

## **APPENDIX G: COST ESTIMATES**



I Breakdown of Construction Cost

Table G-I-1

## AGUAN PHASE I Preparatory Works

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Total		
			Unit Price	Foreign Currency Amount	Local Price	Unit Price	Currency Amount	Amount
1. Project Office	Unit	1.0	0.0	0.0	90000.0	90000.0	90000.0	
2. Motor Pool	m2	800.0	0.0	0.0	20.0	12000.0	12000.0	
3. Office Equipment	L.S.		0.0	0.0		30000.0	30000.0	
4. House	Unit	1.0	0.0	0.0	150000.0	150000.0	150000.0	
Total			0.0	0.0		282000.0	282000.0	

Table G-I-2

## AGUAN PHASE I Irrigation System (I-1) Head Works (Middle Aguan)

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Total		
			Unit Price	Foreign Currency Amount	Local Price	Unit Price	Currency Amount	Amount
1. Excavation (River)	m3	104000.0	5.5	572000.0	3.0	312000.0	884000.0	
2. Reinforced Concrete	m3	1000.0	104.0	104000.0	104.0	104000.0	208000.0	
3. Mas Concrete	m3	3600.0	83.0	298800.0	74.0	266400.0	565200.0	
4. Form	m2	2300.0	25.5	58650.0	9.5	21850.0	80500.0	
5. Leveling Concrete	m3	280.0	57.2	16016.0	60.9	17052.0	33068.0	
6. Frame Works (Level)	m2	4000.0	17.3	69200.0	18.2	72800.0	142000.0	
7. Frame Works (Slope)	m2	15210.0	31.6	480535.0	30.1	457621.0	938157.0	
8. Gate (1.7x1.5)	Unit	4.0	21810.0	87240.0	140.0	560.0	87800.0	
9. Gate (1.5x1.0)	Unit	1.0	15560.0	15560.0	140.0	140.0	15700.0	
10. Temporary Works	L.S.			93434.3		67243.3	150677.7	
11. Others	L.S.			89826.8		65993.3	155820.1	
Sub-Total [1.-11.]				1883363.3		1395866.6	3278229.9	
12. O.H.	%	30.0		565909.0		415757.9	981666.9	
Sub-Total [1.-12.]				2449272.3		1801517.4	4250789.7	
13. Miscellaneous				27.7		82.5	110.2	
Total				2452300.0		1901700.0	4354000.0	

Table G-I-3

## AGUAN PHASE II Irrigation System (I-1) Head Works (Upper Aguan)

(Cost Unit : Lps)

Description	Unit	Quantity	Foreign Currency		Local Currency		Total Amount
			Unit Price	Amount	Unit Price	Amount	
1. Excavation (River)	m3	46800.0	5.5	257400.0	3.0	140400.0	397800.0
2. Reinforced Concrete	m3	500.0	104.0	52000.0	104.0	52000.0	104000.0
3. Mas Concrete	m3	2000.0	83.0	166000.0	74.0	148000.0	314000.0
4. Form	m2	1300.0	25.5	33150.0	9.5	12350.0	45500.0
5. Leveling Concrete	m3	355.0	57.2	20353.2	60.9	21680.4	42043.6
6. Frame Works (Level)	m2	6022.0	17.3	104180.6	18.2	109600.4	213781.0
7. Frame Works (Slope)	m2	5173.0	31.6	163566.8	30.1	155807.3	319374.1
8. Stone Masonry (s=1:0.3)	m2	3132.0	35.1	109933.2	43.6	136555.2	246488.4
9. Gate (1.5*1.0)	Unit	1.0	16550.0	16550.0	140.0	140.0	16700.0
10. Gate (1.5*1.5)	Unit	2.0	20310.0	40620.0	140.0	280.0	40900.0
11. Temporary Works	L.S.			79547.5		57541.3	133188.7
12. Others	L.S.			5546.1		43217.7	56763.8
Sub-Total [1.-12.]	*	30.0		1124467.3		907572.3	2032039.6
13. O.H.				337340.2		272271.7	609611.9
14. Miscellaneous				1461507.5		1179844.0	2641651.5
				92.5		55.0	148.5
Total				1451900.0		1179900.0	2541800.0

Table G-I-4

## AGUAN PHASE I Irrigation System (1-2) Head Works (Jaquesa)

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Currency Amount	Local Price	Unit Price	Total Amount
			Foreign Price	Unit Price	Amount				
1. Excavation (River)	m3	241.0	5.5	1525.5	723.0	3.0	8.5	2048.5	
2. Reinforced Concrete	m3	100.0	104.0	10400.0	10400.0	104.0	208.0	20800.0	
3. Mas Concrete	m3	430.0	93.0	35690.0	31820.0	74.0	157.0	57510.0	
4. Form	m2	270.0	25.5	6885.0	2535.0	9.5	35.0	9450.0	
5. Leveling Concrete	m3	71.0	57.2	4061.2	4333.9	60.9	118.1	8355.1	
6. Frame Works (Level)	m2	888.0	17.3	15379.7	16179.8	18.2	35.5	31555.5	
7. Frame Works (Slope)	m2	930.0	31.5	29388.0	27933.0	30.1	51.7	57381.0	
8. Gate (2.25*1.25)	Unit	2.0	24810.0	49620.0	290.0	140.0	24850.0	49900.0	
9. Temporary Works	L.S.			47875.1				73191.9	
10. Others	L.S.			10051.3				16011.3	
Sub-Total [1.-10.]				210658.8				335237.3	
11. O.H.	%	30.0		53197.0				100871.2	
Sub-Total [1.-11.]				273855.8				437108.5	
12. Miscellaneous				45.2				91.5	
Total				273901.0				437200.0	

Table G-I-5

## AGUAN PHASE II Irrigation System (1-2) Head Works (Mame)

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Currency Amount	Local Price	Unit Price	Total Amount
			Foreign Price	Unit Price	Amount				
1. Excavation (River)	m3	223.0	5.5	1226.5	689.0	3.0	8.5	1893.5	
2. Reinforced Concrete	m3	300.0	104.0	31200.0	31200.0	104.0	208.0	52400.0	
3. Mas Concrete	m3	1200.0	83.0	99600.0	98000.0	74.0	157.0	188400.0	
4. Form	m2	1600.0	25.5	40800.0	17100.0	9.5	35.0	53000.0	
5. Leveling Concrete	m3	213.0	57.2	12183.6	12971.7	60.9	118.1	25155.3	
6. Frame Works (Level)	m2	1052.0	17.3	18272.6	19328.4	18.2	35.5	37701.0	
7. Frame Works (Slope)	m2	2581.0	31.5	75299.6	71658.1	30.1	51.7	145907.7	
8. Gate (2.0*1.0)	Unit	2.0	20310.0	40620.0	280.0	140.0	20450.0	40900.0	
9. Temporary Works	L.S.			102475.1				144581.9	
10. Others	L.S.			21340.9				35547.5	
Sub-Total [1.-10.]				448159.3				745439.0	
11. O.H.	%	30.0		134447.8				223943.7	
Sub-Total [1.-11.]				582607.1				970482.7	
12. Miscellaneous				52.9				151.3	
Total				582700.0				970500.0	

Table G-I-6

AGUAN PHASE II Irrigation System (I-3) Siphon (Pte. Name)

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Total		
			Foreign Price	Foreign Currency Amount	Local Price	Local Currency Amount	Unit Price	Amount
1. Excavation (River)	m3	5450.0	5.5	29975.0	3.0	16350.0	8.5	46325.0
2. Backfill (Structure)	m3	4850.0	3.5	16975.0	7.0	33950.0	10.5	50925.0
3. Disposal of Surplus Soil	m3	600.0	1.5	900.0	.9	540.0	2.4	1440.0
4. Reinforced Concrete	m3	430.0	104.0	44720.0	104.0	44720.0	208.0	89440.0
5. Form	m2	1290.0	25.5	32855.0	9.5	12255.0	35.0	45150.0
6. Leveling Concrete	m3	34.0	57.2	1944.8	60.9	2070.6	118.1	4015.4
7. Concrete Pipe (1000mm)	m	193.0	170.4	32857.2	115.0	22195.0	285.4	55082.2
8. Water Control Equipment	L.S.			20750.0		250.0		21000.0
9. Temporary Works	L.S.			26487.6		17293.8		43781.4
10. Others	L.S.			10378.7		7481.2		17859.9
Sub-Total [I.-10.]				217911.3		157105.6		375017.0
11. D.H.	%	30.0		65373.4		47131.7		112505.1
Sub-Total [I.-11.]				283284.7		204237.3		487522.1
12. Miscellaneous				15.3		62.7		77.9
Total				283300.0		204300.0		487500.0

Table G-I-7

AGUAN PHASE I Irrigation System (11) Pump Station No.1

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost		Financial Cost		Total Amount
			Foreign Price	Unit Price	Local Price	Unit Price	
1. Equipments							
(1) Vertical Mixed Flow Pump	Unit	2.0	442500.0	885000.0	0.0	442500.0	885000.0
(2) Butterfly Valve D=700mm	Unit	2.0	10000.0	20000.0	0.0	10000.0	20000.0
(3) Check Valve D=700mm	L.S.	2.0	32900.0	55800.0	0.0	32900.0	55800.0
(4) Stop Log	L.S.			59200.0	0.0		59200.0
(5) Bar Screen	L.S.			29200.0	0.0		29200.0
(6) Facility of Water Supply	L.S.			10000.0	0.0		10000.0
(7) Radiator	L.S.			59200.0	0.0		59200.0
(8) Crane	L.S.			50000.0	0.0		50000.0
(9) Panel	L.S.			54200.0	0.0		54200.0
(10) Generator (15KVA)	L.S.			20000.0	0.0		20000.0
(11) Outlet Pipe	L.S.			14500.0	0.0		14500.0
(12) Fuel Storage Tank 3.0m <sup>3</sup>	L.S.			212800.0	53100.0		265900.0
(13) Settling	L.S.			222000.0	22600.0		244600.0
(14) Transportation Fee	L.S.			1784500.0	75700.0		1860200.0
Sub-Total [1.]				117008.2	82015.2		199023.4
2. Suction Sump	L.S.			9421.9	897.1		15419.0
3. Discharge Sump	L.S.			110800.0	47500.0		158300.0
4. Pump Shed	L.S.			282161.9	15527.8		297689.7
5. Pipe Line	L.S.			27300.0	8400.0		35700.0
6. Temporary Works	L.S.			115559.6	11707.0		127266.6
7. Others	L.S.			2425751.6	245847.1		2672598.7
Sub-Total [1.-7.]				48.4	52.9		101.3
8. Miscellaneous							
Total				2436800.0	245900.0		2682700.0



Table G-I-8

## AGUAN PHASE II Irrigation System (II) Pump Station No.2

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Currency Amount	Unit Price	Total Amount
			Foreign Price	Unit Price	Amount			
1. Equipments								
(1) Vertical Mixed Flow Pump	Unit	2.0	95900.0	0.0	0.0	95900.0	191800.0	
(2) Butterfly Valve D=350mm	Unit	2.0	4400.0	0.0	0.0	4400.0	8800.0	
(3) Check Valve	Unit	2.0	5900.0	0.0	0.0	5900.0	11800.0	
(4) Stop Log	L.S.						59200.0	
(5) Bar Screen	L.S.						32500.0	
(6) Facility of Water Supply	L.S.						29200.0	
(7) Radiator	L.S.						5000.0	
(8) Crane	L.S.						45900.0	
(9) Panel	L.S.						50000.0	
(10) Generator (15KVA)	L.S.						54200.0	
(11) Outlet Pipe	L.S.						19200.0	
(12) Fuel Storage Tank 3.0m <sup>3</sup>	L.S.						11700.0	
(13) Setting	L.S.						21150.0	
(14) Transportation Fee	L.S.						84500.0	
Sub-Total [1.]							99300.0	
2. Suction Sump	L.S.						701700.0	
3. Discharge Sump	L.S.						60016.3	
4. Pump Shed	L.S.						9565.9	
5. Others	L.S.						81690.0	
Sub-Total [1.-5.]							426481.6	
5. Miscellaneous							995520.9	
							79.1	
Total							895700.0	
							120900.0	
							1015500.0	

