases	CAR		Region II		Region VIII		Region X	
	Sapaga	Bangued, Abra	Cofcaville	Maddela, Quirino	Marangog	Hilongos, Leyte	Silac	Malaybalay, Bukidnon
Diarrhea	X	X		X			X	31
Influenza			X		X	316	X	
Schistosomiasis							X	
Bronchitis			X	X			X	48
Pneumonia		X	X	X			X	27
Gastroenteritis	X	X			X	135		
Malaria						152		
Skin disease	X				X			
Amoebiasis								4
Parasitism				X				
Fever					X			
Cough with fever		X						
Cough with cold	X	X						
Systemic viral infection			X					
Upper respiratory track infection						1,232		14
Tuberculosis		X						
Measles			X		X			
Small pox			X					

Note:

X - reported but quantified

Table P.2-13 Five Most Common Causes of Morbidity
(number/10,000 population)

Common Diseases	CAR		Region II		Region VIII		Region X	
	Sappaac	Bangued, Abra	Cofcaville	Maddela, Quirino	Marangog	Hilongos, Leyte	Silac	Malaybalay, Bukidnon
Diarrhea			X			2,018	X	164
Influenza	X	X	X	X		1,858	X	50
Bronchitis			X	X		681	X	229
Schistosomiasis							X	229
Pneumonia				X		511	X	33
Malaria			X					
Tuberculosis	X	X						
Skin diseases	X				X			
Gastroenteritis	X	X		X	X			
Measles			X		X			
Dysentery								
Parasitism								
Upper respiratory track infection	X	X		X				
Hypertension								
Malnutrition								29
Cardio-vascular disease						323		
Muscle skeletal diseases					X			
Anemia								
Amoebiasis					X			

Note:

X - reported but not quantified

Table P.2-14 Average Annual Medical Expenses of the Household

Priority ARC	Annual Medical Expenditure	Percent of Annual Household expenses
Sappaac ARC, Bangued, Abra, CAR	788	4
Cofcaville ARC, Madella, Quirino, Reg. - II	2,585	7
Marangog ARC, Iilongos, Leyte Reg. - VIII	320	1
Silac, ARC, Malaybalay Bukidnon, Reg. - X	1,204	4

Table P.2-15 Leading Causes of Death among the Population and the Children

Major Causes of Death	CAR			Region II			Region VIII		Region X	
	Sapaoac	Bangued, Abra	Cofocaville	Maddela, Quirino	Marangog	Hilongos, Leyte	Sitac	Malaybalay, Bukidnon		
Adults (number per 10,000 population)			ND							
Unknown							X		4	
Cardiovascular disease				X		190				
Cancer				X						
Tuberculosis	X	X			X					
Myocardial infection	X	X								
Severe pneumonia	X	X		X						
Hypertension					X					
Old age					X					
Children 5 yr. old or younger										
Pre-maturity	X	X								
Severe pneumonia	X	X		X						
Cardio-respiratory disease					X	4				
Measles			X							
Congenital anomalies				X						
Bronchitis			X	X						
Diarrhea			X							
Septic neonatorium					X					
Unknown	X	X			X	4				

Table P.2-16 Family Planning Services offered to and accepted by the Areas

Family Planning Services Offered	CAR			Region II		Region VIII		Region X	
	Sappaac	Bangued, Abra	Cofcaville	Maddela, Quirino	Marangog	Hilongos, Leyte	Silac	Malaybalay, Bukidnon	
Pill	X	X	ND		ND	ND	740	453	
Condom	X	X					117	144	
IUD	X	X					311		
Ligation	X	X							
Vasectomy	X	X							
DMPA	X	X					156	212	
Sterilization	X	X							
Rhythm/Natural Method	X	X							
Accepted Method									
Pill	22	601	13	1,136	8	43	24	740	
Condom			1	17	15	48	4	117	
DEPO/DMPA	17	189	5	32		15		156	
IUD	4	38	1	345	4	83	2	311	
Tubal Ligation									
Rhythm/Natural Method	8	83			32	21			
Sterilization/Vasectomy	18	184							

Note:

X - practised but not quantified

ND - no data

Table P.2-17 Estimated Soil Erosion with Different Soil Conservation Measures

Slope (%)	Soil Conservation Method	Soil Erosion (ton/ha)	Reduction in Soil Erosion(%)
0 - 8	Contour cropping	6	50
8 - 18	Contour Hedgerows with 5 m alley	6	79 - 94
8 - 18	Contour Hedgerows with 10 m alley	8	72 - 93
8 - 18	Rock walling with 5 m alley	6	79 - 94
8 - 18	Rock walling with 10 m alley	8	72 - 93
8 - 30	Contour Hedgerow with 4 m alley	3	97
8 - 30	Rock walling with 4 m alley	3	97
30 - 40	Assisted natural Regeneration/Reforestation	2	98

Table P.2-18 Estimated Soil Erosion from Various Land Uses and Slopes of the Cofcaville ARC

Slope (%)	Upland Crops	Orchard (tons/ha)	Grassland
0 - 8	25	8	9
8-18	139		53
18 - 30	165		78
30 - 40			156

Table P-2-19 Coliform Test of the Sources of Drinking Water in the Cofcaville ARC

Owner of Artesian Well	Condition of the Artesian Well	Number of Red/Blue Spot on the Paper Strip	Water Quality
Marciano Declarador	120 ft deep; cemented flooring	1	Safe for drinking
Romeo Rerador	120 ft deep; cemented flooring	1	Safe for drinking
Eutiquio Fontanilla	180 ft deep;	1	Safe for drinking
Ali Guerrero	100 ft deep	2	Safe for drinking
Pablo Cabuncal	20 ft deep; water yield decrease in summer months; water flow stop after 30 minute of continuous pumping	Plenty of red spots	Not safe for drinking; boiling of water is necessary to be safe
Cofcaville Elementary School		more than 100 blue spots and difficult to count	Not safe for drinking; boiling of water for drinking is needed

Note :

Each blue or red spots on the test paper indicates one Coliform bacteria more than 100 blue/red spots on the test paper means the water is not recommended for drinking.

Table P.2-20 Estimated Soil Erosion with Different Soil Conservation Methods at Different Slopes in Cofeaville ARC

Slope (%)	Soil Conservation Method	Soil Erosion (ton/ha)	Reduction in Soil Reduction (%)
0-8	Contour Cropping	8	11 - 68
	Orchards, with native grass undercover or intercrop	4	53
8-18	Contour Hedgerows with 5m alley	8	85 - 94
	Contour Hedgerow with 10m alley	12	85 - 91
18 - 30	Contour Hedgerows with 4m alley	4	97
30 - 40	Forest with ring weeding	6	96

Table P.2-21 Estimated Soil Erosion of Various Land Uses at Different Slopes in the Marangog ARC

Slope (%)	Upland Annual Crops	Coconut with Intercrops (Ton/ha/year)	Overgrazed Cogonal with Shrubs
0-8	32	23	38
8-18	180	133	217
18-30	230	206	323
30-40		304	

Table P.2-22 Coliform Test of the Sources of Drinking Water in Marangog ARC

Sampling Location	Nature of the Source	Number of Red Spots on the Test Paper	Water Quality
Barangay Proper	Free flowing Level II	1-2 small spots	Coliform bacteria are present; water is safe but water source needs to be protected by animal and human waste pollution
Sitio Eba	Free flowing Level II	8-9 small spots; reddish	Water is safe but Coliform bacteria are present; source needs protection
Sitio Caimito	Artesian well with cemented flooring	20- 30 spot; about 60% of the test paper is reddish	Coliform bacteria are present; boiling of the water for drinking is recommended to avoid water borne diseases
Sitio Quintalian	Spring	none	water is safe but protection of the source from human and animal waste pollution is needed

Table P.2-23 Estimated Soil Erosion with Different Soil Conservation Measures at Different Slopes in Marangog ARC.

Slope (%)	Soil Conservation Measure	Estimated Soil Erosion (ton/ha./year)
0 - 8	Contour Cropping of annual upland crops	7
0 - 8	Coconut with intercrops	8
8 - 18	Contour Hedgerows with 5 m alley and annuals	9
8 - 18	Contour Hedgerows with 10 m alley and annuals	12
18 - 30	Contour Hedgerows with 4 m alley and annuals	4
	till canopy closed	
30 - 40	Forest Plantation/coconut with ring weeding	7

Table P.2-24 Estimated Soil Erosion from the Upland Crop Area and Grassland at Different Slopes in Silae ARC

(unit : ton/ha./year)

Slope (%)	Upland Crops	Grassland
0 - 8	26	17
8 - 18	149	100
18 - 30	222	148
30 - 40		296

Table P.2-25 Coliform Test of the Sources of the Drinking Water in the Silae ARC

Sampling Location of the Source of Drinking Water	Nature of the Source of Drinking Water	Number and Extent of Red Spot	Water Quality
Silae Proper	Level II from the spring	1-3 medium spots	Below the critical level but safe for drinking:
Dalacutan Proper	Level II from the spring	1 small spot	Safe for drinking but the source needs protection from animal and human waste pollution to prevent the build up of coliform bacteria
ARC Marginal Area	open shallow of about 1.5 m deep along the drainage canal of the source water for washing clothes; small can used to get water from the well.	30 large spots and covered entire test paper.	not recommended for drinking without water treatment: artesian well with at least 80 ft deep would be preferable.