Table G-I-9

AGUAN PHASE I Irrigation System (III) Main Canal

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Currency			Total		
			Unit Price	Foreign Currency Amount	Unit Price	Local Price	Local Currency Amount	Unit Price	Amount		
1. Excavation (Canal)	m3	531450.0	1.1	584605.0	1.2	757752.0	2.3	1452358.0			
2. Embankment (Canal)	m3	61527.0	1.4	85137.8	.9	55374.3	2.3	141512.1			
3. Disposal of Surplus Soil	m3	569933.0	1.5	854893.5	.9	512939.7	2.4	1367639.2			
4. Related Structure											
(1) Siphon Type II-(1)	Unit	5.0	14672.5	73352.5	11800.5	59002.7	25473.0	132355.1			
(2) Siphon Type II-(2)	Unit	4.0	20558.3	82793.3	16390.4	65561.6	37038.7	146354.9			
(3) Siphon Type III-(1)	Unit	4.0	9282.9	37131.4	7477.7	29910.7	16760.5	67042.1			
(4) Siphon Type III-(2)	Unit	10.0	13045.3	130452.5	10369.2	103692.2	23414.5	234144.7			
(5) Siphon Type IV-(1)	Unit	6.0	6443.4	38650.6	5125.8	30754.7	11558.2	59415.3			
(6) Siphon Type IV-(2)	Unit	2.0	9143.7	18287.4	14330.6	14330.6	16309.0	32618.0			
(7) Check Gate Type II	Unit	2.0	53352.8	110705.7	10411.7	20823.4	63754.5	131579.1			
(8) Check Gate Type III	Unit	4.0	23254.6	93059.3	2620.8	10493.0	25985.3	103541.3			
(9) Check Gate Type IV	Unit	3.0	16659.1	50055.2	2131.8	6395.6	18916.9	56450.6			
(10) Chute Type IV	Unit	1.0	6359.2	6359.2	4390.5	4390.5	10759.7	10759.7			
(11) Diversion Work	Unit	42.0	13911.7	584269.7	1036.7	44362.2	14968.4	628572.0			
(12) Box Culvert Type II	Unit	1.0	9979.1	9979.1	7675.7	7675.7	17855.8	17855.8			
(13) Box Culvert Type III	Unit	2.0	7412.5	14824.9	5549.0	11088.0	12951.5	25922.9			
(14) Waste Way Work	Unit	3.0	748.5	2245.6	500.4	1501.3	1248.0	3746.9			
Sub-Total [(1)-(14)]				1252225.3		410193.1		1662418.4			
5. Others	L.S.			144393.4		86813.0		231206.4			
Sub-Total [1.-5.]				303232.1		1823072.1		4855334.1			
6. O.H. Miscellaneous	%	30.0		909578.6		546921.6		1456500.2			
7. Miscellaneous				3941940.7		2369993.7		6311934.4			
				59.3		5.3		65.6			
Total				3942000.0		2370000.0		6312000.0			

Table C-I-10

AGUAN PHASE II Irrigation System (III) Main Canal

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost		Local Currency		Total Amount
			Foreign Price	Unit Price	Local Price	Amount	
1. Excavation (Canal)	m3	42522.0	1.1	459504.2	1.2	512186.4	983690.6
2. Embankment (Canal)	m3	71050.0	1.4	99470.0	.9	63945.0	163415.0
3. Disposal of Surplus Soil	m3	35572.0	1.5	533658.0	.9	320194.8	853852.8
4. Related Structure							
(1) Siphon Type II-(2)	Unit	3.0	2059.3	62095.0	16390.4	49171.2	111256.2
(2) Siphon Type III-(1)	Unit	2.0	9282.8	18565.7	7477.7	14955.4	33521.0
(3) Siphon Type III-(2)	Unit	4.0	13046.3	52185.0	10369.2	41472.9	93657.9
(4) Siphon Type IV-(2)	Unit	1.0	9143.7	9143.7	7165.3	7165.3	16309.0
(5) Check Gate Type II	Unit	2.0	55352.8	110705.7	10411.7	20823.4	131523.1
(6) Check Gate Type III	Unit	3.0	23254.6	69793.7	2620.8	7862.3	77655.0
(7) Check Gate Type IV	Unit	2.0	16565.1	33370.1	2131.8	4253.7	37533.8
(8) Chute Type III	Unit	1.0	8345.3	8345.3	5638.1	5639.1	13983.3
(9) Chute Type IV	Unit	1.0	6568.2	6568.2	4390.5	4390.5	10759.7
(10) Diversion Work	Unit	59.0	13911.7	819204.5	1055.7	72313.7	1032616.2
(11) Box Culvert Type II	Unit	2.0	9979.1	19958.1	7876.7	15753.4	35711.5
(12) Box Culvert Type III	Unit	1.0	7412.5	7412.5	5549.0	5549.0	12961.5
(13) Waste Way Work	Unit	4.0	748.5	2994.2	500.4	2001.7	4995.9
Sub-Total [(1)-(13)]				1360842.7		251960.4	1612803.1
5. Others	L.S.			123173.7		57414.3	180588.1
Sub-Total [1.-5.]				2586648.5		1205700.9	3792349.6
6. G.H.	x	30.0		775994.6		361710.3	1137704.9
Sub-Total [1.-6.]				3362643.2		1557411.2	4930054.4
7. Miscellaneous				56.8		88.8	145.6
Total				3362700.0		1567500.0	4930200.0

Table G-I-11

AGUAN PHASE I Irrigation System (IV) Secondary Canal

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Total Amount
			Foreign Price Unit Price	Foreign Currency Amount	Local Price Unit Price	
1. Excavation (Canal)	m3	18700.0	1.1	20570.0	1.2	22440.0
2. Embankment (Labor)	m3	18700.0	.2	3740.0	1.1	20370.0
3. Related Structure						
(1) Aqueduct	Unit	2.0	1274.7	2549.4	831.2	1682.4
(2) Farm Pond	Unit	51.0	1523.8	98114.3	1585.5	79933.1
(3) Tractor Passage	Unit	515.0	879.6	453011.1	823.8	424261.6
Sub-Total [(1)-(3)]				533674.9		505757.0
4. Others	L.S.			28992.2		27439.9
Sub-Total [(1)-(4.)				508864.1		576215.9
5. O.H.	%	30.0		182065.2		172864.8
Sub-Total [(1)-(5.)				789949.3		749080.7
6. Miscellaneous				50.7		19.3
Total				789900.0		749100.0

Table G-I-12

AGUAN PHASE II Irrigation System (IV) Secondary Canal

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Total Amount
			Foreign Price Unit Price	Foreign Currency Amount	Local Price Unit Price	
1. Excavation (Canal)	m3	18940.0	1.1	18534.0	1.2	20328.0
2. Embankment (Labor)	m3	18940.0	.2	3388.0	1.1	18534.0
3. Related Structure						
(1) Aqueduct	Unit	6.0	1274.7	7649.2	831.2	4987.1
(2) Farm Pond	Unit	13.0	1823.8	25009.5	1585.5	20352.1
(3) Tractor Passage	Unit	435.0	879.6	382640.5	823.8	358356.9
Sub-Total [(1)-(3)]				415298.2		393656.1
4. Others	L.S.			21865.0		21132.9
Sub-Total [(1)-(4.)				459165.2		443791.1
5. O.H.	%	30.0		137755.9		133137.3
Sub-Total [(1)-(5.)				596942.1		575928.4
6. Miscellaneous				57.9		71.6
Total				597000.0		577000.0

Table G-I-13

## AGUAN PHASE I Drainage Canal

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Price	Local Currency Amount	Unit Price	Total Amount
			Foreign Price	Unit Price	Amount				
1. Excavation (Canal)	m3	23300.0	1.1		257180.0	1.2	280560.0	2.3	537740.0
2. Embankment (Canal)	m3	44000.0	1.4		61600.0	.9	39600.0	2.3	101200.0
3. Disposal of Surplus Soil	m3	163000.0	1.5		284700.0	.9	170620.0	2.4	455320.0
4. Related Structure									
(1) Drop Structure Type II	Unit	4.0	10303.4		41213.7	6545.1	34190.6	16848.6	75394.3
(2) Drop Structure Type III	Unit	26.0	7895.0		205270.1	6478.8	168345.2	14373.8	373719.3
(3) Drop Structure Type IV	Unit	59.0	5231.1		309615.7	4242.5	250310.2	9493.7	560123.9
Sub-Total [(1)-(3)]					556299.4		452940.0		1009239.4
5. Others	L.S.				57989.0		47195.0		105185.0
Sub-Total [1.-5.]		30.0			1217759.4		991116.0		2206984.4
6. O.H.	%				36530.5		297334.9		662665.3
Sub-Total [1.-6.]					1583099.9		1288450.9		2871549.7
7. Miscellaneous					1.1		49.2		50.3
Total					1583100.0		1288500.0		2871600.0

Table G-I-14

## AGUAN PHASE II Drainage Canal

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Price	Local Currency Amount	Unit Price	Total Amount
			Foreign Price	Unit Price	Amount				
1. Excavation (Canal)	m3	167300.0	1.1		184030.0	1.2	200750.0	2.3	384780.0
2. Embankment (Canal)	m3	33500.0	1.4		46900.0	.9	30150.0	2.3	77050.0
3. Disposal of Surplus Soil	m3	133000.0	1.5		200700.0	.9	120420.0	2.4	321120.0
4. Related Structure									
(1) Drop Structure Type IV	Unit	1.0	5251.1		5251.1	4242.5	4242.5	9493.7	9493.7
5. Others	L.S.				21844.1		17778.6		39622.7
Sub-Total [1.-5.]					459725.2		373351.2		832075.3
6. O.H.	%	30.0			137617.6		112005.4		249622.9
Sub-Total [1.-6.]					596342.7		485356.5		1081599.2
7. Miscellaneous					57.3		43.5		100.8
Total					596400.0		485400.0		1081600.0

Table G-I-15

## AGUAN PHASE I Road Works (I) Right Aguan

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Unit Price	Total Amount
			Foreign Price	Local Price	Currency Amount		
<b>1. Access Road</b>							
(1) Stripping	m3	104000.0	1.6	166400.0	93600.0	2.5	250000.0
(2) Road Body	m3	320000.0	6.6	2175000.0	1792000.0	12.4	3968000.0
(3) Gravel Surfacing	m2	95000.0	6.5	624000.0	152000.0	8.5	816000.0
(4) Bridge (RC Type I)	Unit	12.0	11912.3	141747.5	119758.0	21792.1	251505.4
(5) Bridge (RC Type V)	Unit	4.0	19655.3	79473.2	67504.9	35769.5	147078.1
(6) Others	L.S.			159381.0	113248.1		272529.2
(7) O.H.	%	30.0		3347001.9	2378211.0		5725212.7
Sub-Total [(1)-(6)]				1004100.5	713483.3		1717553.8
Sub-Total [1.]				4351102.3	3091674.3		7442776.6
<b>2. In-Farm Road</b>							
(1) Stripping	m3	43355.0	1.6	69384.0	39028.5	2.5	106412.5
(2) Road Bed	m3	99120.0	6.6	674016.0	555072.0	12.4	1729088.0
(3) Gravel Surfacing	m2	92600.0	6.5	555900.0	165200.0	8.5	702100.0
(4) Bridge (RC Type I)	Unit	1.0	11812.3	11812.3	9979.8	21792.1	21792.1
(5) Bridge (RC Type II)	Unit	8.0	8684.9	69478.9	57910.4	15233.7	127389.4
(6) Bridge (RC Type III)	Unit	11.0	6660.5	72165.6	59312.2	12007.1	132077.7
(7) Bridge (RC Type IV)	Unit	7.0	4845.4	33924.7	27420.6	6753.6	61345.3
(8) Others	L.S.			73384.1	45725.2		119110.3
(9) O.H.	%	30.0		1541055.5	960249.8		2501315.2
Sub-Total [(1)-(8)]				462319.6	286074.9		750394.5
Sub-Total [2.]				2003385.1	1248324.7		3251709.8
<b>3. Existing Road</b>							
(1) Gravel Surfacing	m2	120400.0	5.5	782600.0	240800.0	8.5	1023400.0
(2) O.H.	%	30.0		234780.0	72240.0		307020.0
Sub-Total [3.]				1017380.0	313040.0		1330420.0
Sub-Total [1.-3.]				7371857.4	4653039.0		12024905.4
4. Miscellaneous				32.6	61.0		93.6
Total				7371900.0	4653100.0		12025000.0