Table P.2-26 Estimated Soil Loss at Different Slopes with Soil Conservation Measures in Silae ARC

Slope (%)	Soil Conservation Measure	Soil Erosion (ton./ha./year)	Reduction on Soil Erosion (%)
0 - 8	Contour Cropping	7	75
8 - 18	Contour hedgerows with flanking and 5m alley	6	94-96
8 - 18	Contour hedgerows with Flemingia and 10 m alley	8	94-96
30 - 40	Reforestation with underbrushing	4	99

**ANNEX Q. RELATE STUDIES AND PROJECTS FOR DEVELOPMENT
OF ARC**

Q.1 Related Development Plans and Assistant Agencies

The following related projects and studies on the ARCs under the DAR have been undertaken with the assistance of different government agencies concerned.

- Technical Assistance to Cooperative Development in Agrarian Reform Communities (Technical Assistance), OECF Special Yen Credit
- Agrarian Reform Support Project (Capital Assistance), European Communities
- Agrarian Reform Infrastructure Support Project (ARISP) (Capital Assistance), OECF Yen Credit Package
- Belgian Agrarian Reform Support Project (Capital Assistance), Belgium
- Development of Agrarian Reform Communities in Marginal Areas (Technical Assistance), JICA
- Database Support to CARP (Grant Aid), JICA
- Support Activities to Indigenous Group in ARCs (Technical Assistance), FAO
- Australian Technology Support Program to ARCs (Capital Assistance), Australia
- Agrarian Reform Community Development Project (Capital Assistance), WB/IFAD/CIDA and Australian Aid
- Integrating Population-Related Concerns on Training and Extension System of the Department of Agrarian Reform (Technical Assistance), FAO-UNFPA
- Dutch Rural Development Assistance Program (Financial Assistance), Netherlands
- Land Reform Support Project (Nucleus Estate Outgrower Development Project) (Technical Assistance), World Bank-Managed Japanese Project Preparation
- Natural Resources Management and Development Projects (Technical Assistance), Australian International Development Assistance Bureau.
- Joint DAR-DENR Reforestation Project (Technical Assistance), ADB-OECF

Detailed descriptions of these related studies and projects are given in hereinafter.

Name of Project : Technical Assistance to Cooperative Development
in Agrarian Reform Communities

Project Type : Technical Assistance

Funding Country : Japan (OECF Special Yen Credit Package)

Project Implementation
Period : July 1997 - February 2001

Project Components :

1. Capability Building (upgrading of the capabilities of the cooperative leaders and management staff in cooperative management, financial management, internal control, savings mobilization, credit management and marketing to make them viable organizations and transform them into bankable cooperatives.
2. Enterprise Development and Alliance Building (networking with other cooperatives, private entrepreneurs, government and NGOs will likewise be established to expand the services and business activities of the cooperatives)

Implementing
Agencies : Department of Agrarian Reform
Land Bank of the Philippines

Project Sites : 96 ARCs in 34 provinces nationwide

Description of Project:

The project aims to develop agrarian reform farmers organization in ARISP Sites into LBP-bankable and viable cooperatives by the year 2000.

Name of Project : Agrarian Reform Support Project

Project Type : Capital Assistance

Funding Country : European Community

Project Implementation
Period : 1995 - 2000

Project Components :

1. Land Tenure Improvement - the project will accelerate the land transfer of about 420,000 hectares of public and private agricultural lands.
2. Institutional Strengthening - will involve the establishment and strengthening of farmers groups and cooperatives as well as strengthening the capabilities all actors involved in the agrarian reform program.
3. Productivity System Development - this will involve the construction or rehabilitation of small-scale rural infrastructure.
4. Project Administration - provide the necessary facilities for the operation of the Project Office and overall project planning, operation and management.

Implementing
Agencies : Department of Agrarian Reform
Department of Public Works and Highways
National Irrigation Administration

Project Sites : 44 selected ARCs in Regions V, VI, and X

Description of Project:

The project is an integrated area development type of project that will focus on agrarian reform communities. It will involve land tenure improvement and beneficiaries development through institutional strengthening and the provision of support services such as production credit, basic infrastructure. The project will involve agrarian reform partners, the government, the non-government organizations and people's organizations.

Name of Project : Agrarian Reform Infrastructure Support Project

Name of Project : Agrarian Reform Infrastructure Support Project

Project Type : Capital Assistance

Funding Country : Japan (OECD 20th Yen Credit Package)

Project Implementation
Period : 1995 - 2000

Project Components :

- development of 96 communal irrigation projects and systems covering an irrigable area of 18,313 hectares.
- construction of about 174 kilometers of new roads and the rehabilitation/improvement of 384 kilometers of existing roads.
- provision of post-harvest facilities such as warehouses and solar dryers or multi-purpose pavements
- institutional development - involves community organizing, capability building and strengthening of Irrigators Associations and farmers cooperatives in the operation and maintenance of irrigation, post-harvest facilities and other agri-based enterprise.

Implementing
Agencies : Department of Agrarian Reform
Department of Public Works and Highways
National Irrigation Administration
Department of Agriculture

Project Sites : 96 ARCs nationwide

Description of Project:

The project was conceptualized to implement the support services component of the CARP to ensure that lands distributed to the farmers become highly productive and efficient through the provision of basic infrastructures and facilities required by the agricultural sector.

Name of Project : Belgian Agrarian Reform Support Project

Project Type : Capital and Technical Assistance

Funding Country : Belgium

Project Implementation
Period : 1994 - 1998

Project Components :

1. Land Tenure Improvement - the project will accelerate the land transfer of about 16,000 hectares of agricultural lands and the granting of individual land titles and leases to farmers.
2. Social Infrastructure Building and Strengthening - support to 10 of government's development facilitators and to community organizers to ensure that ARBs are well-organized and informed.
3. Productivity System Development - this will involve the construction of some minor farm infrastructure, will enhance existing farm credit facilities, foster appropriate technology in production and post-harvest processing and provide marketing assistance.
4. Project Administration - provide the necessary facilities for the operation of the Project Office and overall project planning, operation and management.

Implementing
Agencies : Department of Agrarian Reform

Project Sites : 11 selected ARCs in Negros Oriental, Bohol and Cebu

Description of Project:

The project aims to alleviate rural poverty and agricultural stagnation in ARCs.

Name of Project : Development of Agrarian Reform Communities in Marginal Lands

Project Type : Technical Assistance

Funding Country : Japan (JICA)

Project Implementation
Period : 1 year (1996)

Project Components :

1. Phase I: Identification of ARCs in marginal lands and collection of general profiles of the areas; classification of identified ARCs based on soil type, scope and other physical and socio-economic features.
2. Phase II: Data collection and analysis on selected model areas; conduct of feasibility study on model areas; and formulation of a model development scheme which would be replicated on a nationwide basis.

Implementing
Agencies : Department of Agrarian Reform

Project Sites : Marginal Areas in selected ARCs nationwide

Description of Project:

The project involves the conduct of a feasibility study to formulate an area development plan for ARCs in marginal areas which is economical, environment-friendly and could be replicated nationwide. The ultimate objective of the project is to improve the quality of life of the CARP beneficiaries through provision of alternative sources of income and necessary support services to make the farmers in marginal areas self-reliant. Possible interventions initially identified includes infrastructure, agricultural and institutional development and introduction of micro ponds for aquaculture.

Name of Project : Integrated Database Support to CARP
Project Type : Grant-Aid
Funding Country : Government of Japan thru JICA
Project Implementation
Period : March 1996-1997

Project Description and Components:

The Integrated Database Support to CARP Project aims to establish a management information system that will integrate all the information needed for more effective and efficient implementation of the CARP. This is to provide computer hardware, software and other relevant equipment necessary for the implementation of the project to be able to strengthen the computerized database, and management capabilities especially at the regional and provincial levels and to establish remote data communication between and among DAR Offices.

The project consists of the following components:

- Provision of computer hardwares, software and other relevant equipment;
- Dispatch of foreign experts on information system and database management;
- Trainings of technical staff (Local and Foreign)

The benefits expected from the project are:

- Improvement of the capability for faster data processing among DAR operating units;
- Improvement on the land records management and retrieval of information;
- Upgrading of technical capability of DAR personnel on information technology;
- More efficient coordination and implementation of the program; and
- Provision of the state-of-the-art equipment in databasemanagement.

Name of Project : Support Activities to Indigenous Groups in ARCs

Project Type : Technical Assistance

Funding Country : Food and Agriculture Organization

Project Implementation
Period : June 1995 - April 1996

Project Components :

- Improvement of LTI status
- Formulation of development plans corresponding to the specific needs of the indigenous ARCs in line with national land policy objectives and of investment proposals suitable for external funding.

Implementing
Agencies : Department of Agrarian Reform
Department of Environment and Natural Resources

Project Sites : Selected ARCs in Abra, Benguet and Mountain
Province

Description of Project:

The project aims to undertake a diagnosis that would guide and strengthen the Joint DAR/DENR Project Management Group and other CARP Implementing Agencies in supporting local institutional structures; in promoting employment and income generation by strengthening tenurial security; in promoting agricultural productivity and sustainable management of natural resources; and in formulating projects and proposals for further assistance that would improve the quality of life within rural communities.

Name of Project : Australian Technology Support Program to ARCs

Project Type : Capital Assistance

Funding Country : Australia

Project Implementation
Period : Three years

Project Components :

- The project consists of the of the design, manufacture, supply, installation, commissioning, training and technology transfer, maintenance, community education, administrative strengthening and promotion within the government.

Implementing
Agencies : Department of Agrarian Reform

Project Sites : 45 unenergized ARCs in 126 barangays nationwide

Project Description :

The project will provide packaged systems using photovoltaic technology to meet the basic energy requirements for water supply, household lighting, irrigation systems, small post-harvest and processing facilities on a pilot scale to help ARCs move towards a sustainable and economically viable enterprise.

Name of Project : Agrarian Reform Community Development Project

Project Type : Capital Assistance

Funding Country : World Bank/IFAD/CIDA and AusAID

Project Implementation Period : Six (6) years

Project Components :

1. **Community Development** - to enable ARCs to develop their organizations and capabilities to plan and manage human, physical and financial resources to achieve objectives determined by the community.
2. **Infrastructure Investment Support** - strategic infrastructure that is most cost-effective in increasing the accessibility of ARCs and livelihood of the beneficiaries.
3. **Agricultural and Livelihood Development** - entails the provision of farm production support and income-generating activities to farmer-beneficiaries.
4. **Institutional Support** - focuses on capability and capacity building of CARP related institutions to make them more effective in performing their work.

Implementing Agencies : Department of Agrarian Reform

Project Sites : 100 ARCs nationwide

Description of Project:

The project is designed to assist in empowering farmer organizations in ARCs to plan and undertake activities to raise farmers' income above the national poverty level and provide opportunities for sustainable growth.

Name of Project : Integrating Population-Related Concerns in the Training & Extension System of the DAR

Project Type : Technical Assistance

Funding Source : FAO-UNFPA

Project Implementation:

Period : July 01, 1991-June 30, 1993

Project Components :

- Development of conceptual framework for the integration of population concerns in the existing training and extension system of the DAR;
- Conduct of baseline survey and identification of project beneficiaries;
- Development of integrated population training module;
- Conduct of national orientation/planning workshops for DAR officials and personnel at the central and field levels;
- Training of agrarian reform families at the barangay level and development of IECM materials for them to acquire, improve awareness and knowledge, attitudes and practices in relation to promoting "small family norm"; and
- Project monitoring and evaluation.

Implementing Agencies:

Department of Agrarian Reform-Bureau of Agrarian Reform
Beneficiaries Development

Project Sites : DAR Settlement Areas in Region III, VII and XI

Project Description :

The project aimed to contribute the achievement of the CARP goals of improving the quality of life of CARP beneficiaries through increased awareness and knowledge, attitude and practice among agrarian reform beneficiaries in relation to promoting the "small family norm".

The project involved pilot-testing and methodological approach to enable DAR to integrate population concerns into the training and extension systems of the Department through the Bureau of Agrarian Reform Beneficiaries Development

(BARBD). The approach was tested in selected barangays in DAR settlement areas in Regions III, VII and XI.

The project was closely coordinated with the Department of Environment and Natural Resources (DENR) and Department of Agriculture (DA) in the design and development of integrated training and extension program in which population concerns were integrated.

Name of Project : Dutch Rural Development Assistance Programme (DRDAP)

Project Type : Financial Assistance

Funding Country : Government of Netherlands

Project Implementation Period : 1987-1991

Project Components :

The DRDAP provided financial assistance the following types of projects:

1. Production/Marketing Support

Assistance in the development and implementation of effective and sustainable economic services for and by the farmers, including the development of effective and sustainable mechanisms to improve the accessibility to credit facilities.

2. Institution/Human Resources Development

Supported the development of organizational schemes and provision of training and technical assistance.

3. Policy Studies on Rural Development

This was towards the improvement/development of the rural sector.

4. Community Services

The projects included were aimed at improving the level and quality of community services.

5. Environmental Protection

The projects were aimed at maintaining the ecological balance of the country.

Implementing Agencies: Department of Agrarian Reform
Department of Agriculture
Department of Environment & Natural Resources
Department of Trade & Industry
Non-government Organizations and
Peoples Organization

Project Sites : Nationwide

Project Description :

DRDAP has provided financial assistance to projects geared towards rural development especially for the benefit of disadvantaged groups such as rural women, landless workers, cultural communities, tribal migrant dwellers and others belonging to the low income group. The program has operated on the following basic requirements or criteria for projects to be eligible for funding support, namely: (a) it must utilized local structures such as NGOs, POs, and other organizations in the project management and implementation; (b) it should promote community based participation in project planning and implementation which can satisfy a demonstrated need of the beneficiaries; (c) it must show potential for continuation/sustainability and expansion of project activities after termination of assistance; (d) the proponents must express willingness to provide project equity; (e) the implementing agency must have in place an effective management structure, staff and procedures which can efficiently utilize resources to achieve project and technically feasible; and(g) the project must be small to medium scale, labor intensive and financially beneficial to the target group.

Name of Project : Land reform Support Project
(Nucleus Estate-Outgrowers Development Project)
Feasibility Study

Project Type : Technical Assistance (Feasibility Study)

Funding Country : World Bank-Managed Japanese Project Preparation
Grant

Project Implementation
Period : Six Months(1991-1992)

Project Components :

The project was a feasibility study was carried out into phases, namely:

Phase I was an inventory and analysis of the existing information as the basis for developing specific project proposals. This phase was focused on the following aspects: (1) review and screening of voluntary offer to sell (VOS) properties and other potential nucleus; and (2) outgrowers baseline data.

Phase II was a project proposal preparation on the following aspects: (1) agricultural development; (2) public investment ; (3) credit; (4) management systems; (5) environmental impact; (6) project implementation and investment schedules; and (7) project benefits and justification.

Implementing Agencies: Department of Agrarian Reform

Project Description :

The project was purposely to prepare and evaluate a five-year pilot development project for agrarian reform beneficiaries of former tree crop plantations and outgrowers for possible bank financing, and to develop a prevailing crop adaptive research and extension program.

It was carried out into two (2) phases: Phase I and Phase II. The project was implemented in two (2) sites, namely UP-NDC Rubber Plantation in Basilan and Lacaron Estate in Davao del Sur.

Name of Project : Natural Resources Management and Development Project (NRMDP)

Project Type : Technical Assistance

Funding Country : Australian International Development Assistance Bureau (AIDAB)

Project Implementation Period : 1989-1993

Project Description and Components :

The NRMDP was a four-year project which started in 1989 and aimed to contribute to economic and social development by identifying more effective approaches to natural resources management and land administration.

The project had five (5) technical components, namely:

- **Strategic Planning and Management** strengthened the DENR's capability to effectively plan, manage, implement and evaluate programs and projects intended to both conserve natural resources and protect the environment and through that, improve people's livelihood opportunities.
- **Resources Management** illustrated the effective use of geographical information systems, satellite imagery and remote sensing in the precise identification of resources.
- **Geodetic Survey** involved surveying and mapping of natural resources and administrative and cadastral boundaries.
- **Land Administration** focused on solving problems associated with lost and incomplete cadastral survey records and delays in the issuance of land titles.
- **Land Laws** involved the examination of the legal foundation for land ownership and major land tenure issues in both the public and private domain in order to simplify and rationalize the titling and tenure system in the country.

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R.3 Government and Local Staff Interviewed by Study Team (Phase-II)

R.1 Government and Related Officials Interviewed By Study Team

1. Philippines Government Agencies in Manila

a). National Economic and Development Authority (NEDA)

- | | |
|-----------------------------|---|
| 1. Ms. Aley Bernardo | Chief, Asia-Pacific Division, Public Investment Staff, NEDA |
| 2. Ms. Cristina C. Santiago | Public Investment Staff/Japan Desk Officer, NEDA |
| 3. Mr. Edgar F. Zotomayor | Agricultural Staff, NEDA |
| 4. Ms. Shella Marie Encabo | Agricultural Staff, NEDA |

b) Department of Agrarian Reform (DAR)

- | | |
|---------------------------------|--|
| 1. Mr. Ernesto D. Garilao | Secretary, Department of Agrarian Reform |
| 2. Mr. Jaime Aristotle B. Alip | Assitant Secretary, DAR |
| 3. Mr. Jose Mari B. Ponce | Director, Project Development and Management Staff(PDMS), DAR |
| 4. Ms. Amelia M. Cosca | Chief, Project Development and Resource Mobilization Division, DAR |
| 5. Ms. Celerina G. Afable | Chief, Project Implementation and Management Division, PDMS, DAR |
| 6. Ms. Jean M. Fornoles | Project Development Officer IV, PDMS, DAR |
| 7. Ms. Irma T. Canlas | Senior Agrarian Reform Program Officer, PDMS, DAR |
| 8. Mr. Roman Oida Jr. | Project Development Officers, III, PDMS, DAR |
| 9. Ms. Susan Evangelista Leones | Director IV, BARBD |
| 10. Mr. Tomas Cabuenos | Director III, BARBD |
| 11. Mr. Jose A. Soliva | SUARPO, BARBD |
| 12. Ms. Julieta C. Silva | Project Development Officer, PDMS, DAR |
| 13. Ms. Rancelisa Samiano | Project Development Officer II, PDMS |
| 14. Ms. Fatima Canares | MARO |
| 15. Mr. Mikiya Inamori | JICA Expert |
| 16. Mr. Masashi Yagi | JICA Expert |
| 17. Mr. Ichiro Noda | JICA Expert |

c) Department of Agriculture (DA)

- | | |
|---------------------------|---|
| 1. Ms. Cecille Q. Astilla | Project Development Officer IV, International Agricultural Development Cooperation Coordination Office (IADCCO) |
| 2. Mr. Rolando V. Labios | Chief Agriculturist, Bureau of Agricultural Research |
| 3. Mr. Libertado C. Cruz | Executive Director, Philippines Carabao Center |
| 4. Mr. Roland V. Kintana | Senior Agriculturist, Bureau of Agricultural Research |