Table G-I-16

## AGUAN PHASE II Road Works (I) Right Aquan

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Price	Local Currency Amount	Unit Price	Total Amount
			Foreign Unit Price	Foreign Currency Amount	Unit Price				
1. Access Road									
(1) Stripping	m3	137475.0	1.6	219950.0	.9	123727.5	2.5	343567.5	
(2) Road Body	m3	423000.0	6.8	2876400.0	5.6	2352900.0	12.4	5235200.0	
(3) Gravel Surfacing	m2	128900.0	6.5	824800.0	2.0	253800.0	8.5	1078850.0	
(4) Bridge (RC Type I)	Unit	19.0	11812.3	224433.5	9979.9	188515.9	21792.1	414050.3	
(5) Bridge (RC Type V)	Unit	3.0	19869.3	59604.9	16901.2	50703.7	36759.5	110308.6	
(6) Others	L.S.			210252.4		149332.4		359594.8	
(7) O.H.	%	30.0		4415510.9		3135980.3		7551491.2	
Sub-Total [(1)-(6)]				1324553.3		940794.1		2265447.4	
Sub-Total [1.]				5720154.1		4075774.4		9816938.5	
2. In-Farm Road									
(1) Stripping	m3	44940.0	1.6	71904.0	.9	40445.0	2.5	112350.0	
(2) Road Bed	m3	102720.0	6.8	696495.0	5.6	575232.0	12.4	1273728.0	
(3) Gravel Surfacing	m2	85600.0	6.5	556400.0	2.0	171200.0	8.5	727600.0	
(4) Bridge (RC Type II)	Unit	3.0	8684.9	26054.6	7239.8	21715.4	15933.7	47771.0	
(5) Bridge (RC Type III)	Unit	7.0	6560.5	45923.5	5445.6	36125.9	12007.1	64048.5	
(6) Bridge (RC Type IV)	Unit	7.0	4848.4	33924.7	3917.2	27420.6	6763.5	61343.3	
(7) Others	L.S.			292410.7		200505.1		492915.7	
(8) O.H.	%	30.0		1725113.5		1074647.0		2799780.5	
Sub-Total [(1)-(7)]				517534.0		322394.1		839939.2	
Sub-Total [2.]				2242647.5		1397041.2		3639688.7	
3. Existing Road									
(1) Gravel Surfacing	m2	235400.0	6.5	1530100.0	2.0	470800.0	8.5	2000900.0	
(2) O.H.	%	30.0		459030.0		141240.0		600270.0	
Sub-Total [3.]				1989130.0		612040.0		2501170.0	
Sub-Total [1.-3.]				9971941.6		6085855.6		15057757.2	
4. Miscellaneous				58.4		44.4		102.8	
Total				9972000.0		6095900.0		15057900.0	

Table G-I-17

## AGUAN PHASE II Road Works (II) Left Aguan

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Financial Cost			Total Amount
			Foreign Price	Unit Price	Local Price	Foreign Currency Amount	Local Currency Amount	Unit Price	
1. Excavation (Canal)	m3	24150.0	1.1	26555.0	1.2	28950.0	28950.0	23345.0	
2. Gravel Surfacing	m2	34500.0	6.5	224250.0	2.0	69000.0	69000.0	293250.0	
3. Related Structure	Set	54.0	1855.0	100170.0	367.0	19818.0	19818.0	119398.0	
(1) Culvert Type B	L.S.			55374.5		63653.5	63653.5	129238.2	
(2) Submerged Road	L.S.			84506.5		82031.3	82031.3	158537.9	
Rio Uchapa (L=104m)	L.S.			40370.4		39194.4	39194.4	75554.8	
Rio Yuca (L=134m)	L.S.			29021.5		204707.2	204707.2	495328.9	
Cda. El Terrero (L=64m)	L.S.			27071.8		15134.4	15134.4	42305.2	
Others	%	30.0		568508.5		317821.5	317821.5	886330.1	
4. O.H.	%			176352.5		95346.5	95346.5	265899.0	
Sub-Total [1.-4.]				739051.0		413158.1	413158.1	1152229.1	
5. D.H.	%			39.0		31.9	31.9	70.9	
Sub-Total [1.-5.]									
5. Miscellaneous				739100.0		413200.0	413200.0	1152300.0	
Total									

Table G-I-18

## AGUAN PHASE I Land Reclamation

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Financial Cost			Total Amount
			Foreign Price	Unit Price	Local Price	Foreign Currency Amount	Local Currency Amount	Unit Price	
1. Level I	ha	4429.0	719.0	3184451.0	411.0	1820319.0	1820319.0	5004770.0	
(1) Land Reclamation (Gross)	L.S.			159222.5		91015.0	91015.0	250239.5	
(2) Others	%			3343673.5		1911334.9	1911334.9	525008.5	
Sub-Total [(1)-(2)]		30.0		1003102.1		573400.5	573400.5	1576502.5	
(3) D.H.	%			4346775.5		2484735.4	2484735.4	6931511.0	
Sub-Total [1.]									
2. Level II	ha	743.0	1030.0	755230.0	509.0	452487.0	452487.0	1217777.0	
(1) Land Reclamation (Bush)	L.S.			36264.5		22524.4	22524.4	6088.9	
(2) Others	%			803554.5		475111.3	475111.3	1276555.9	
Sub-Total [(1)-(2)]		30.0		241056.3		142533.4	142533.4	383599.8	
(3) D.H.	%			1044520.8		517544.8	517544.8	1552265.6	
Sub-Total [2.]				5391395.3		3102390.2	3102390.2	8493775.7	
Sub-Total [1.-2.]				3.5		19.8	19.8	23.3	
3. Miscellaneous				5391400.0		3102400.0	3102400.0	8493800.0	
Total									



Table G-I-19

## AGUAN PHASE II Land Reclamation

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Total Amount
			Foreign Price	Currency Amount	Local Price	
1. Level I						
(1) Land Reclamation (Gross)	ha	4582.0	719.0	3366338.0	411.0	5390550.0
(2) Others	L.S.			166317.9		264533.0
Sub-Total [(1)-(2)]				3534675.9		5995193.0
(3) O.H.	%	30.0		1060402.8		1556557.9
Sub-Total [(1.)				4595078.7		7221750.9
2. Level II						
(1) Land Reclamation (Bush)	ha	415.0	1030.0	427450.0	609.0	690195.0
(2) Others	L.S.			21372.5		34009.3
Sub-Total [(1)-(2)]				448822.5		714194.2
(3) O.H.	%	30.0		134546.7		214288.3
Sub-Total [(2.)				583469.2		928482.5
Sub-Total [(1.-2.)				5179547.9		8150203.4
3. Miscellaneous				52.1	44.5	96.6
Total				5178500.0		8150300.0

Table G-I-20

## AGUAN PHASE I O/M Equipment

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Total Amount
			Foreign Price	Currency Amount	Local Price	
1. Bulldozer (15t,141HP)	Unit	1.0	144200.0	144200.0	0.0	144200.0
2. Back Hoe (0.5m <sup>3</sup> ,102HP)	Unit	2.0	159300.0	318600.0	0.0	318600.0
3. Motor Grader (3.7m,103HP)	Unit	1.0	100000.0	100000.0	0.0	100000.0
4. Drag Line (0.6-0.8m <sup>3</sup> )	Unit	1.0	305000.0	305000.0	0.0	305000.0
5. Dump Truck (8t)	Unit	6.0	55000.0	330000.0	0.0	330000.0
Total				1195800.0	0.0	1195800.0

Table G-I-21

AGUAN PHASE I CASE 1 Administration Cost

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Total Amount
			Foreign Currency Amount	Local Currency Amount	Total Amount	
	Unit Price	Unit Price	Unit Price	Unit Price	Unit Price	Unit Price
1. Project Director	M/M	84.0	0.0	3000.0	252000.0	252000.0
2. Staff	M/M	420.0	0.0	2500.0	1050000.0	1050000.0
3. Driver	M/M	230.0	0.0	1500.0	345000.0	345000.0
4. Postage	L.S.		0.0		7000.0	7000.0
5. Others	L.S.		0.0		5000.0	5000.0
Total			0.0		1550000.0	1550000.0

Table G-I-22

AGUAN PHASE I CASE 1 Engineering Service

(Cost Unit : 1000Lps)

Description	Unit	Quantity	Financial Cost			Total Amount
			Foreign Currency Amount	Local Currency Amount	Total Amount	
	Unit Price	Unit Price	Unit Price	Unit Price	Unit Price	Unit Price
1. Detailed Design (Included Overseas Trainings)	L.S.		4015.0		345.0	4360.0
2. Supervision	L.S.		7575.0		815.0	8390.0
Total			11590.0		1150.0	12750.0

Table G-I-23

## AGUAN PHASE I CASE 2 Administration Cost

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Total Amount
			Foreign Price	Local Price	Unit Price	
1. Project Director	M/M	60.0	0.0	3000.0	180000.0	180000.0
2. Staff	M/M	300.0	0.0	2500.0	750000.0	750000.0
3. Driver	M/M	160.0	0.0	1500.0	240000.0	240000.0
4. Postage	L.S.		0.0		5000.0	5000.0
5. Others	L.S.		0.0		5000.0	5000.0
Total			0.0		1180000.0	1180000.0

Table G-I-24

## AGUAN PHASE II CASE 2 Administration Cost

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Total Amount
			Foreign Price	Local Price	Unit Price	
1. Project Director	M/M	35.0	0.0	3000.0	108000.0	108000.0
2. Staff	M/M	180.0	0.0	2500.0	450000.0	450000.0
3. Driver	M/M	108.0	0.0	1500.0	162000.0	162000.0
4. Postage	L.S.		0.0		5000.0	5000.0
5. Others	L.S.		0.0		5000.0	5000.0
Total			0.0		730000.0	730000.0

Table G-I-25

AGUAN PHASE I CASE 2 Engineering Service

(Cost Unit : 1000Lps)

Description	Unit	Quantity	Financial Cost			Local Currency Amount	Total Amount
			Unit Price	Foreign Currency Amount	Unit Price		
1. Detailed Design (Included Overseas Training)	L.S.			3520.0		305.0	3825.0
2. Supervision	L.S.			4260.0		425.0	4705.0
Total				7800.0		750.0	8530.0

Table G-I-26

AGUAN PHASE II CASE 2 Engineering Service

(Cost Unit : 1000Lps)

Description	Unit	Quantity	Financial Cost			Local Currency Amount	Total Amount
			Unit Price	Foreign Currency Amount	Unit Price		
1. Detailed Design (Included Overseas Training)	L.S.			248.0		27.0	275.0
2. Supervision	L.S.			4100.0		425.0	4525.0
Total				4348.0		452.0	4800.0

II Unit Price

Table G-II-1

## UNIT PRICE

1

(Cost Unit : Lps)

Description	Unit	Unit Price		Total	Remarks
		Local	Foreign		
1. Excavation (River)	m <sup>3</sup>	5.0	5.5	8.5	Machine
2. Excavation (Canal)	m <sup>3</sup>	1.2	1.1	2.3	Machine
3. Excavation (Structure)	m <sup>3</sup>	1.4	1.3	2.7	Machine
4. Embankment (Carried)	m <sup>3</sup>	5.5	5.5	12.4	For Road L=7.0km
5. Backfill (Structure)	m <sup>3</sup>	7.0	7.0	10.5	
6. Stripping	m <sup>2</sup>	1.5	1.5	3.0	
7. Leveling Concrete	m <sup>2</sup>	50.5	57.2	118.1	
8. Plain Concrete	m <sup>2</sup>	55.0	43.2	108.2	
9. Reinforced Concrete	m <sup>2</sup>	104.0	104.0	208.0	
10. Mas Concrete	m <sup>2</sup>	74.0	52.0	126.0	
11. Mortar (1:3)	m <sup>2</sup>	112.0	56.0	168.0	Without Shooting
12. Rubble Foundation	m <sup>2</sup>	5.7	2.3	8.0	
13. Frame Works (Level)	m <sup>2</sup>	15.2	17.3	32.5	
14. Frame Works (Slope)	m <sup>2</sup>	50.1	41.5	91.6	
15. Stone Pitching (s=1:2)	m <sup>2</sup>	11.5	6.5	18.0	
16. Stone Masonry (s=1:0.3)	m <sup>2</sup>	35.1	35.1	70.2	
17. Land Reclamation (Grass)	ha	73.0	103.0	176.0	
18. Land Reclamation (Bush)	ha	103.0	130.0	233.0	
19. Culvert Type A	Set	130.0	185.0	315.0	Corrugated Pipe 500mm
20. Culvert Type B	Set	185.0	275.0	460.0	Corrugated Pipe 800mm
21. Culvert Type C	Set	275.0	365.0	640.0	Corrugated Pipe 1000mm
22. Gravel Surfacing	m <sup>2</sup>	2.0	6.5	8.5	
23. Concrete Pipe (400mm)	m	24.8	35.7	60.5	
24. Concrete Pipe (500mm)	m	50.0	73.3	123.3	
25. Concrete Pipe (600mm)	m	74.3	108.8	183.1	
26. Concrete Pipe (1000mm)	m	115.0	170.4	285.4	
27. Concrete Pipe (1200mm)	m	159.1	254.2	393.3	
28. Form	m <sup>2</sup>	9.5	25.5	35.0	
29. Embankment (Canal)	m <sup>3</sup>	9.9	1.4	11.3	
30. Disposal of Surplus Soil	m <sup>3</sup>	1.5	1.5	3.0	
31. R.C. Pile (300mm (s=5m))	Unit	80.0	155.0	235.0	
32. Road Bed	m <sup>2</sup>	5.5	6.8	12.4	
33. Road Bed	m <sup>2</sup>	5.5	6.8	12.4	
34. Gate (1.4x1.0)	Unit	140.0	1581.0	1921.0	
35. Gate (1.7x1.4)	Unit	140.0	2021.0	2861.0	
36. Gate (0.5x0.5)	Unit	140.0	1205.0	1685.0	
37. Gate (1.2x0.9)	Unit	140.0	1358.0	1898.0	
38. Gate (1.5x1.0)	Unit	140.0	1655.0	2295.0	
39. Gate (1.7x1.5)	Unit	140.0	2181.0	3021.0	
40. Gate (2.25x1.25)	Unit	140.0	2481.0	3421.0	
41. Gate (1.7x1.2)	Unit	140.0	1926.0	2666.0	
42. Gate (1.5x1.5)	Unit	140.0	2031.0	2811.0	
43. Gate (2.0x1.0)	Unit	140.0	2031.0	2811.0	
44. Embankment (Labor)	m <sup>2</sup>	1.1	2.2	3.3	
45. Road for Construction	m <sup>2</sup>	2.0	6.5	8.5	
46. Concrete Pipe (200mm)	m	10.7	15.5	26.2	
47. Dewatering	day	128.0	68.0	196.0	
48. Temporary Pump Station	Unit	30.3	55.3	85.6	