- | | |
|---|---|
| 5. Ms. Rustica S. Bautista | Chief Agriculturist, Crop Production Division,
Bureau of Plant Industry |
| 6. Mr. Alejandro G. Micoso | Chief, Soil Survey Division, Bureau of Soils and
Water Management |
| 7. Mr. Emil M. Sibolboro | Senior Agriculturist/Land Evaluation Specialist,
Agricultural Land Management Evaluation
Division, Bureau of Soils and Water Management |
| 8. Mr. Hernando V. Venturiana | Supervising Science Research Specialist, PCC at
CLSU |
| 9. Dr. Victor C. Atienza, DVM | Chief, Veterinary Quarantine & Inspection
Service Section, BAI |
| 10. Dr. Samuel B. Animas, DVM | Animal health Officer, Animal Health Division,
BAI |
| 11. Mr. Martiniano F. Dela Cruz | Chief, Livestock Development division and
Special Executive Assistant to the Office of
Director, BAI |
| 12. Mr. Yoshimi Shimokata | JICA Expert |
| 13. Mr. Tamaki Yasuda | JICA Expert |
| 14. Mr. Toshiaki Ookura | JICA Expert |
| 15. Mr. Hiroshi Nishimura | JICA Expert |
| 16. Mr. Toshio Itoh | JICA Expert |
| 17. Mr. Teruhisa Matumoto | JICA Expert |
| 18. Mr. Tatushi Togashi | JICA Expert |
| 19. Mr. Naoki Iguchi | JICA Expert |
| 20. Ms. Patricia May P. Gonzalez | Secretary, Planning & Programming Division |
| d) National Irrigation Administration (NIA) | |
| 1. Mr. Rogelio H. Rotoni | Project Manager, CARP-Irrigation Component
(ICP) |
| 2. Mr. Conrado A. Ocaño | Project Manager, Small Reservoir Irrigation
Project |
| 3. Mr. Eduardo B. Aldava | Division Manager, Diversified Crops
Irrigation Engineering Project Phase II |
| 4. Mr. Rodrigo N. De Guzman | Project Manager, Communal Irrigation
Development Department |
| 5. Mr. Alan S. Bayanes | Senior Engineer, Benguet Provincial Irrigation
Office |
| 6. Mr. Tatuo Hokari | JICA Expert |
| 7. Mr. Tokuchi Tujii | JICA Expert |
| 8. Mr. Jyunji Takahashi | JICA Expert |
| e) Department of Public Works and Highway (DPWH) | |
| 1. Mr. Jose C. Guanzon | Project Director, CLB-CARP Program Office |
| 2. Mr. Philip T. Menez | Project Director, Small Water Impounding
Management |

3. Ms. Helen G. Marvilla Assistant Project Director, PMO-Rural Water Supply Office
 4. Mr. Ricardo N. Bamero Jr. Planning Officer, Project Management Officer
 5. Mr. Rony Lescano Economist, PMO-Feasibility Study, DPWH
 6. Mr. Motokazu Suzuki JICA Expert
- f) Bureau of Soils and Water Management (BSWM)
1. Mr. Rodolfo M. Lucas Chief, Water Resources Management Division, BSWM
 2. Mr. Oscar O. Carpio OIC, Design and Engineering Section, Water Resources Management Division, BSWM
- g) Department of Environment and Natural Resources (DENR)
1. Mr. Rafael E. Camat Jr. Director, Foreign Assisted and Special Project Office
 2. Mr. Michael Patrick L. Padeo Head, DENR-CARP National Secretariat
 3. Mr. Shinji Tanabe JICA Expert
- h) Land Registration Authority (LRA)
1. Mr. Emmanuel N. Paralisan Program Director, LRA
- i) Land Bank of the Philippines (LBP)
1. Mr. Donato C. Nedencia Vice-President, Cooperative Development Assistance
- j) Department of Trade and Industry (DTI)
1. Mr. Manuel D. Abad Program Manager, CARP-National Program Office
- k) Bureau of Agricultural Statistics (BAS)
1. Ms. Aurora D. Abaya Head, Agricultural Statistics and Information Section
 2. Mr. Celestino C. Olalo Chief, Crop, Livestock, Poultry & Fisheries Division
 3. Mr. Mar Rondon Head, Crop Statistic Section
 4. Ms. Patchie V. Tepora Crop Statistic Section
 5. Ms. Natel Millendez Secretary, Agricultural Marketing Statistics Analysis Division
 6. Ms. Susan A. Mia Head, Price Statistics Analysis Section
- l) Philippines Atmospheric, Geophysical and Astronomical Services (PAGASA)
1. Dr. Roman L. Kintanar Chairman, Science and Technical Committee, PAGASA
 2. Mr. Vicente C. Manalo Weather Specialist, PAGASA
 3. Mr. Toshio Okazumi JICA Expert

m) Agricultural Machinery Manufacturers Distribution Associations (AMMDA)

1. Mr. Virgilio G. Lorenzo Chief

n) University and Others

1. Dr. Fereso A. Abello Director, Freshwater Aquaculture Center,
Central Luzon State University
2. Dr. Camilo C. Laranang Vice-President, Research, extension and Training,
Tarlac College of Agriculture
3. Dr. Helmar E. Aguilar President, Aklan State College of Agriculture
4. Dr. Warlito Laquihon Planning and Development Coordination for
Mindanao Baptist, Rural Life and Asian Rural
Life Development Foundation, Bansalan, Davao
del Sur
5. Mr. Roy S. Consolacion Area Manager, Area Management Section, PMS,
OPP (Philippine Human Resources Development
Center, Davao Samal Island)

2. Non-Government Organizations (NGO)

1. Mr. Magistrado A. Mendoza, Jr. Leagao Officer, Department, KAISAHAN
2. Mr. Teodorico B. Pena Unit Head, KAISAHAN
3. Ms. Cecilia Ochoa Head, Communication Department, Philippines
Peasant

3. Embassy of Japan

1. Mr. Katuhiko Yamauchi First Secretary, EOJ
2. Mr. Norihiko Yoda First Secretary, EOJ

4. JICA Philippines Office

1. Mr. Akihiko Hashimoto Resident Representative
2. Mr. Juro Chikaraishi Deputy Resident Representative
3. Mr. Masashi Shukunobe Resident Representative
4. Mr. Yukihiko Ejiri Assistant Resident Representative
5. Mr. Akira Nakamura Assistant Resident Representative
6. Miss Reselie U. Enriquez Staff, Second Project Management Section

R.2 Government and Local Staff Interviewed by Study Team (Phase-I)

Region	Name			Designation
CAR	Atty. Macrino Elvena	DAR	Provincial Office Bangued, Abra	Provincial Agrarian Reform Officer II
	Mr. Loduvico Ciubal			Provincial Agrarian Reform Officer I
	Mr. Rogelio Balla			Chief, Agrarian Reform Program Officer (Beneficiaries Development Coordination Div.)
	Engr. Noli Bayugo			Senior Agrarian Reform Program Officer (Beneficiaries Development Coordination Div.)
	Mrs. Hilarina Bersamira		Municipal Office	Municipal Agrarian Reform Officer, Bangued
	Mrs. Marietta Briosis			Development Facilitator
	Mr. Santiago Oca		Barangay	Barangay Captain, Sappaac Bangued, Abra
	Mrs. Teresita Bringas			DARPT, Bangued, MARO
Region I	Mr. Angelito Castillo	DAR	Regional Office	Assistant Regional Director
	Mr. Valeriano H. Laya			OIC-PARO II, La Union
	Mr. Milton Pascua			Provincial Agrarian Reform Officer I
	Ms. Maria GERALYN Zarate		San Fernando, La Union	Chief, Beneficiaries Development and Coordination Division (BDGD)
	Ms. Orendia Macusi			Agrarian Reform Program Officer II
	Ms. Flavia Ramirez			OIC-SUARPO
	Mr. Larry Gascon			Executive Assistant (ARDO)
	Ms. Corazon Dacquep			Development Facilitator of Talogtog ARC
	Mr. Ruben Valero, Jr.			Mayor, San Juan, La Union
Region II	Mr. Nestor L. Jimenez	DAR	Provincial Office Cabarroguis, Quirino	Provincial Agrarian Reform Officer II
	Mr. Roberto P. Argonia			Provincial Agrarian Reform Officer I
	Mr. Felix R. Alvarez			Chief, Agrarian Reform Officer (CARPO)
	Mr. Rizal A. Salvador			MARO - Aglipay
	Mr. Edgardo Olivar			Provincial ARC Coordinator
	Dr. Pedro Molina DVM			Provincial Agriculturist
	Ms. Emer Collado			SARPO
	Ms. Frelita P. Ordonez			DAR Provincial Office
	Mr. Mario D. Ramiscal		Madella, Quirino	ARPT
	Mr. Victor E. Quibuyen			Clerk III/Acctg. ARPT
	Ms. Josie Castillo-Co			Provincial Governor
	Mr. Bonifacio Cristobal			Provincial Vice Governor
	Mr. Agaton "Jun" Pagbilao			Private Secretary II
	Mr. Lito Salatan			Executive Assistant III
	Mr. Homer Bueno			
	Mr. Gerry Miguel			
	Mr. Artemio Santiago			
	Ms. Perla Alay			
	Ms. May Calaunan			
	Mr. Joselito Sulio			
	Ms. Mercy Pagbilao			
	Mr. Geronimo Bautista			
	Mr. Marcial Malto			
	Mr. Renato Ylanan		Municipal Office	Municipal Mayor
	Mr. Mariano B. Gadingan, Jr.		Madella, Quirino	Municipal Vice Mayor
	Mr. Efraim M. Fernandez			Municipal Agriculturist
	Mr. Arnulfo B. Ramel			Municipal Planning and Dev't. Coordinator
	Ms. Flordelina A. Blanco			Sanggunian Bayan (Councilor)