III Summary of Bill of Quantity

Table G-III-1

Bill of Quantity (i)

Description	Unit	Quantity		
		Area I	Area II	Total
Stripping	m <sup>3</sup>	147365	182415	329780
Excavation (River)	m <sup>3</sup>	115441	66912	182353
Excavation (Canal)	m <sup>3</sup>	886326	635922	1522248
Excavation (Structure)	m <sup>3</sup>	1108	1251	2359
Embankment (Canal)	m <sup>3</sup>	105665	104688	210353
Embankment (Labor)	m <sup>3</sup>	18700	16940	35640
Backfill (Structure)	m <sup>3</sup>	1582	5101	6783
Disposal of Surplus Soil	m <sup>3</sup>	761387	491744	1253131
Road Body	m <sup>3</sup>	320000	423000	743000
Road Bed	m <sup>3</sup>	99120	102720	201840
Gravel Surfacing	m <sup>2</sup>	299000	482400	781400
Land Reclamation (Grass)	ha	4429	9364	13793
Land Reclamation (Bush)	ha	743	830	1573
Leveling Concrete	m <sup>3</sup>	512	737	1249
Mass Concrete	m <sup>3</sup>	4030	3200	7230
Rainforced Concrete	m <sup>3</sup>	2754	4002	6756
Stone Masonry (s=1:0.3)	m <sup>2</sup>	0	3132	3132
Frame Works (Level)	m <sup>2</sup>	4889	7084	11973
Frame Works (Slope)	m <sup>2</sup>	16140	8554	24694
Stone Pitching (s=1:2)	m <sup>2</sup>	23	5	28
Road for Construction	m <sup>2</sup>	12000	16000	28000

Table G-III-2

## Bill of Quantity (ii)

Description	Unit	Quantity		
		Area I	Area II	Total
Concrete Pipe (200mm)	m	6	6	12
Concrete Pipe (400mm)	m	17	17	33
Concrete Pipe (600mm)	m	50	30	80
Concrete Pipe (800mm)	m	50	50	100
Concrete Pipe (1000mm)	m	0	193	193
Concrete Pipe (1200mm)	m	50	30	80
R.C. Pile (300mm $\times$ 5m)	Unit	30	27	57
Gate (0.6*0.6)	Unit	1	1	2
Gate (1.2*0.9)	Unit	1	1	2
Gate (1.5*1.0)	Unit	1	1	2
Gate (1.5*1.5)	Unit	0	2	2
Gate (1.7*1.2)	Unit	1	1	2
Gate (1.7*1.4)	Unit	2	2	4
Gate (1.7*1.5)	Unit	4	0	4
Gate (2.0*1.0)	Unit	0	2	2
Gate (2.25*1.25)	Unit	2	0	2



Table G-III-3

## Bill of Quantity (iii)

Description	Unit	Quantity		
		Area I	Area II	Total
Siphon Type II-(1)	Unit	5	0	5
Siphon Type II-(2)	Unit	4	3	7
Siphon Type III-(1)	Unit	4	2	6
Siphon Type III-(2)	Unit	10	4	14
Siphon Type IV-(1)	Unit	6	0	6
Siphon Type IV-(2)	Unit	2	1	3
Box Culvert Type II	Unit	1	2	3
Box Culvert Type III	Unit	2	1	3
Culvert (Corrugate Pipe)	Set	0	54	54
Check Gate Type II	Unit	2	2	4
Check Gate Type III	Unit	4	3	7
Check Gate Type IV	Unit	3	2	5
Drop Structure Type II	Unit	4	0	4
Drop Structure Type III	Unit	26	0	26
Drop Structure Type IV	Unit	59	1	60
Chute Type III	Unit	0	1	1
Chute Type IV	Unit	1	1	2
Diversion Work	Unit	42	69	111
Waste Way Work	Unit	3	4	7
Bridge (RC Type I)	Unit	13	19	32
Bridge (RC Type II)	Unit	8	3	11
Bridge (RC Type III)	Unit	11	7	18
Bridge (RC Type IV)	Unit	7	14	21
Bridge (RC Type V)	Unit	4	3	7
Tractor Passage	Unit	515	435	950
Aqueduct	Unit	2	6	8
Farm Pond	Unit	51	13	64
Submerged Road	Set	0	3	3

IV Cost Breakdown

Table G-IU-1 Irrigation System Diversion Work

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Currency Amount	Unit Price	Total Amount
			Unit Price	Foreign Currency Amount	Unit Price			
1. Reinforced Concrete Form	m <sup>3</sup>	5.0	104.0	520.0	104.0	208.0	1040.0	
2. Leveling Concrete	m <sup>2</sup>	17.0	25.5	433.5	9.5	35.0	595.0	
3. Concrete Pipe (400mm)	m <sup>3</sup>	1.0	57.2	57.2	60.9	118.1	118.1	
4. Gate (0.5x0.5)	m	5.0	35.7	178.5	24.8	60.5	302.5	
5. Others	Unit	1.0	12050.0	12050.0	140.0	12200.0	12200.0	
Total	L.S.			662.5	140.0		712.8	
				13911.7		1055.7	14958.4	

Table G-IU-2 Irrigation System Waste Way Work

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Currency Amount	Unit Price	Total Amount
			Unit Price	Foreign Currency Amount	Unit Price			
1. Reinforced Concrete Form	m <sup>3</sup>	2.0	104.0	208.0	104.0	208.0	416.0	
2. Concrete Pipe (400mm)	m <sup>2</sup>	10.0	25.5	255.0	9.5	35.0	350.0	
3. Gate (0.5x0.5)	m	7.0	35.7	249.9	24.8	60.5	423.5	
4. Others	L.S.			35.6		23.8	59.5	
Total				748.5		500.4	1249.0	

Table G-IV-3 Irrigation System Siphon Type II-(1)

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Total Amount
			Foreign Currency Amount	Local Currency Amount	Unit Price	
1. Reinforced Concrete	m3	58.0	104.0	7072.0	104.0	7072.0
2. Form	m2	78.0	25.5	1983.0	9.5	741.0
3. Leveling Concrete	m3	4.0	57.2	228.8	60.9	243.6
4. Concrete Pipe (1200mm)	m	20.0	234.2	4684.0	159.1	3182.0
5. Others	L.S.			598.7		561.9
Total				14672.5		11800.5
						26473.0

Table G-IV-4 Irrigation System Siphon Type II-(2)

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Total Amount
			Foreign Currency Amount	Local Currency Amount	Unit Price	
1. Reinforced Concrete	m3	90.0	104.0	9360.0	104.0	9360.0
2. Form	m2	117.0	25.5	2983.5	9.5	1111.5
3. Leveling Concrete	m3	6.0	57.2	343.2	60.9	365.4
4. Concrete Pipe (1200mm)	m	30.0	234.2	7026.0	159.1	4773.0
5. Others	L.S.			985.5		760.5
Total				20598.3		16390.4
						37088.7

Table G-IV-5 Irrigation System Siphon Type III-(1)

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost				Total Amount
			Unit Price	Foreign Currency Amount	Local Currency Amount	Unit Price	
1. Reinforced Concrete	m3	46.0	104.0	4784.0	4784.0	208.0	9568.0
2. Form	m2	64.0	25.5	1632.0	808.0	35.0	2240.0
3. Levelling Concrete	m3	4.0	57.2	228.8	243.6	119.1	472.4
4. Concrete Pipe (900mm)	m	20.0	109.8	2196.0	1486.0	184.1	3682.0
5. Others	L.S.			442.0	356.1		798.1
Total				9282.8	7477.7		16760.5

Table G-IV-6 Irrigation System Siphon Type III-(2)

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost				Total Amount
			Unit Price	Foreign Currency Amount	Local Currency Amount	Unit Price	
1. Reinforced Concrete	m3	62.0	104.0	6448.0	6448.0	208.0	12896.0
2. Form	m2	94.0	25.5	2397.0	893.0	35.0	3290.0
3. Levelling Concrete	m3	5.0	57.2	286.0	304.5	118.1	590.5
4. Concrete Pipe (900mm)	m	30.0	109.8	3294.0	2229.0	184.1	5523.0
5. Others	L.S.			621.2	493.7		1115.0
Total				13046.3	10368.2		23414.5

Table G-IV-7 Irrigation System Siphon Type IV-(1)

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost				Total Amount
			Unit Price	Foreign Currency Amount	Local Price	Local Currency Amount	
1. Reinforced Concrete	m <sup>2</sup>	31.0	104.0	3224.0	104.0	3224.0	5438.0
2. Form	m <sup>2</sup>	50.0	25.5	1275.0	9.5	475.0	1750.0
3. Leveling Concrete	m <sup>3</sup>	3.0	57.2	171.6	60.9	182.7	354.3
4. Concrete Pipe (500mm)	m	20.0	73.3	1466.0	50.0	1000.0	2466.0
5. Others	L.S.			306.8		244.1	550.9
Total				6433.4		5125.8	11559.2

Table G-IV-8 Irrigation System Siphon Type IV-(2)

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost				Total Amount
			Unit Price	Foreign Currency Amount	Local Price	Local Currency Amount	
1. Reinforced Concrete	m <sup>2</sup>	42.0	104.0	4368.0	104.0	4368.0	8736.0
2. Form	m <sup>2</sup>	75.0	25.5	1912.5	9.5	712.5	2625.0
3. Leveling Concrete	m <sup>3</sup>	4.0	57.2	228.8	60.9	243.6	472.4
4. Concrete Pipe (500mm)	m	30.0	73.3	2199.0	50.0	1500.0	3699.0
5. Others	L.S.			435.4		341.2	776.6
Total				9143.7		7165.3	16309.0

Table G-IV-9 Irrigation System Main Canal Box Culvert Type II

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Total Amount
			Foreign Price	Local Price	Unit Price	
1. Reinforced Concrete	m3	55.3	104.0	104.0	5751.2	11502.4
2. Form	m2	127.2	25.5	9.5	3243.6	4452.0
3. Leveling Concrete	m3	8.9	57.2	60.9	509.1	1051.1
4. Others	L.S.				475.2	850.3
Total					9979.1	17955.6

Table G-IV-10 Irrigation System Main Canal Box Culvert Type III

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Total Amount
			Foreign Price	Local Price	Unit Price	
1. Reinforced Concrete	m3	35.8	104.0	104.0	3827.2	7654.4
2. Form	m2	112.4	25.5	9.5	2866.2	3934.0
3. Leveling Concrete	m3	6.4	57.2	60.9	386.1	755.8
4. Others	L.S.				353.0	617.2
Total					7412.5	12961.5

Table G-10-11 Irrigation System Main Canal Check Gate Type II

(Cost Unit : Lps)

Description	Unit	Quantity	Financialist Cost			Local Currency Amount	Local Price	Financialist Cost		Total Amount
			Foreign Price	Unit Price	Amount			Unit Price	Amount	
1. Reinforced Concrete	m3	72.0	104.0	7488.0	7488.0	104.0	7488.0	208.0	14976.0	
2. Form	m2	168.4	25.5	4294.2	1599.8	9.5	1599.8	35.0	5894.0	
3. Leveling Concrete	m3	9.0	57.2	514.8	548.1	50.9	548.1	118.1	1062.9	
4. Gate (1.7*1.4)	Unit	2.0	20210.0	40420.0	280.0	140.0	280.0	20350.0	40700.0	
5. Others	L.S.			2635.9	495.8		495.8		3131.5	
Total				55352.8	10411.7		10411.7		65764.5	

Table G-10-12 Irrigation System Main Canal Check Gate Type III

(Cost Unit : Lps)