Region	Name			Designation
	Mr. Johnny Lumidao			Sanggunian Bayan (Councilor)
	Mr. Ricarte C. Tolentino			-do-
	Mr. Randy G. Mateo			-do-
	Mr. Romeo A. Ereso			-do-
	Mr. Alipio G. Baingan			-do-
	Mr. Felix Ramos			-do-
	Mr. Pedro Ramel			-do-
	Mr. Danilo P. Ville		Barangay	Barangay Captain and ABC President
	Mr. Edwin S. Besas			Sangguniang Kabataan (SK) Chairman and SK Federation President
Region III	Mr. Raynor L. Taroy	DAR	Provincial Office	Provincial Agrarian Reform Support Services Officer (PARSSO)
	Mr. Delfin S. Bangis		Dinalupihan, Bataan	CARPO BDCD
	Mr. Edilberto M. Adraneda			SUARPO
Region IV	Mr. Durante L. Ubeda	DAR	Provincial Office	Provincial Agrarian Reform Officer II
	Mr. Alejandro Cruz		Gumaca, Quezon	Provincial Agrarian Reform Officer I
	Ms. Elizabeth Villapando			Chief, Agrarian Reform Programme Officer, (Beneficiary Development Coordination Div.)
	Mr. Joven Ferrera			MARO
	Mr. Ernesto Ogayon			SARPO-DAR-Quezon II
	Mr. Samuel Hernandez			Engineer II (Agricultural Engineer)
	Ms. Virginia Azagra			DF-ARC Maulawin
	Mr. Eric N. Entienza			Municipal Councilor
	Mr. Maximino Figueroa			Barangay Captain of Maulawin, Sta Elena
	Ms. Remedios Serrano			Barangay Councilor
	Ms. Adela Cabangon			Barangay Secretary & Treasurer of ADAM
	Ms. Emma Pera			Vice Chairman - ADAM-MPCI
				Anak Dalita Multi-purpose Coop. (ADAM)
Region V	Mr. Huberto Villaraza	DAR	Provincial Office	Provincial Agrarian Reform Officer
	Ms. Vicenta Gapas		Tinambac, Camarines Sur	Chief Agrarian Reform Program Officer, Support Services Office (SSO)
	Ms. Helen Perez			Researcher, DAR-SSO
	Mr. David V. Del Socorro			MARO, Tinambac North
	Mr. Jose C. Reyes			Municipal Mayor, Tinambac
	Mr. William S. Medina			Municipal Vice Mayor, Tinambac
	Mr. Benedicto D. Besa			Sangguniang Bayan Secretary, Tinambac
	Mr. Ed Jaucian			Support Services Office
	Mr. Rodel Martinez			Engr. II, Support Services Office
	Mr. Anselmo Gin Jr.			DF, Pag-asa ARC
	Mr. Ernesto T. Ramos	DPWH	Santa Cruz, Camarines Sur	Engineer III
	Mr. Jorge B. Obordo	NIA	Central Office	Asst. Administrator for Project Development and Implementation
	Mr. Bertueto L. de Lima	NIA	Provincial Office	Provincial Irrigation Officer III, Camarines Sur
	Mr. Conrado A. Ocado			Water Resources Impounding Project

Region	Name			Designation
Region VI	Mr. Daniel Y. Martelino	DAR	Provincial Office	Provincial Agrarian Reform Officer
	Mr. Dioscoro O. Masigon		Aklan	Provincial Agrarian Reform Support Service Officer (PARSSO)
	Ms. Anita M. Cabardo			Senior Agrarian Reform Officer
	Mr. Ronilo N. Ropa			Chief Agrarian Reform Program Officer
	Mr. Numeriano M. Cordova, Jr.			Chief Agrarian Reform Program Officer
	Mr. Renato I. Rasco			Chief Agrarian Reform Program Officer
	Mr. Federico M. Cabardo			Municipal Agrarian Reform Officer
	Ms. Cynthia T. Candelario		Altavas, Aklan	ARTech / DF-MARO
	Ms. Warlinda S. Castuciano			SARPT-MARO
	Mr. Jerome S. Refol			Asst. Stat. - MARO
	Ms. Maria May P. Refol			Mayor, Altavas
	Mr. Harvey Y. Reloj		Kalibo, Aklan	ARTech - MARO
	Mr. Rodolfo S. Pollentes	DPWH		District Engineer, office of the District Engineer
	Mr. Renato R. Bautista			Provincial Planning and Development Coordinator
	Mr. Victory M. Fernandez			Provincial Engineer, Aklan
	Mr. Rogen D. Reyes			Chief Engineer, AKELCO, Aklan
	Dr. Helmar E. Acilar Asca			President, Aklan State College of Agriculture
	Mr. Rolando V. Labios	DA-BAR	Quezon	Chief Agriculturist
Region VII	Mr. Jose Lames	DAR	Regional Office	Regional Director
	Mr. Jesus Kabristante			Asst. Regional Director
	Mr. Antonio A. del Socorro			CARPO-PDID
	Ms. Edith Fernandez			Program Officer
	Mr. Isidro A. Lamdagan		Provincial Office	OIC, PARO II
	Ms. Emilia M. Bulilan			ARPO II
	Mr. Eddie B. Manginsay			CARPO-BDCD
	Ms. Zadel Isadora S. Mumar		Trinidad, Bohol	MARO-DARMO
	Mr. Adelo C. Caina			ARPT-DF, DARMO
	Mr. Filadelfo A. Garcia			Municipal Mayor
	Mr. Rogelio Mercado			Engineer II
	Ms. Antonieta A. Ramos			Assistant Statistician, DARMO
	Mr. Rodrigo Geronio			Farm Supt. I, Animal Production Section
	Mr. Joel A. Elumba			Superintendent, Ubay Stock Farm
	Mr. Naoki Iguchi			JICA Expert, Bohol Agricultural Promotion Ctr.
	Ms. Estela Tumbocon			Agriculturist I, Diagnostic Laboratory
	Mr. Marianito Doydora			Agriculturist II, Animal Feed Development
	Mr. Reynaldo S. Arnoco			Agriculturist II, Philippine Carabao Center at Ubay Stock Farm
	Mr. Oswaldo B. Godinez			Agriculturist II, PCC, Ubay Stock Farm
Region VIII	Mr. Oscar Relo		Regional Office	Provincial Agrarian Reform Officer
	Mr. Silverio G. Gempeson			CARPO, Project Development Implementation (PDI), Support Service Office (SSO)
	Ms. Paulina Canales			SUARPO, PDI, SSO
	Mr. Larry Villacorte			ARPO II, PDI, SSO
	Mr. Celestino Y. Canales		Palo, Leyte	Provincial Agrarian Reform Officer, SSO
	Mr. Marciano L. Costiniano			CARPO, BDCD - Leyte
	Ms. Alma V. Peñero			ARPO II, BDCD - Leyte
	Mr. Erico B. Penetrado		Municipal Office	Municipal Agrarian Reform Officer (MARO)
	Ms. Maria Elena Alias		Hilongos, Leyte	DAR Development Facilitator
	Dr. Altagracia M. Villafior			Mayor of Hilongos, Leyte

Region	Name			Designation
Region X	Mr. Rogelio E. Tamin	DAR	Regional Office	Regional Director - 10
	Ms. Mabel Loyola		Regional Office	Project Development and Management Division
	Mr. Norberto Amora	DAR	Provincial Office	Provincial Agrarian Reform Officer (PARO)
	Mr. Vicente Tan		Bukidnon	SARPT
	Engr. Relani L. Ludeña			MARO, Malaybalay
	Ms. Prima Oro			ARPT/DF, Malaybalay
	Mr. Manuel Bensoy			Silae Barangay Captain
	Ms. Lota C. Gamboa	DWPH		Assistant District Engineer District-1, Malaybalay
	Mr. Leonardo Landasan			Farmer, Silae
Region XI	Mr. Aldo O. Pecson	DAR	Regional Office	Program Officer II
	Ms. Beatriz Alconera		Tagum	Program Officer II
	Mr. Clouis Ike J. Payumo			Chief AR Officer
	Mr. Nicasio Clemente			PARSO
	Mr. Saturnino Sibbaluca			PARO
	Mr. Orlando Macahilig		Asuncion	MARO
	Mr. Wofairlu Acosta			DF/MARO
	Mr. Tomas R. Abelita, Jr.			Mayor of Asuncion
	Mr. Proceso Arangas			Kipalili Barangay Captain
Region XIII	Mr. Romeo Pepe C. Ladao	DAR	Provincial Office	Provincial Agrarian Reform Officer
	Mr. Alex M. Macapagal		Surigao City	SARPO-Project Development Implementation (PDI)
	Mr. Elesio O. Abaniel			SARPT/DF
	Mr. Alfredo E. Alvarez			ARPO II, Provincial ARC Coordinator
	Ms. Grecita Calinawan			Engineer II, PDI Section, Program Beneficiary
				Development Coordinator Division (PBDGD)
	Ms. Milagrosa Bulawan			Civil Engineer(CE)-CARPO-PDI
	Ms. Marina Bustillo			CARPO
	Ms. Elizabeth de Guzman			MARO
	Mr. Salvador Sering			City Mayor of Surigao
	Mr. Luciano Lancin			Vice Mayor
	Mr. Romeo S. Perez	DAR	Butuan City	Regional Director
	Mr. Antonio B. Menor	DAR	Caraga Region	Asst. Regional Director for Operations
	Mr. Melacio B. Lumbras Jr.		Barangay	Barangay Councilmen
	Mr. Joesel P. Lucinda			Barangay Kagawad
	Mr. Raulito P. Sitoy			Barangay Captain

R.3 Government and Local Staff Interviewed by Study Team (Phase-II)

Name	Administration	Designation	
REGION - CAR			
a) Department of Agrarian Reform (DAR)			
1. Atty. Macrino Elveña	Provincial Office Bangued, Abra	Provincial Agrarian Reform Officer II	
2. Mr. Ludovico Ciubal		Provincial Agrarian Reform Officer I	
3. Mr. Rogelio Balla	Municipal Office	Chief, Agrarian Reform Program Officer (Beneficiaries Development Coordination Div.)	
4. Engr. Noli Bayngo		Senior Agrarian Reform Program Officer (Beneficiaries Development Coordination Div.)	
5. Mrs. Hilarina Bersamira	Barangay	Municipal Agrarian Reform Officer, Bangued	
6. Mrs. Marietta Griosis		Development Facilitator	
7. Mr. Santiago Oca		Barangay Captain, Sappaac Bangued, Abra	
8. Mrs. Teresita Bringas		DARPT, Bangued, MARO	
b) Department of Agriculture (DA)			
1. Ms. Elizabeth Agapad-Verzola	Provincial Office Bangued, Abra	Assistant Director/Regional Program Officer	
2. Mr. Frankin E. Cocoy		Assistant Director for Operation	
3. Ms. Minda B. Trinidad		Assistant Provincial Agricultural Officer	
4. Ms. Leticia P. Bolante		Planning Officer	
5. Mr. Anacleto Dingbagan		OIC/Manager, Research Outreach Station	
c) National Irrigation Administration (NIA)			
1. Mr. Sinesio T. Jimenez	Provincial Office Bangued, Abra	Provincial Irrigation Officer, Bangued, Abra	
d) Department of Environment and Natural Resources (DENR)			
1. Atty. Crisogono S. Bartolo Jr.	Provincial Office Bangued, Abra	Director	
2. Mr. Ernesto M. Alon		Engineer	
e) Others			
1. Dr. Constante B. Culangan	Provincial Office	Vice-Governor	
2. Mr. Arnel Valdez	Municipal Office	Provincial Planning and Development Office	
3. Mr. Luis P. Bersamin Jr.		Municipal Mayor	
4. Mr. Ramon V. Purugganan		Vice-Mayor	
5. Mr. Jaime A. Lo		Sangounian Bayan, Bangued	
6. Mr. Isidro B. Damian	Matiyano Malcos State University	MLGOD, Bangued	
7. Mr. Jutil B. Fanant		Project Development Officer	
8. Mr. Ireneo Molina		Ex-Mayor, Tayoum	
9. Dr. Pacifico Abaya		Municipal Agricultural Officer	
10. Ms. Grace Marjorie Recta		Center Chief, PCC at MMSU	
11. Mr. Cesar C. Arevalo		Science Research Specialist III, PCC at MMSU	
12. Mr. Armando B. Cortes		President, Cagayan State University	
REGION - II			
a) Department of Agrarian Reform (DAR)			
1. Ms. Josie Castillo-Co	Regional Office Tuguegarao	Provincial Governor	
2. Mr. Bonifacio Cristobal		Provincial Vice Governor	
3. Mr. Agaton "Jun" Pagbitao		Private Secretary II	
4. Mr. Lito Salatan		Executive Assistant III	
5. Mr. Nestor L. Jimenez	Provincial Office Cabarroguis, Quirino	Provincial Agrarian Reform Officer II	
6. Mr. Roberto P. Argonia		Provincial Agrarian Reform Officer I	
7. Mr. Felix R. Alvarez		Chief, Agrarian Reform Officer (CARPO)	
8. Mr. Rizal A. Salvador		MARO - Aglipay	
9. Mr. Edgardo Oliver		Provincial ARC Coordinator	
10. Dr. Pedro Molina DVM		Provincial Agriculturist	
11. Ms. Emer Collado		SARPO	
12. Ms. Frelita P. Ordenez		OAR Provincial Office	
13. Mr. Jun Antimano	Municipal Office Madella, Quirino	Engineer II	
14. Mr. Hermogenes I. Saliganan		MARO	
15. Mr. Mario D. Ramiscal		ARPT	
16. Mr. Deny Pastor		PPDO Planning Officer III	
17. Ms. Evangelina Ruiz		Development Facilitator	
18. Mr. Efraim M. Fernandez		Municipal Agriculturist	
b) Department of Agriculture (DA)			
1. Mr. Edmund J. Sana	Provincial Office	Regional Director	
2. Mr. Charles A. Cebacacan		Chief/ROS Manager, Agricultural Center, Cagayan	
3. Mr. Renato B. Pascua		Valley Upland Research Station	
4. Mr. Dominador P. Rabelisma		Chief, Agriculture Center, Livestock Project Incharge	
5. Dr. Emma Ludan DVM		Agriculturist, Crops Project Incharge	
		chief, DA-RADDL-II	
c) National Irrigation Administration (NIA)			
1. Mr. Angel T. Bacoling Jr.	Provincial Office, Cabarroguis, Quirino	Provincial Irrigation Officer	
2. Mr. Felicitiano J. Antonio		Assistant Provincial Irrigation Engineer	

Name	Administration	Designation
d) Others		
1. Mr. Renato Ylanan	Municipal Office Maddela, Quirino	Municipal Mayor
2. Mr. Mariano B. Gadingan, Jr.		Municipal Vice Mayor
3. Mr. Efraim M. Fernandez		Municipal Agriculturist
4. Mr. Arnulfo B. Ramel		Municipal Planning and Dev't. Coordinator
5. Mr. Wilson B. Gadingan		Municipal Engineer
6. Ms. Flordelina A. Blanco		Sanggunian Bayan (Councilor)
7. Mr. Johnny Lumidao		Sanggunian Bayan (Councilor)
8. Mr. Ricardo C. Tolentino		-do-
9. Mr. Randy G. Mateo		-do-
10. Mr. Romeo A. Ereso		-do-
11. Mr. Alipio G. Baingan		-do-
12. Mr. Felix Ramos		-do-
13. Mr. Pedro Ramel		-do-
14. Ms. Rojeria C. Ruiz		Secretary to Sanggunian Bayan (Municipal Council)
15. Mr. Danilo P. Vile	Barangay	Barangay Captain and ABC President
16. Mr. Edwin S. Besas		Sangguniang Kabataan (SK) Chairman and SK Federation President
17. Dr. Marcelino G. Delson Jr. DVM		Provincial Veterinarian, Quirino
18. Mr. Renazo Pascua		Agricultural Center Chief, CVUROS
REGION - VIII		
a) Department of Agrarian Reform (DAR)		
1. Mr. Adelberto B. Bangued	Regional Office Taclaban, Leyte	Regional Director, Tacloban City
2. Mr. Reynaldo D. Villas		Assistant Regional Director for Operations, Tacloban City
3. Ms. Paulina Canales	Provincial Office	SUARPO, PDI, SSO
4. Mr. Larry Villacorte		ARPO II, PDI, SSO
5. Ms. Josie Amande		DAR, Officer
6. Mr. Oscar Relo		Provincial Agrarian Reform Officer
7. Mr. Celestino Y. Canales		Provincial Agrarian Reform Officer, SSO
8. Mr. Silverio G. Gemperson		Chief Agrarian Reform Program Officer (CARPO), PDI, SSO
9. Mr. Cesario B. Tengson		DAR, Engineer
10. Mr. Marciano L. Costiniano		CARPO, BDCD - Leyte
11. Ms. Alma V. Peñero		ARPO II, BDCD - Leyte
12. Mr. Bernadino V. Mapalo		Senior Agrarian Reform Program Technologist
13. Ms. Lilia Fulache		Senior Agrarian Reform Program Technologist
14. Mr. Marcelo K. Adaya		General Construction and Maintenance Foreman, Provincial Engineers Office
15. Mr. Enrico B. Penetrado	Municipal Office Hilongos, Leyte	Municipal Agrarian Reform Officer (MARO) Hilongos
16. Ms. Maria Elena Elias		DAR Development Facilitator
17. Mr. Jose M. Viscara		Municipal Engineer, Municipal Development Office
18. Ms. Leonila B. Dichoso		Municipal Social Welfare and Development Officer
19. Mr. Romanico J. Montod		Municipal Agriculturist
20. Ms. Ma. Elena Elias		Development Facilitator (DF)
b) Department of Agriculture (DA)		
1. Mr. Anforia V. Salino	Regional Office Taclaban	Chief Planning, Monitoring and Evaluation Division
2. Mr. Erlindo P. Laplana	Provincial Office Taclaban	Provincial Agriculturist
3. Dr. Oscar B. Posas		Professor, Dept. of Animal Science and Veterinary
4. Ms. Cora M. Alvero		Provincial Planning and development Officer
5. Dr. Dolares L. Alcober		FARMI, ViSCA
6. Dr. Samuel S. Go		President, Visayas State College of Agriculture (ViSCA)
7. Dr. Archie T. Llus, DVM		Center Chief, DA-RADDL
8. Ms Remedios M. Ambida		Agriculturalist, DA-RADDL
c) National Irrigation Administration (NIA)		
1. Mr. Rogelio Belicano	Provincial Office Taclaban, Leyte	Provincial Irrigation Engineer
2. Mr. Cesario Aborquez		National Irrigation Administration (NIA) Surveyor, NIA
d) Department of Public Works and Highways (DPWH)		
1. Mr. Rodolfo A. Nerves		Provincial Engineer, DPWH Leyte
2. Mr. Landerico D. Yazar		Assistant Provincial Engineer, DPWH, Leyte
3. Ms. Esperanza L. Samaco		Asst. District Engineer, 3rd Eng. District Office
4. Mr. Danielito P. Padon		Engineer II, 3rd Eng. District Office
e) LEYECO IV		
1. Mr. Cruzito P. Payapaya		General Manager, Leyte IV Electric Cooperative Hilongos
2. Mr. Nello L. Laguna		Manager ISDP, LEYECO IV, Hilongos, Leyte