Description	Unit	Quantity	Financialist Cost			Local Currency Amount	Local Price	Financialist Cost		Total Amount
			Foreign Price	Unit Price	Amount			Unit Price	Amount	
1. Reinforced Concrete	m3	17.2	104.0	1788.8	1788.8	104.0	1788.8	208.0	3577.6	
2. Form	m2	34.7	25.5	884.9	329.7	9.5	329.7	35.0	1214.5	
3. Leveling Concrete	m3	3.9	57.2	223.1	237.5	50.9	237.5	118.1	450.5	
4. Gate (1.7*1.2)	Unit	1.0	19250.0	19250.0	140.0	140.0	140.0	19400.0	19400.0	
5. Others	L.S.			1107.8	124.8		124.8		1232.6	
Total				23254.6	2620.6		2620.6		25885.3	



Table G-10-13 Irrigation System Main Canal Check Gate Type IV

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Currency Amount	Unit Price	Total Amount
			Foreign Price	Unit Price	Local Price			
1. Reinforced Concrete	m3	13.6	104.0	1414.4	104.0	1414.4	208.0	2828.8
2. Form	m2	28.3	25.5	721.7	9.5	268.9	35.0	990.5
3. Leveling Concrete	m3	3.4	57.2	194.5	60.9	207.1	118.1	401.5
4. Gate (1.2x0.9)	Unit	1.0	13560.0	13560.0	140.0	140.0	13700.0	13700.0
5. Others	L.S.			794.5		101.5		895.0
Total				16685.1		2131.9		19816.9

Table G-10-14 Irrigation System Main Canal Chute Type III

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Currency Amount	Unit Price	Total Amount
			Foreign Price	Unit Price	Local Price			
1. Reinforced Concrete	m3	32.3	104.0	3359.2	104.0	3359.2	208.0	6718.4
2. Form	m2	152.9	25.5	4154.0	9.5	1547.5	35.0	5701.5
3. Leveling Concrete	m3	7.6	57.2	434.7	60.9	462.8	118.1	897.5
4. Others	L.S.			397.4		268.5		665.9
Total				8345.3		5639.1		13983.3

Table G-IU-15 Irrigation System Main Canal Chute Type IV

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Currency Amount	Local Price	Total Amount
			Foreign Currency Amount	Unit Price	Local Price			
1. Reinforced Concrete	m3	25.2	2620.8	104.0	2620.8	208.0	5241.6	
2. Form	m2	119.4	3044.7	9.5	1134.3	35.0	4179.0	
3. Leveling Concrete	m3	7.0	400.4	60.9	426.3	118.1	826.7	
4. Others	L.S.		303.3		209.1		512.4	
Total			6369.2		4390.5		10759.7	

Table G-IU-16 Pump Station No.1 Suction Sump

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Currency Amount	Local Price	Total Amount
			Foreign Currency Amount	Unit Price	Local Price			
1. Excavation (Structure)	m3	898.0	1347.0	1.5	1347.0	1.4	2604.2	
2. Backfill (Structure)	m3	180.0	630.0	3.5	630.0	7.0	1890.0	
3. Disposal of Surplus Soil	m3	718.0	1077.0	1.5	1077.0	.8	1723.2	
4. Reinforced Concrete	m3	491.0	51054.0	104.0	51054.0	208.0	102128.0	
5. Form	m2	1960.0	49960.0	25.5	49960.0	35.0	68600.0	
6. Leveling Concrete	m3	47.0	2688.4	57.2	2688.4	118.1	5590.7	
7. R.C. Pile (300mm l=5m)	Unit	30.0	4550.0	155.0	4550.0	235.0	7050.0	
Sub-Total [1.-7.]			111436.4		78109.7		189546.1	
8. O.H.	%	5.0	5571.8		3905.5		9477.3	
Total			117008.2		82015.2		199023.4	

Table G-IV-17 Pump Station No.1 Discharge Sump

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Total Amount
			Foreign Price	Local Price	Unit Price	
			Unit Price	Amount	Amount	Amount
1. Excavation (Structure)	m3	210.0	1.5	1.4	294.0	509.0
2. Backfill (Structure)	m3	42.0	3.5	7.0	294.0	441.0
3. Disposal of Surplus Soil	m3	168.0	1.5	.9	151.2	403.2
4. Reinforced Concrete	m3	29.0	104.0	104.0	3016.0	6032.0
5. Form	m2	120.0	25.5	9.5	1140.0	4200.0
6. Leveling Concrete	m3	8.0	57.2	60.9	487.2	944.8
Sub-Total [1.-6.]					5382.4	12630.0
7. O.H.	%	30.0	2174.3		1514.7	3788.0
Total			9421.9		6997.1	16419.0

Table G-IV-18 Pump Station No.1 Pipe Line

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Total Amount
			Foreign Price	Local Price	Unit Price	
			Unit Price	Amount	Amount	Amount
1. Excavation (Canal)	m3	1556.0	1.1	1.2	1821.6	3808.8
2. Backfill (Structure)	m3	1450.0	3.5	7.0	5110.0	15330.0
3. Disposal of Surplus Soil	m3	195.0	1.5	.9	294.0	470.4
4. Steel Pipe 1000mm, 250m	L.S.				250000.0	250000.0
5. Flap Valve 1200mm	Unit	1.0	10000.0	0.0	10000.0	10000.0
6. Settling (Valve)	L.S.				1500.0	2000.0
Sub-Total [1.-6.]					259725.6	281609.2
7. O.H.	%	5.0	13436.3		644.2	14080.5
Total			282161.9		13527.8	295689.7

Table G-IV-19 Pump Station No.2 Suction Sump

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Financial Cost			Total Amount
			Unit Price	Foreign Currency Amount	Local Price	Unit Price	Local Currency Amount	Unit Price	
1. Excavation (Structure)	m <sup>3</sup>	1083.0	1.5	1524.5	1.4	1515.2	2.9	3140.7	
2. Backfill (Structure)	m <sup>3</sup>	217.0	3.5	759.5	7.0	1519.0	10.5	2278.5	
3. Disposal of Surplus Soil	m <sup>3</sup>	866.0	1.5	1299.0	.9	773.4	2.4	2078.4	
4. Reinforced Concrete	m <sup>3</sup>	223.0	104.0	23816.0	104.0	23816.0	208.0	47632.0	
5. Form	m <sup>2</sup>	916.0	25.5	23358.0	9.5	8702.0	35.0	32060.0	
6. Leveling Concrete	m <sup>3</sup>	37.0	57.2	2115.4	60.9	2253.3	118.1	4359.7	
7. R.C. Pile (300mm $\phi$ =5m)	Unit	27.0	155.0	4185.0	80.0	2160.0	235.0	5345.0	
Sub-Total [1.-7.]				57158.4		40745.9		97904.3	
D. D.H.	%	5.0		2857.9		2037.3		4895.2	
Total				60016.3		42783.2		102799.5	

Table G-IV-20 Pump Station No.2 Discharge Sump

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Financial Cost			Total Amount
			Unit Price	Foreign Currency Amount	Local Price	Unit Price	Local Currency Amount	Unit Price	
1. Excavation (Structure)	m <sup>3</sup>	158.0	1.5	232.0	1.4	235.2	2.9	487.2	
2. Backfill (Structure)	m <sup>3</sup>	34.0	3.5	119.0	7.0	238.0	10.5	357.0	
3. Disposal of Surplus Soil	m <sup>3</sup>	134.0	1.5	201.0	.9	120.6	2.4	321.6	
4. Reinforced Concrete	m <sup>3</sup>	31.0	104.0	3224.0	104.0	3224.0	208.0	6448.0	
5. Form	m <sup>2</sup>	124.0	25.5	3152.0	9.5	1178.0	35.0	4340.0	
6. Leveling Concrete	m <sup>3</sup>	7.0	57.2	400.4	60.9	426.3	118.1	826.7	
Sub-Total [1.-6.]				7358.4		5422.1		12780.5	
7. D.H.	%	30.0		2207.5		1626.6		3834.2	
Total				9565.9		7048.7		16614.7	

Table G-IV-21 Drainage System Drop Structure Type II

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost				Total Amount
			Foreign Price	Local Price	Unit Price	Amount	
1. Reinforced Concrete	m3	51.4	104.0	104.0	208.0	12771.2	
2. Form	m2	115.7	25.2	9.5	35.0	4049.5	
3. Leveling Concrete	m3	7.2	57.2	60.9	118.1	850.3	
4. Stone Pitching (s=1:2)	m2	10.0	6.5	21.5	28.0	280.0	
5. Others	L.S.					897.6	
Total						18848.6	

Table G-IV-22 Drainage System Drop Structure Type III

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost				Total Amount
			Foreign Price	Local Price	Unit Price	Amount	
1. Reinforced Concrete	m3	46.1	104.0	104.0	208.0	9588.8	
2. Form	m2	92.6	25.5	9.5	35.0	3241.0	
3. Leveling Concrete	m3	5.5	57.2	60.9	118.1	649.5	
4. Stone Pitching (s=1:2)	m2	7.5	6.5	21.5	28.0	210.0	
5. Others	L.S.					584.5	
Total						14373.8	

Table G-IV-23 Drainage System Drop Structure Type IV

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Total Amount
			Unit Price	Foreign Currency Amount	Local Currency Amount	
1. Reinforced Concrete	m3	29.6	104.0	3078.4	3078.4	5155.8
2. Form	m2	65.6	25.5	1672.8	623.2	2296.0
3. Leveling Concrete	m3	3.8	57.2	217.4	231.4	448.8
4. Stone Pitching (s=1:2)	m2	5.0	6.5	32.5	107.5	140.0
5. Others	L.S.			250.1	202.0	452.1
Total				5251.1	4242.5	9493.7

Table G-IV-24 Secondary Canal Aqueduct

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Total Amount
			Unit Price	Foreign Currency Amount	Local Currency Amount	
1. Reinforced Concrete	m3	5.2	104.0	540.8	540.8	1081.6
2. Form	m2	26.4	25.5	673.2	250.8	924.0
3. Others	L.S.			60.7	39.6	100.3
Total				1274.7	831.2	2105.9

Table G-IV-25 Secondary Canal Farm Pond

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Currency Amount	Unit Price	Total Amount
			Foreign Price	Unit Price	Local Price			
1. Excavation (Canal)	m3	710.0	1.1	781.0	1.2	852.0	2.3	1533.0
2. Embankment (Canal)	m3	138.0	1.4	193.2	.9	124.2	2.3	317.4
3. Disposal of Surplus Soil	m3	572.0	1.5	858.0	.9	514.8	2.4	1372.8
4. Others	L.S.			91.6		74.5		166.2
Total				1923.8		1565.5		3489.4

Table G-IV-26 Secondary Canal Tractor Passage

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Currency Amount	Unit Price	Total Amount
			Foreign Price	Unit Price	Local Price			
1. Reinforced Concrete	m3	9.2	104.0	540.8	104.0	540.8	208.0	1081.6
2. Plain Concrete	m3	1.0	43.2	44.5	65.0	68.0	109.2	112.5
3. Concrete Pipe (400mm)	m	4.5	35.7	160.7	24.8	111.6	60.5	272.2
4. Concrete Pipe (200mm)	m	6.0	15.3	91.8	10.7	64.2	26.0	156.0
5. Others	L.S.			41.9		39.2		81.1
Total				879.6		823.8		1703.4

Table G-IU-27 Submerged Road (Left Side) Rio Uchepa (L=104m)

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Currency			Total Amount
			Unit Price	Foreign Currency Amount	Unit Price	Local Price	Local Currency Amount	Unit Price	
1. Excavation (River)	m3	728.0	5.5	4004.0	3.0	2184.0	8.5	6188.0	
2. Reinforced Concrete	m3	562.0	104.0	58448.0	104.0	58448.0	208.0	115896.0	
3. Others	L.S.			3122.6		3031.6		6154.2	
Total				65574.6		63663.6		129238.2	

Table G-IU-28 Submerged Road (Left Side) Rio Uyuca (L=134m)

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Currency			Total Amount
			Unit Price	Foreign Currency Amount	Unit Price	Local Price	Local Currency Amount	Unit Price	
1. Excavation (River)	m3	943.0	5.5	5186.5	3.0	2829.0	8.5	8015.5	
2. Reinforced Concrete	m3	724.0	104.0	75296.0	104.0	75296.0	208.0	150592.0	
3. Others	L.S.			4024.1		3906.3		7930.4	
Total				84506.6		82031.3		166537.9	



Table G-IV-29 Submerged Road (Left Side) Oda.E( Terrero (L=64m)

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Currency Amount	Local Price	Unit Price	Total Amount
			Foreign Currency Amount	Foreign Price	Unit Price				
1. Excavation (River)	m3	448.0	2464.0	5.5	3.0	1344.0	9.5	3808.0	
2. Reinforced Concrete	m3	346.0	35984.0	104.0	104.0	35984.0	208.0	71968.0	
3. Others	L.S.		1922.4			1856.4		3788.8	
Total			40370.4			39194.4		79564.8	

Table G-IV-30 Head Works (Middle Aguan) Temporary Works

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Currency Amount	Local Price	Unit Price	Total Amount
			Foreign Currency Amount	Foreign Price	Unit Price				
1. Dewatering Pump Station	day	240.0	16560.0	69.0	128.0	30720.0	128.0	47280.0	
2. Temporary Pump Station	Unit	4.0	225.2	56.3	30.3	121.2	86.6	346.4	
3. Excavation (River)	m3	8400.0	46200.0	5.5	3.0	25200.0	8.5	71400.0	
4. Road for Construction	m2	4000.0	26000.0	6.5	2.0	8000.0	8.5	34000.0	
5. Others	L.S.		4449.3			3202.1		7651.3	
Total			93434.5			67243.3		160677.7	

Table G-1U-31 Head Works (Jaswaca) Temporary Works

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Currency Amount	Local Price	Unit Price	Total Amount
			Unit Price	Foreign Currency Amount	Unit Price				
1. Dewatering	day	50.0	59.0	4140.0	128.0	7680.0	197.0	11820.0	
2. Temporary Pump Station	Unit	1.0	56.3	56.3	30.3	30.3	86.6	86.6	
3. Excavation (River)	m <sup>3</sup>	2800.0	5.5	15400.0	3.0	8400.0	8.5	23800.0	
4. Road for Construction	m <sup>2</sup>	4000.0	6.5	26000.0	2.0	8000.0	8.5	34000.0	
5. Others	L.S.		2279.8			1205.5		3485.3	
Total			47876.1			25315.8		73191.9	

Table G-1U-32 Siphon (Pte.Meme) Temporary Works

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Currency Amount	Local Price	Unit Price	Total Amount
			Unit Price	Foreign Currency Amount	Unit Price				
1. Dewatering	day	30.0	59.0	2070.0	128.0	3840.0	197.0	5910.0	
2. Temporary Pump Station	Unit	1.0	56.3	56.3	30.3	30.3	86.6	86.6	
3. Excavation (River)	m <sup>3</sup>	4200.0	5.5	23100.0	3.0	12600.0	8.5	35700.0	
4. Others	L.S.		1261.3			823.5		2084.8	
Total			26487.6			17293.8		43781.4	

Table G-10-33 Head Works (Upper Reach) Temporary Works

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Currency Amount	Local Currency Unit Price	Local Currency Amount	Unit Price	Total Amount
			Unit Price	Foreign Currency Amount	Financial Cost Amount					
1. Dewatering	day	240.0	59.0	15560.0	128.0	30720.0	197.0	47280.0		
2. Temporary Pump Station	Unit	4.0	56.3	225.2	30.3	121.2	86.6	346.4		
3. Excavation (River)	m3	5320.0	5.5	29260.0	3.0	15960.0	8.5	45220.0		
4. Road for Construction	m2	4000.0	6.5	26000.0	2.0	8000.0	8.5	34000.0		
5. Others	L.S.			3602.3		2740.1		5342.3		
Total				75647.5		57541.3		133188.7		

Table G-10-34 Head Works (Mam) Temporary Works

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Local Currency Amount	Local Currency Unit Price	Local Currency Amount	Unit Price	Total Amount
			Unit Price	Foreign Currency Amount	Financial Cost Amount					
1. Dewatering	day	60.0	69.0	4140.0	128.0	7680.0	197.0	11820.0		
2. Temporary Pump Station	Unit	1.0	56.3	56.3	30.3	30.3	86.6	86.6		
3. Excavation (River)	m3	2800.0	5.5	15400.0	3.0	8400.0	8.5	23800.0		
4. Road for Construction	m2	12000.0	6.5	78000.0	2.0	24000.0	8.5	102000.0		
5. Others	L.S.			4879.8		2005.5		6885.3		
Total				102476.1		42115.9		144591.9		

Table G-IV-35 Pumping System No. 1 (Phase I) Temporary Works

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Total Amount
			Unit Price	Foreign Currency Amount	Local Price	
1. Road for Construction	m <sup>2</sup>	4000.0	5.5	26000.0	2.0	34000.0
2. Others	L.S.			1300.0		1700.0
Total				27300.0	8400.0	35700.0

Table G-IV-36 Earth Lining (Replacement by Clay ; T=0.2m per 10m<sup>2</sup>)

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Total Amount
			Unit Price	Foreign Currency Amount	Local Price	
1. Lining Material (Clay) Excavation & Transportation (L=10km)	m <sup>3</sup>	2.1	7.2	15.1	7.0	28.8
2. Excavation for Replacement	m <sup>3</sup>	2.0	1.3	2.5	.6	3.8
3. Compaction (1) Machine (2) Operator (3) Laybor	day Manday Manday	.1 .1 1.0	10.0 0.0 0.0	1.0 0.0 1.0	2.0 25.0 7.0	1.2 2.5 7.0
4. Others Sub-Total {3.-3.}	L.S.			.9		10.7
Total				19.5	27.0	46.5

Table G-1U-37 Earth Lining (Replacement by Clay : T=0.2m per 10m2)

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Total Amount
			Foreign Price Unit Price	Local Price Unit Price	Currency Amount	
1. Lining Material (Clay) Excavation & Transportation (L=100km)	m3	2.1	45.8	50.8	106.7	202.9
2. Excavation for Replacement	m3	2.0	1.3	.6	1.3	3.8
3. Compaction	day	.1	10.0	2.0	.2	1.2
(1) (1) Machine	Manday	.1	0.0	25.0	2.5	2.5
(2) (3) Operator	Manday	1.0	0.0	7.0	7.0	7.0
(3) (3) Laybor	L.S.		1.0	9.7	9.7	10.7
Sub-Total [3.-3.]			5.0		5.9	10.9
4. Others						
Total			104.7		123.5	228.2

Table G-1U-38 Concrete Lining (Plain Concrete : T=0.2m per 10m2)

(Cost Unit : Lps)

Description	Unit	Quantity	Financial Cost			Total Amount
			Foreign Price Unit Price	Local Price Unit Price	Currency Amount	
1. Lining Material (Plain Concrete)	m3	2.0	43.2	66.0	132.0	218.4
2. Form	m2	5.0	25.5	9.5	47.5	175.0
3. Others	L.S.				9.0	19.7
Total			224.6		188.5	413.1



## **APPENDIX H: PROJECT EVALUATION**





## I. PROJECT EVALUATION

Factors used in the appraisal are explained here. Some of them are in the notes of tables.

- (i) Project Life is set to 40 years including construction period. Useful life of the headwork is forty years. Channels and roads will be maintained annually so that their useful lives can be extended. Some of the facilities like pumping station will be replaced during the project life according to their life period.
- (ii) Shadow exchange rate is set to 2.5 lempiras a dollar. This was the prevailed exchange rate in the free market of Honduras during the latter part of 1984, against the official rate of 2 lempiras per dollar.
- (iii) Shadow wage rate is set to 0.5.
- (iv) Financial farm gate prices of the agricultural product are given in Chapter 4. The economic farm gate prices of rice, maize, soya bean, cacao and orange are calculated from probable 1995 world market price forecasted by the World Bank.

The following tables are the backup data for the main report. Economic unit prices of other crops except pineapple are assumed to be equal to their financial costs.

Table H-1 Planned Crop Pattern (i) AREA I

(Lempira in 1984 price)

CROP	YIELD t/ha	UNIT Lp/t	PRICE Lp/ha	COST Lp/ha	IN(*1) ha	AREA I		TOTAL ha	GROSS INC. Lp	T. COST Lp	NET PROFIT Lp
						OUT(*2) ha	ha				
MAIZE	5.0	350.0	745.0	2501	0	2501		4376750	1853245	2513505	
BEANS	1.5	920.0	570.0	1398	0	1398		1929240	795850	1132390	
UPLAND RICE	5.0	450.0	1020.0	857	0	857		1971100	874140	1085950	
SOYABEANS	2.5	555.0	567.0	652	0	652		904650	434984	469766	
TOMATO	40.0	110.0	2662.0	326	0	326		1434400	857812	565588	
CASSAVA	20.0	160.0	2193.0	120	0	120		384000	253160	120840	
TARO	35.0	160.0	3264.0	109	0	109		610400	355775	254624	
Sub-Total				5963	0	5963		11610540	5455877	6154663	
PLANTAIN	35.0	150.0	1687.0	112	0	112		589000	188944	399056	
ORANGE	50.0	110.0	1701.0	0	71	71		390500	120771	269729	
COCOA	1.5	3245.0	1478.0	124	1126	1250		6084375	1847500	4236875	
MANGO	30.0	160.0	1102.0	0	163	163		782400	179526	602774	
PAPAYA	25.0	160.0	1230.0	27	0	27		108000	33210	74790	
OTHERS	12.0	80.0	15.0	9	0	8		7680	120	7560	
PINEAPPLE	25.0	360.0	2045.0	217	0	217		1953000	443765	1509235	
Sub-Total				489	1360	1848		9913955	2813936	7100019	
Total (IRR)				6451	1360	7811		21524495	8269813	13254582	
MAIZE	3.0	350.0	671.0			500		630000	402600	227400	
CASSAVA	9.0	160.0	800.0			400		576000	320000	256000	
TARO	16.0	160.0	1180.0			400		1024000	472000	552000	
PASTURE	10.0	15.6	45.0			0		0	0	0	
Sub-Total						1400		2230000	1194500	1035400	
ORANGE	25.0	110.0	900.0			400		1100000	360000	740000	
COCOA	7	3245.0	790.0			300		681450	237000	444450	
MANGO	15.0	160.0	950.0			200		480000	190000	290000	
Sub-Total						900		2261450	787000	1474450	
Total (NDN-1)						2300		4491450	1981600	2509850	
Grand Total				8751	1360	10111		26015845	10251413	15764532	

NOTE

(\*1) Inside the dyke

(\*2) Outside the dyke

Table H-1 Planned Crop Pattern (ii) Area II (Lempira in 1984 price)

CROP	YIELD t/ha	UNIT PRICE LP/t	COST LP/ha	Area II			GROSS INC. LP	T. COST LP	NET PROFIT LP
				IN(*1) ha	OUT(*2) ha	TOTAL ha			
MAIZE	5.0	350.0	745.0	1697	361(*3)	2058	3601500	1533210	2068290
BEANS	1.5	920.0	570.0	1175	0	1175	1821500	669750	951750
UPLAND RICE	5.0	450.0	1020.0	720	0	720	1656000	734400	921600
SOYABEANS	2.5	555.0	667.0	0	485(*4)	485	672938	323455	349443
TOMATO	40.0	110.0	2662.0	274	0	274	1209500	729388	476212
CASSAVA	20.0	160.0	2193.0	0	101	101	323200	221493	101707
TARO	35.0	160.0	3254.0	0	91	91	509600	297024	212576
Sub-Total				3866	1039	4904	9590338	4508760	5081578
PLANTAIN	35.0	150.0	1687.0	0	95	95	498750	160265	338485
ORANGE	50.0	110.0	1701.0	0	59	59	324500	100359	224141
COCOA	1.5	3245.0	1478.0	0	1050	1050	5110975	1551900	3558975
MANGO	30.0	160.0	1102.0	0	137	137	657600	150974	506626
PAPAYA	25.0	160.0	1230.0	0	23	23	92000	29290	63710
OTHERS	12.0	80.0	15.0	0	7	7	6720	105	6615
PINEAPPLE	25.0	360.0	2045.0	183	0	183	1647000	374235	1272765
Sub-Total				183	1371	1554	8337445	2366128	5971317
Total (IRR)				4049	2409	6458	17927783	6874868	11052895
MAIZE	3.0	350.0	671.0	0	0	0	0	0	0
CASSAVA	9.0	160.0	800.0	0	0	0	0	0	0
TARO	16.0	160.0	1180.0	0	0	0	0	0	0
PASTURE	10.0	16.6	45.0	2300	0	2300	391800	103500	278300
Sub-Total				2300	0	2300	391800	103500	278300
ORANGE	25.0	110.0	900.0	2400	0	2400	6600000	2160000	4440000
COCOA	.7	3245.0	790.0	0	0	0	0	0	0
MANGO	15.0	160.0	950.0	0	0	0	0	0	0
Sub-Total				2400	0	2400	6600000	2160000	4440000
Total (NON-I)				4700	0	4700	6991800	2263500	4718300
Grand Total				8749	2409	11158	24909583	9139388	15771195

NOTE

- (\*1) Inside the dyke
- (\*2) Outside the dyke
- (\*3) Annual flood damage, equivalent to crops from 45ha, is reduced (406%, 5%, 27)
- (\*4) Annual flood damage, equivalent to crops from 63ha, is reduced (548%, 5%, 23)