Name	Administration	Designation
f) Others		
1. Dr. Altigracia M. Villafior	Municipal Office	Mayor of Hilongos, Leyte
2. Ms. Rosario Ong Velos		Manager, Rural Bank of Hilongos
3. Mr. Enrique G. Salazar		Land Bank of the Philippines, Owner, Planters Trade
4. Mr. Danilo Fulache		Manager, Metro Hilongos Water District
5. Ms. Agatonica L. Caintic		District Supervisor, DECS
6. Dr. Samuel S. Go		President, Visayas State College of Agriculture
7. Dr. Oscar B. Posas, DVM		Professor & Head, Department of Animal Science and Veterinary Medicine, chief of POC at Visayas
REGION - X		
a) Department of Agrarian Reform (DAR)		
1. Mr. Rogelio E. Tamin	Regional Office	Regional Director, DAR Cagayan de Oro
2. Ms. Mabel Loyola	Malaybalay,	Project Development and Management Division
3. Ms. Antonieta R. Borra	Bukidnon	Provincial Agrarian Reform Office for Administration
4. Engr. Relani L. Ludeña		MARO, Malaybalay
5. Mr. Andrei L. Cariño		Agrarian Reform Program Technologist
6. Mr. Jose Ma. S. Baguio		Supervising Agrarian Reform Program Officer
7. Mr. Andrei L. Cariño		Project Officer, SSD, Cagayan de Oro
8. Mr. Norberto Amora	Provincial Office	Provincial Agrarian Reform Officer (PARO)
9. Mr. Vicente Tan	Malaybalay,	SARPT, Bukidnon
10. Mr. Rosmer B. Cartagbiva	Bukidnon	Assistant Provincial Engineer, Malaybalay
11. Mr. Leonilo R. Mosqueda		Mechanical Engineer-IV, Motorpool and Shop Div.
12. Mr. Merardo M. Huiso		Water Works Division
13. Mr. Manuel Bensoy		Silae Barangay Captain
14. Ms. Shirley G. Arquiza		Chief Agrarian Reform Program Officer, Support Services Division, Cagayan de Oro City
15. Ms. Estelita M. Madjos		Agri. II, Provincial Agriculture Office Malaybalay, Bukidnon
16. Mr. Ben E. Gumayagay		Supervising Agriculturist, PAO, Bukidnon
17. Mr. Ramos		Provincial Agricultural Officer PAO, Bukidnon
18. Ms. Lealyn A. Ramos		Chief Agriculturist Northern Mindanao Integrated Agri. Research Center (NOMIARC), Dalwangan Malaybalay, Bukidnon
19. Ms. Juanita B. Salvani		Sr. Agriculturist / Research Root Crop Specialist NOMIARC Dalwangan, Malaybalay, Bukidnon
20. Ms. Lolita C. Villegas		DECS: District Supervisor
21. Mr. Francis Xavier L. Intong		Provincial Administrator
22. Eng. Rudy S. Agustin		Area- Manager, Area Officer
23. Mr. Nicky Peralta		Assistant Regional Director
24. Mr. Julius Maximo P. Valmores, Jr.		OIC-PARO / Chief Agrarian Reform Program Officer for Beneficiary Development and Coord. Division
25. Eng. Teofilo S. Cansancio		SAPRO, DAR
26. Mr. Julius Maximo P. Valmores Jr.		CARPO - BDCD / OIC PARO IDAR, Bukidnon
27. Ms. Alejandra I. Bahian	Municipal Office	MARO, Malaybalay, Bukidnon
28. Ms. Prima L. Oro		ARPT/OF, Malaybalay, Bukidnon
b) Department of Agriculture (DA)		
1. Mr. Joel S. Rudinas	Regional Office,	ARD for Crops, Cagayan de Oro
2. Ms. Roxanne Hojas	Cagayan de Oro	Chief Planning Officer
3. Ms. Beth G. Betonio		Research Outreach Station
4. Ms. Erlinda Alconcel A. Ayson		Sanice, Claviera, Misamis Oriental
5. Mr. Roserio L. Anacleto		Chief Regional Farmer's Training Center
6. Mr. Pete Dumanggas		Cagayan de Oro City
7. Dr. Reynaldo C. Gaballo		Director, POC at CMU
8. Ms. Esther G. Cajés	Provincial Office,	Chief, DA-National Artificial Breeding Center
9. Mr. Abelardo A. Tandug	Malaybalay	Assistant Regional Director for Livestock
10. Mr. Constancio C. Maghanoy		Director of Extension, Central Mindanao University
11. Mr. Melquianes A. Taveros	Municipal Office	Mususan, Bukidnon
c) National Irrigation Administration (NIA)		
1. Mr. Jimmy L. Apostol	Provincial Office	Project Officer, BUNGA, DA Compound
2. Mr. Ewene E. Calucan		Malaybalay, Bukidnon
3. Mr. Julius Simbahon Maquiling		Chief, DA-Malaybalay Stock Farm
d) Department of Public Works and Highways (DPWH)		
1. Ms. Lola C. Gamboa	District Engineer's	Municipal Cooperative Development Officer,
2. Mr. Ruben M. Barroso	Office	
3. Eng. Rosmendo C. Bongocan, Jr.		Assistant District Engineer District-1, Malaybalay
4. Mr. Octavio Cesar E. Azura		District Engineer, 1st District, Malaybalay Bukidnon
5. Mr. Leharado A. Hihampas		Engineer II, DPWH
6. Mr. Rustan Dela Cerna	Municipal Engineer's	Chief Planning Design Division
		Water Supply Engineer II, DPWH
		Building Inspector, Municipal Engineer's Office

Name	Administration	Designation
e) Others		
1. Mr. Pablo M. Ravelo	Municipal Office	Municipal Mayor, Cabanglasan, Bukidnon
2. Mr. Pableo H. Ravello Sr.		Municipal Mayor, Malaybalay, Bukidnon
3. Mr. Agustin H. Dionaldo		Vice Mayor, Cabanglasan, Bukidnon
4. Mr. Florencio T. Flores, Jr.		Vice Mayor Malaybalay, Bukidnon
5. Mr. Teodocio I. Pabillaran		Municipal Engineer, Malaybalay
6. Mr. Andrew T. Bergado		Municipal Agricultural Officer
7. Ms. Virginia I. Flores		Municipal Social Welfare and Development Officer Malaybalay, Bukidnon
8. Ms. Katherine TN Toledo		Municipal Health Officers, Malaybalay Bukidnon
9. Mr. Herculano S. Romulo		Municipal Planning and Development Coordinator
10. Mr. Teodocio I. Pabillaran		Municipal Engineer, Malaybalay, Bukidnon
11. Ms. Prima L. Oro		ARPT/DF, Malaybalay
12. Ms. Lolita C. Villegas		DECS: District Supervisor
13. Mr. Herculano S. Romulo		Municipal Planning and Development Coordinator
14. Mr. Teodocio I. Pabillaran		Municipal Engineer, Malaybalay, Bukidnon
15. Mr. Eddie S. Maape		Assistant Center Manager, Northern Mindanao Integrated Agricultural Research Center (NOMIARC)
16. Mr. Lealyn A. Ramo		Chief Agriculturist, NOMIARC

ANNEX S. COLLECTED DATA

List of Collected Data

Collected data in the courses of Phase-I and Phase-II field works are tabulated as follows;

(1) Comprehensive Agrarian Reform Program (CARP)

1. The CARP 2000 : Medium Term Development Plan (1993-1998)(DAR)
2. Survey on the Development of Marginal Lands (DAR)
3. Comprehensive Agrarian Reform Program(CARP), RA No.6657, Presidential Issuance (DAR)
4. 1997 CARP Report (DAR)
5. Briefing Kit on CARP, Published by Philippines Presidential Agrarian Reform Council (DAR)
6. Comprehensive Agrarian Reform Program(CARP) (DAR)
7. 1995 Philippines Statistical Yearbook (NSO)
8. Social Reform Agenda, Winning the Future (Social Reform Council)
9. Briefing Kit of CARP (DAR)
10. Medium-Term Philippine Development Plan (NEDA)
11. Development Investments for Agrarian Reform in the Philippines (DAR)
12. Development Investments for Agrarian Reform in Nueva Ecija (DAR)
13. Development Investments for Agrarian Reform in Bataan (DAR)
14. Directory of Philippine Foundation (Association of Foundation)