Table H-1 Planned Crop Pattern (iii) TOTAL AREA

(Lempira in 1984 price)

CROP	YIELD t/ha	UNIT PRICE		COST Lp/ha	IN(*1) ha	TOTAL AREA		TOTAL ha	GROSS INC. Lp	T. COST Lp	NET PROFIT Lp
		Lp/t	ha			OUT(*2) ha	ha				
MAIZE	5.0	350.0	745.0	4198	361(*3)	4559		7378250	3396495	4581795	
BEANS	1.5	920.0	570.0	2573	0	2573		3550740	1455510	2084130	
UPLAND RICE	5.0	480.0	1020.0	1577	0	1577		3627100	1608540	2018550	
SOYBEANS	2.5	555.0	667.0	652	485(*4)	1137		1577588	759379	819209	
TOMATO	40.0	110.0	2662.0	600	0	600		2640000	1597200	1042800	
CASSAVA	20.0	160.0	2193.0	120	101	221		707200	484653	222547	
TARO	35.0	160.0	3264.0	109	51	200		1120000	652800	467200	
Sub-Total				9829	1038	10867		21200879	9964537	11236241	
PLANTAIN	35.0	150.0	1687.0	112	95	207		1086750	349209	737541	
ORANGE	50.0	110.0	1701.0	0	130	130		715000	221130	493870	
COCOA	1.5	3245.0	1478.0	124	2176	2300		11195250	3398400	7795850	
MANGO	30.0	160.0	1102.0	0	300	300		1440000	330600	1109400	
PAPAYA	25.0	160.0	1230.0	27	23	50		200000	61500	138500	
OTHERS	12.0	80.0	15.0	8	7	15		14400	225	14175	
PINEAPPLE	25.0	360.0	2045.0	400	0	400		3600000	816000	2782000	
Sub-Total				671	2731	3402		18291400	5180064	13071336	
Total (IRR)				10500	3769	14269		39452278	15144701	24307577	
MAIZE	3.0	350.0	671.0	600		600		630000	402600	227400	
CASSAVA	9.0	160.0	800.0	400		400		575000	320000	255000	
TARO	16.0	160.0	1180.0	400		400		1024000	472000	552000	
PASTURE	10.0	16.6	45.0	2300		2300		381800	103500	278300	
Sub-Total				3700		3700		2611800	1298100	1313700	
ORANGE	25.0	110.0	900.0	2800		2800		7700000	2520000	5180000	
COCOA	.7	3245.0	790.0	300		300		681450	237000	444450	
MANGO	15.0	160.0	950.0	200		200		480000	150000	230000	
Sub-Total				3300		3300		8661450	2947000	5914450	
Total (NON-I)						7000		11473250	4245100	7228150	
Grand Total				17500	3769	21269		50929528	19389801	31535727	

NOTE

- (\*1) Inside the dyke
- (\*2) Outside the dyke
- (\*3) Annual flood damage, equivalent to crops from 45ha, is reduced (406%, 5%, 22)
- (\*4) Annual flood damage, equivalent to crops from 63ha, is reduced (548%, 5%, 23)

Table H-2-(i) Net Income from Tree Crops (Lempire in 1994 price)

YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Annual Crop	80%	80%	90%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>Plantain</b>															
GROSS	2350	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250
COST	2858	1687	1687	1687	1687	1687	1687	1687	1687	1687	1687	1687	1687	1687	1687
NET	-608	3563	3563	3563	3563	3563	3563	3563	3563	3563	3563	3563	3563	3563	3563
<b>Orange</b>															
GROSS	0	0	0	220	650	1540	2470	3850	3410	4290	4950	5280	5500	5500	5500
COST	2292	954	997	1222	1332	1483	1701	1701	1701	1701	1701	1701	1701	1701	1701
NET	-2292	-954	-997	-1002	-672	47	769	2149	1709	2589	3249	3579	3799	3799	3799
NET (NON-IRR)	-1116	-465	-486	-488	-327	23	374	1046	832	1261	1582	1743	1850	1850	1850
<b>Cocoa</b>															
GROSS	0	460	1465	2378	3058	3894	4543	4868	4868	4868	4868	4868	4868	4868	4868
COST	1472	420	561	942	1242	1423	1485	1478	1478	1478	1478	1478	1478	1478	1478
NET	-1472	40	804	1436	1716	2471	3058	3390	3390	3390	3390	3390	3390	3390	3390
NET (NON-IRR)	-642	17	351	625	748	1077	1333	1478	1478	1478	1478	1478	1478	1478	1478
<b>Mango</b>															
GROSS	0	0	0	0	160	320	640	960	1600	2240	2880	3520	4160	4800	4800
COST	2176	763	784	978	1066	1262	1101	1101	1101	1101	1101	1101	1101	1101	1101
NET	-2176	-763	-784	-978	-906	-942	-461	-141	499	1139	1779	2419	3059	3779	3698
NET (NON-IRR)	-853	-299	-307	-383	-355	-359	-181	-55	195	447	698	948	1199	1325	1450
<b>Paraya</b>															
GROSS	0	0	0	0	800	1600	2880	4000	4000	4000	4000	4000	4000	4000	4000
COST	3169	1442	1394	1230	1230	1230	1230	1230	1230	1230	1230	1230	1230	1230	1230
NET	-3169	-1442	-1394	-1230	-430	370	1650	2770	2770	2770	2770	2770	2770	2770	2770
<b>Others</b>															
GROSS	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960
COST	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
NET	945	945	945	945	945	945	945	945	945	945	945	945	945	945	945
<b>Pineapple</b>															
GROSS	0	9000	9000	9000	9000	9000	9000	9000	9000	9000	9000	9000	9000	9000	9000
COST	3238	2045	2045	2045	2045	2045	2045	2045	2045	2045	2045	2045	2045	2045	2045
NET	-3238	6955	6955	6955	6955	6955	6955	6955	6955	6955	6955	6955	6955	6955	6955
<b>Oil Palm</b>															
GROSS	0	0	0	110	385	770	1430	2200	2530	2750	2960	2960	2960	2960	2960
COST	2459	252	305	447	684	869	1015	1241	1369	1417	1417	1417	1417	1417	1417
NET	-2459	-252	-305	-337	-299	-99	415	959	1161	1333	1443	1443	1443	1443	1443

Table H-2-(ii) Net Income from Tree Crops AREA I

(1000 Lempira in 1984 price)

CROPS	AREA (ha)	YEAR														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
ANNUAL CROP	5963	4924	4924	5539	5539	6155	6155	6155	6155	6155	6155	6155	6155	6155	6155	6155
PLANTAIN	112	399	399	399	399	399	399	399	399	399	399	399	399	399	399	399
ORANGE	71	-58	-71	-71	-48	3	55	153	121	184	231	254	270	270	270	270
COCOA	1250	1840	50	1005	2145	3089	3823	4238	4238	4238	4238	4238	4238	4238	4238	4238
MANGO	163	-355	-128	-159	-148	-154	-75	-23	81	186	290	394	499	551	603	603
PAPAYA	27	-86	-39	-33	-12	10	45	75	75	75	75	75	75	75	75	75
OTHERS	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
PINEAPPLE	217	-703	1509	1509	1509	1509	1509	1509	1509	1509	1509	1509	1509	1509	1509	1509
Sub-Total	1848	-3206	1735	2665	3447	3854	4864	5762	6358	6431	6598	6749	6877	6996	7049	7101
Total (IRR)	7811	1718	8224	8985	10008	11019	11917	12512	12585	12752	12903	13031	13151	13203	13255	13255
ANNUAL CROP	1400	828	932	932	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035
ORANGE	400	-446	-194	-195	-131	9	150	418	333	504	633	697	740	740	740	740
COCOA	300	-193	5	188	224	323	400	443	443	443	443	443	443	443	443	443
MANGO	200	-171	-60	-77	-71	-74	-36	-11	39	89	140	190	240	265	290	290
Sub-Total	900	-810	-241	-84	23	259	513	851	815	1037	1216	1330	1423	1448	1473	1473
Total (NON-I)	2300	19	588	781	1058	1294	1548	1886	1851	2073	2251	2356	2459	2484	2509	2509
Grand Total	10111	1736	7246	9005	11067	12313	13466	14399	14436	14825	15155	15397	15610	15687	15764	15764

Table H-2-(iii) Net Income from Tree Crops AREA II

(1000 Lempira in 1984 price)

CROPS	AREA (ha)	YEAR															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ANNUAL CROP	4904	4065	4065	4573	4573	5082	5082	5082	5082	5082	5082	5082	5082	5082	5082	5082	5082
PLANTAIN	95	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338
DRANGE	59	-56	-58	-59	-40	3	45	127	101	153	192	211	224	224	224	224	224
COCOA	1050	-1546	844	1508	1802	2595	3211	3560	3560	3560	3560	3560	3560	3560	3560	3560	3560
MANGO	137	-298	-107	-134	-124	-129	-63	-19	68	156	244	331	419	463	507	507	507
PAPAYA	23	-73	-32	-28	-10	9	38	64	64	64	64	64	64	64	64	64	64
OTHERS	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PINEAPPLE	183	-593	1273	1273	1273	1273	1273	1273	1273	1273	1273	1273	1273	1273	1273	1273	1273
Sub-Total	1554	-2696	1466	2264	3246	4095	4849	5349	5410	5550	5676	5784	5884	5928	5972	5972	5972
Total (IRR)	6458	1370	5637	7478	8328	9176	9931	10430	10492	10531	10758	10855	10966	11010	11053	11053	11053
ANNUAL CROP	2300	223	250	250	278	278	278	278	278	278	278	278	278	278	278	278	278
ORANGE	2400	-2678	-1116	-1171	-785	55	898	2510	1997	3026	3797	4183	4440	4440	4440	4440	4440
COCOA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MANGO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sub-Total	2400	-2678	-1116	-1171	-785	55	898	2510	1997	3026	3797	4183	4440	4440	4440	4440	4440
Total (NON-I)	4700	-2456	-893	-921	-507	334	1176	2789	2275	3305	4075	4452	4718	4718	4718	4718	4718
Grand Total	11158	-1086	4638	5921	7921	9510	11106	13219	12767	15336	14833	15327	15684	15726	15772	15772	15772

Table H-2-(iv) Net income from Tree Crops TOTAL AREA  
(1000 Lempira in 1984 price)

CROPS	AREA (ha)	YEAR															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ANNUAL CROP	10867	8989	8989	10113	10113	11236	11236	11236	11236	11236	11236	11236	11236	11236	11236	11236	11236
PLANTAIN	207	-126	738	738	738	738	738	738	738	738	738	738	738	738	738	738	738
ORANGE	130	-298	-124	-130	-87	6	100	279	222	337	422	455	494	494	494	494	494
COCOA	2300	-3386	92	1849	3947	5683	7033	7797	7797	7797	7797	7797	7797	7797	7797	7797	7797
MANGO	300	-653	-229	-235	-272	-283	-138	-42	150	342	534	726	918	1014	1109	1109	1109
PAPAYA	50	-158	-72	-70	-21	18	83	139	139	139	139	139	139	139	139	139	139
OTHERS	15	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
PINEAPPLE	400	-1295	2782	2782	2782	2782	2782	2782	2782	2782	2782	2782	2782	2782	2782	2782	2782
Sub-Total	3402	-5902	3201	4948	7100	8959	10611	11706	11841	12147	12425	12660	12881	12977	13072	13072	13072
Total (IRR)	14269	3087	12190	15051	16464	18336	20195	22943	25077	23384	23662	23996	24117	24213	24309	24309	24309
ANNUAL CROP	3700	1051	1051	1182	1314	1314	1314	1314	1314	1314	1314	1314	1314	1314	1314	1314	1314
ORANGE	2800	-3125	-1302	-1361	-916	64	1047	2929	2330	3531	4430	4880	5180	5180	5180	5180	5180
COCOA	300	-193	5	105	224	323	400	443	443	443	443	443	443	443	443	443	443
MANGO	200	-171	-60	-61	-71	-74	-36	-11	39	89	140	190	240	265	290	290	290
Sub-Total	3300	-3488	-1357	-1317	-1255	-762	314	3361	2812	4054	5013	5513	5863	5888	5913	5913	5913
Total (NON-IRR)	7000	-2437	-306	-135	551	1627	2725	4675	4126	5377	6326	6827	7177	7202	7227	7227	7227
Grand Total	21269	650	11884	14926	16391	18888	21823	24572	27617	27203	28761	29988	30724	31294	31415	31536	31536



Table H-3 Economic Cost (Annual Crop + Pasture)

(Lempira in 1984 price)