(2) Topographic Survey

1. Subdivision Plan, San Juan, La Union (BL)
2. Subdivision Plan, Tuyo, Balanga, Bataan (BL)
3. Subdivision Plan, Calawag, Quezon (BL)
4. Subdivision Plan, San Vicente, Trinidad, Bohol (DENR)
5. Subdivision Plan, Silae, Malybalay, Bukidnon (BL)
6. Subdivision Plan, Kipalili, Asuncion, Davao (DAR)
7. Plan of Property, Kalibo, Aklan (BL)
8. Amendment Plan, Sapaac, Bengued, Abra (DENR)

9. Cadastre Map, San Juan, La Union (Bureau of Forestry)
10. Cadastre Map, Marangog, Leyte (Bureau of Forestry)

(3) Rural Socio-Economy

1. Result and conclusion of the Rural Socio-economic Survey on Marginal ARC (Earthwater Co.)

(4) Meteorology and Hydrology

1. Climate Map of the Philippines (PAGASA)
2. Tropical Cyclone Statistics in the PAR, 1948-1994 (PAGASA)
3. Information on Tropical Cyclone, Feb., 1996 (PAGASA)
4. Climate of the Philippines, Sep., 1984 (PAGASA)
5. Monthly Rainfall Data (13 Station), 1961-1994 (PAGASA)
6. 24hr Maximum Rainfall Data (13 Station), 1961-1994 (PAGASA)
7. Monthly Mean Temperature (13 Station), 1961-1994 (PAGASA)
8. Monthly Maximum Temperature (13 Station), 1961-1994 (PAGASA)
9. Monthly Minimum Temperature (13 Station), 1961-1994 (PAGASA)
10. Monthly Relative Humidity (13 Station), 1961-1994 (PAGASA)
11. Monthly Evaporation (13 Station), 1961-1994 (PAGASA)
12. Monthly Wind Direction and Speed, 1961-1994 (PAGASA)
13. Station Profile (PAGASA)

(5) Soil, Land-Use and Agriculture

1. Statistics on Selected Major Crops by Province for Past Ten Years from 1984 to 1995 (BAS, DA)
2. Soil Map of the Philippines - on the Model Areas and Their Vicinity (BSWM)
3. Planting Calendar (BPI)
4. An Integrated Sustainable Development Program for CARP-ISF Areas in the Philippines, An Ecosystem Approach (Ecosystems Research and Development Bureau, DENR)
5. National Handbook on Land and Other Physical Resources (NEDA)

6. Performance of Agriculture, Jan.-Jun.,1995, (Bureau of Agriculture, DA)

(6) Animal Husbandry and Fisheries

1. Annual Report 1994 (BAI, DA)
2. Marketing Facilities and Infrastructure Series Vol. I, Livestock (BAS, DA)
3. Selected Statistics on Agriculture, Jun., 1993 (BAS, DA)
4. Selected Macroeconomic and Agriculture Sector Study (BAS, DA)
5. Summary Report of Accomplishments 1993-1995 (PCC, DA)
6. Report on the Performance of Agriculture, Jan.- Dec., 1995 (BAS, DA)
7. Memorandum of Understanding on the Philippine Livestock Sector Study (ADB)
8. Profile of the PCC Networks, 1994 (PCC, DA)
9. The Feedmilling Industry in the Philippines, 1994 (BAI, DA)
10. The Philippines Recommends for Pasture and Forage Crops, 1976 (Philippine Council for Agriculture)
11. The Philippines Recommends for Livestock Feed Formulation, 1987 (Philippines Council for Agriculture and Resources, Research and Development)
12. The Philippines Recommends for Goat Farming, 1985 (PCARRD)
13. The Philippines Recommends for Dairy Products Manufacture, 1991 (PCARRD)
14. The Philippines Recommends for Duck Raising, 1991 (PCARRD)
15. The Philippines Recommends for Beef Cattle Production, 1994 (PCARRD)
16. Compact Feedlot Fattening, 1993 (PCARRD)
17. Cattle, Carabao and Dairy Development Plan 1992-1995 (BAI, DA)

(7) Farmer's Organization and Supporting Services

1. Primer (BAR)
2. Cooperative Code of the Philippines (CDA)
3. Annual Report, 1993 (BAR)
4. On-Farm Research Manual (Planning On-Farm Research) (BAR)
5. Annual Report, 1994 (BAR)

6. Research on Commercialization Program (BAR)
7. On-Farm Research Manual (Crop-Livestocks Systems) (BAR)
8. Philippines Agricultural Research Journal (BAR)
9. On-Farm Research Manual (Overview and Directions of Agricultural Research) (BAR)
10. Agricultural Foreign Trade Development, 1993-1994 (BAR)
11. Supply and Utilization Accounts of Selected Agriculture commodities, 1991-1994 (BAR)
12. Vibrant Year of Cooperative Development 1995 Annual Report (CDA)
13. Towards a Viable Agrarian Reform Community (BAR)

(8) Rural Sociology and Agro-Economy

1. 1995 Philippine Statistical Yearbook, Oct. 1995 (NSCB))
2. 1994 Philippine Yearbook (NSO)
3. World Development Report 1995, (Workers in an Integrating World)
4. Annexes of the Report of the Second Organizational Maturity Assessment of ARC Organization: Findingsm Analysis & Recommendation (FAO-TSARRD)
5. 3rd Organizational Maturity Assessment of ARC Organization (FAO-TSARRD)
6. A Strategy To Fight Poverty, Philippines, Mar. 1996, (The World Bank, Country Operations Division, Country Department I, East Asia & Pacific Region)
7. Survey on Rural Welfare, Rural Welfare Monitoring: Focus on Agrarian Reform Beneficiaries, 1994 (DA, BAS, Agricultural Account and Statistical Division)
8. Cooperative Code of the Philippines RA6938, 6939 (CDA)
9. Manual on Agrarian Reform Community Development (DAR)

(9) Irrigation and Drainage

1. Guidebook for the Calculation of Crop Evapotranspiration (ET crop) using Modified Penman Method (NIA)
2. Diversified Crops Irrigation Engineering Project, March 1992 (NIA)

3. Highland Integrated Rural Development Project in La Trinidad (NIA)
4. Organization Chart of CARP-Irrigation Component (NIA)
5. Feasibility Study on Integrated Jala-Jala Rural Development Project, Sep., 1990 (JICA)
6. Basic Design Study Report on the Project for the Integrated Jala-Jala Rural Development Project in the Republic of the Philippines, Apr., 1992 (JICA)

(10) Rural Agro-Industry

1. The Key Commercial Crops Development Program 1993-1998 (DA)
2. DTI-CARP Small and Medium Industry Technology Transfer Development Program (DTI)
3. QUEDANCOR Pro-Farmers Focus (QUEDANCOR)
4. Handbook on Agricultural Mechanization (Agricultural Machinery Inter-Agency Committee)
5. Catalogue of Commercially Available Agricultural Machinery in the Philippines (Agricultural Machinery Inter-Agency Committee)

(11) Physical Plan

1. Monitoring and Evaluation Report, DPWH Implementation of CARP Projects as of DEC., 1995 (DPWH)
2. DPWH Organization Chart
3. Comprehensive Agrarian Reform Program Infrastructure Support Services, Aug., 1995 (DPWH)
4. Project Implementation Guidelines - CARP, Feb., 1989 (DPWH)
5. Typical Cross-Section of Road Unit Cost (DPWH)
6. Standard Drawings of the Deep Well (DPWH)
7. Feasibility Study on the Rural Road Network Development Project (JICA)
 - Main Report
 - Annex
 - Simplifies Project Evaluation
 - Manual for Design and Construction of Low-Class Pavement

(12) Project Implementation and Cost Estimate

1. Feasibility Study Report of CARP-IC Project (NIA-CARP)
2. Water Impounding Projects Feasibility Study (BSWM)
3. Small Water Impounding Project (SWIP/SWIM) Technical Model/Standard (BSWM)
4. Level I Operation and Maintenance Manual (Shallow Well)(DPWH-PMO-Rural Water Supply)
5. Level I Operation and Maintenance Manual (Deep Well)(DPWH-PMO-Rural Water Supply)
6. Level I Operation and Maintenance Manual (Spring Development) (DPWH-PMO-Rural Water Supply)
7. Construction and Maintenance (DPWH-PMO-Rural Water Supply)

(13) Environment

1. Seminar Proceedings on Soil Science and Agricultural Technology in the Philippines, Jun., 1994 (BSWM, DA)
2. Evaluation of Erosivity, Erodibility, and Crops and Soil Loss Equation, 1986, (UP Los Banos)
3. Soil and Water Conservation Planning; Policy Issues and Recommendation, 1988 (UP Los Banos)
4. Soil Management, 1984 (PCARRD)
5. NIPAS Act (National Integrated Protected Area Systems) (DENR)
6. A Primer on Environmental Impact Assessment in the Philippines (Environmental Management Bureau)
7. Amending the revised Rules and Regulations Pertinent to the Philippine Mining Industry, April 1992 (United Nations, Department of Economic and Social Development)
8. Environmental Guidelines for Selected Agricultural and Natural Resources Development Projects, Nov.1991 (ADB)
9. The Environmental Program of the Asian Development Bank (ADB)
10. Establishment of National List of Priority Species of Philippine Wild Birds, Animals and Reptiles (DENR)

(14) Related Studies and Projects for Development of ARC

1. Related Studies and Projects on ARC (DAR)