CROPS	AREA (ha)	MNL (M-D)	MANUAL	MACHINE	INPUT	OTHERS	TOTAL	ECC UNIT	TTL(*1000)	M-D (IRR)
AREA I										
MAIZE	2501	74	441	120	147	37	745	591	1478	185074
BEANS	1398	50	300	110	40	120	570	458	540	69600
UPLAND RICE	857	80	480	124	259	157	1020	875	751	58560
SOYBEANS	652	31	186	215	206	60	667	679	443	20212
TOMATO	326	83	498	546	1018	600	2662	2804	914	27058
CASSAVA	120	196	1176	140	158	719	2193	1680	202	23520
TARO	109	129	774	0	493	1997	3264	3000	327	14061
SUB-TOTAL	5963								4755	409385
MAIZE	500	66	397	108	132	33	670	532	319	39600
CASSAVA	400	72	429	51	58	262	800	613	245	28900
TARO	400	47	280	0	178	722	1180	1085	434	18800
PASTURE	0	5	30	0	5	10	45	31	0	0
TOTAL	7363								5753	495585
AREA II										
MAIZE	2059	74	441	120	147	37	745	591	1216	152232
BEANS	1175	50	300	110	40	120	570	458	538	59750
UPLAND RICE	720	80	480	124	259	157	1020	876	631	57600
SOYBEANS	485	31	186	215	206	60	667	679	329	15035
TOMATO	274	83	498	546	1018	600	2662	2804	768	22742
CASSAVA	101	196	1176	140	158	719	2193	1680	170	19785
TARO	91	129	774	0	493	1997	3264	3000	273	11739
SUB-TOTAL	4904								3925	337954
MAIZE	0	66	397	108	132	33	670	532	0	0
CASSAVA	0	72	429	51	58	262	800	613	0	0
TARO	0	47	280	0	178	722	1180	1085	0	0
PASTURE	2300	5	30	0	5	10	45	31	71	11500
TOTAL	7204								3996	349454
TOTAL AREA										
MAIZE	4559	74	441	120	147	37	745	591	2694	337365
BEANS	2573	50	300	110	40	120	570	459	1178	128650
UPLAND RICE	1577	80	480	124	259	157	1020	876	1381	126160
SOYBEANS	1137	31	186	215	206	60	667	679	772	35247
TOMATO	600	83	498	546	1018	600	2662	2804	1692	49800
CASSAVA	221	196	1176	140	158	719	2193	1680	771	45315
TARO	200	129	774	0	493	1997	3264	3000	600	25800
SUB-TOTAL	10857								8678	746339
MAIZE	600	66	397	108	132	33	670	532	319	39600
CASSAVA	400	72	429	51	58	262	800	613	245	28900
TARO	400	47	280	0	178	722	1180	1085	434	18800
PASTURE	2300	5	30	0	5	10	45	31	71	11500
TOTAL	14567								5747	815029

Table H-4 Economic Cost (i) ORANGE-1KR

(Lempira in 1984 price)

	1	2	3	4	5	6	7	8
MNL (M-D)	175	93	85	103	110	116	122	122
MANUAL	1050	558	515	618	660	695	732	732
MACHINE+INPUT	170	255	320	405	460	555	630	630
OTHERS	1072	141	161	199	212	242	279	279
TOTAL	2292	954	997	1222	1332	1493	1701	1701
AREA I (ha)	71	71	71	71	71	71	71	71
ECO UNIT	1810	739	819	1014	1117	1284	1508	1508
TTL(*1000)	128	52	58	72	79	91	107	107
M-D	12425	6603	6106	7313	7810	8236	8662	8662
AREA II (ha)	59	59	59	59	59	59	59	59
ECO UNIT	1810	739	819	1014	1117	1284	1508	1508
TTL(*1000)	107	44	48	60	65	76	89	89
M-D	10325	5487	5074	6077	6490	6844	7198	7198

Table H-4 Economic Cost (ii) ORANGE-NIR

(Lempira in 1984 price)

	1	2	3	4	5	6	7	8
MNL (M-D)	93	49	45	55	58	51	65	65
MANUAL	558	294	276	330	248	365	390	390
MACHINE+INPUT	90	135	169	214	243	294	365	365
OTHERS	555	76	83	103	114	130	145	145
TOTAL	1213	505	528	647	605	790	900	900
AREA I (ha)	400	400	400	400	400	400	400	400
ECO UNIT	957	392	432	536	542	681	796	796
TTL(*1000)	383	157	173	214	217	272	318	318
M-D	37200	19600	18400	22000	23200	24400	26000	26000
AREA II (ha)	2400	2400	2400	2400	2400	2400	2400	2400
ECO UNIT	957	392	432	536	542	681	796	796
TTL(*1000)	2297	941	1037	1286	1301	1634	1910	1910
M-D	223200	117600	110400	132000	139200	146400	156000	156000

Table II-4 Economic Cost (iii) CUCDA-IRR

	(Lempira in 1984 price)							
	1	2	3	4	5	6	7	8
NHL (M-D)	50	30	46	62	103	110	115	113
MANUAL	300	100	276	372	618	600	690	678
MACHINE+INPUT	115	170	240	330	410	410	410	410
OTHERS	1097	70	146	220	314	353	395	390
TOTAL	1472	420	661	942	1342	1473	1495	1478
AREA I (ha)	1250	1250	1250	1250	1250	1250	1250	1250
ECO UNIT	1351	373	583	844	1136	1196	1247	1242
TTL(*1000)	1689	466	729	1055	1420	1495	1554	1553
M-D	62500	37500	57500	77500	128750	137500	143750	141250
AREA II (ha)	1050	1050	1050	1050	1050	1050	1050	1050
ECO UNIT	1351	373	583	844	1136	1196	1243	1242
TTL(*1000)	1419	392	612	886	1193	1256	1305	1304
M-D	52500	31500	40300	55100	108150	115500	120750	118650

Table II-4 Economic Cost (iv) CUCDA-IRR

	(Lempira in 1984 price)							
	1	2	3	4	5	6	7	8
NHL (M-D)	27	16	25	33	55	59	61	60
MANUAL	162	96	150	198	330	394	368	360
MACHINE+INPUT	61	91	128	167	219	219	219	219
OTHERS	564	37	75	119	168	188	209	211
TOTAL	787	224	353	504	717	761	794	790
AREA I (ha)	300	300	300	300	300	300	300	300
ECO UNIT	721	198	310	452	607	639	655	655
TTL(*1000)	216	60	93	136	182	192	200	200
M-D	8100	4800	7500	9900	16500	17700	19300	18000
AREA II (ha)	0	0	0	0	0	0	0	0
ECO UNIT	721	198	310	452	607	639	655	655
TTL(*1000)	0	0	0	0	0	0	0	0
M-D	0	0	0	0	0	0	0	0

Table H-4 Economic Cost (v) MANGO-IRR

(Lempira in 1984 price)

	1	2	3	4	5	6	7	8
MNL (M-D)	161	77	68	80	85	86	90	90
MANUAL	965	482	408	480	510	516	540	540
MACHINE+INPUT	273	190	253	335	362	422	422	422
OTHERS	937	111	123	163	184	324	139	139
TOTAL	2176	783	784	978	1056	1262	1101	1101
AREA I (ha)	163	163	163	163	163	163	163	163
ECO UNIT	1761	580	643	822	902	1110	937	937
TTL(*1000)	287	95	105	134	147	181	153	153
M-D	26243	12591	11084	13040	13855	14018	14670	14670
AREA II (ha)	137	137	137	137	137	137	137	137
ECO UNIT	1761	580	643	822	902	1110	937	937
TTL(*1000)	241	79	88	113	124	152	128	128
M-D	22057	10549	9316	10950	11645	11782	12330	12330

Table H-4 Economic Cost (vi) MANGO-NIR

(Lempira in 1984 price)

	1	2	3	4	5	6	7	8
MNL (M-D)	139	66	59	69	73	74	78	78
MANUAL	834	396	354	414	438	444	458	458
MACHINE+INPUT	235	164	218	289	312	364	364	364
OTHERS	807	98	104	140	169	280	117	117
TOTAL	1876	658	676	843	919	1088	949	949
AREA I (ha)	200	200	200	200	200	200	200	200
ECO UNIT	1518	501	554	708	778	957	806	806
TTL(*1000)	304	100	111	142	156	191	161	161
M-D	27800	13200	11800	13800	14600	14800	15600	15600
AREA II (ha)	0	0	0	0	0	0	0	0
ECO UNIT	1518	501	554	708	778	957	806	806
TTL(*1000)	0	0	0	0	0	0	0	0
M-D	0	0	0	0	0	0	0	0

Table H-4 Economic Cost (vii) PLANTAIN , PAPAYA

	PLANTAIN				PAPAYA			
	1	2	3	4	1	2	3	4
MIL (M-D)	296	145	145	145	238	118	114	108
MANUAL	1776	870	870	870	1428	708	684	648
MACHINE+INPUT	306	360	360	360	580	245	237	194
OTHERS	776	457	457	457	1161	489	473	388
TOTAL	2858	1687	1687	1687	3169	1442	1394	1230
AREA I (ha)	112	112	112	112	27	27	27	27
ECO UNIT	2047	1342	1342	1342	2600	1149	1111	955
TTL(*1000)	229	150	150	150	70	31	30	26
M-D	33152	16240	16240	16240	6426	3186	3078	2916
AREA II (ha)	95	95	95	95	23	23	23	23
ECO UNIT	2047	1342	1342	1342	2600	1149	1111	955
TTL(*1000)	194	127	127	127	80	26	26	22
M-D	28120	13775	13775	13775	5474	2714	2622	2484

Table H-4 Economic Cost (viii) PINEAPPLE , OTHERS

	PINEAPPLE				OTHERS			
	1	2	3	4	1	2	3	4
MIL (M-D)	250	165	165	165	2	2	2	2
MANUAL	1500	990	990	990	12	12	12	12
MACHINE+INPUT	579	352	352	352	1	1	1	1
OTHERS	1159	703	703	703	2	2	2	2
TOTAL	3238	2045	2045	2045	15	15	15	15
AREA I (ha)	217	217	217	217	8	8	8	8
ECO UNIT	2633	1638	1638	1638	9	9	9	9
TTL(*1000)	571	355	355	355	0	0	0	0
M-D	54250	35805	35805	35805	15	15	16	16
AREA II (ha)	183	183	183	183	7	7	7	7
ECO UNIT	2633	1638	1638	1638	9	9	9	9
TTL(*1000)	482	300	300	300	0	0	0	0
M-D	45750	30195	30195	30195	14	14	14	14

Table H-5 Economic Cost (Total)  
( 1000 Lempira in 1984 price )

	1	2	3	4	5	6	7	8
AREA I								
ORANGE-IRR	129	52	58	72	79	91	107	107
ORANGE-NIR	383	157	173	214	217	272	318	318
COCOA-IRR	1689	466	729	1055	1420	1495	1554	1553
COCOA-NIR	215	60	93	136	182	192	200	200
MANGO-IRR	287	95	105	134	147	181	153	153
MANGO-NIR	304	100	111	142	156	191	181	181
PLANTAIN	229	150	150	150	150	150	150	150
PAPAYA	70	31	30	26	26	26	26	26
PINEAPPLE	571	355	355	355	355	355	355	355
OTHERS	0	0	0	0	0	0	0	0
TOTAL	3878	1456	1804	2284	2732	2953	3024	3023
ANNUAL CROPS	5753	5753	5753	5753	5753	5753	5753	5753
GRAND TOTAL	9631	7219	7557	8037	8485	9708	8777	8776
AREA II								
ORANGE-IRR	107	44	48	60	66	76	89	89
ORANGE-NIR	2297	941	1037	1286	1301	1634	1910	1910
COCOA-IRR	1419	392	612	886	1193	1256	1305	1304
COCOA-NIR	0	0	0	0	0	0	0	0
MANGO-IRR	241	79	88	113	124	152	128	128
MANGO-NIR	0	0	0	0	0	0	0	0
PLANTAIN	194	127	127	127	127	127	127	127
PAPAYA	60	26	25	22	22	22	22	22
PINEAPPLE	482	300	300	300	300	300	300	300
OTHERS	0	0	0	0	0	0	0	0
TOTAL	4900	1909	2238	2794	3133	3567	3881	3880
ANNUAL CROPS	3996	3996	3996	3996	3996	3996	3996	3996
GRAND TOTAL	8796	5905	6234	6790	7129	7563	7877	7876
TOTAL AREA								
ORANGE-IRR	236	96	106	132	145	167	196	196
ORANGE-NIR	2680	1096	1210	1500	1518	1906	2228	2228
COCOA-IRR	3108	858	1341	1941	2613	2751	2859	2857
COCOA-NIR	216	60	93	136	182	192	200	200
MANGO-IRR	528	174	193	247	271	333	281	281
MANGO-NIR	304	100	111	142	156	191	161	161
PLANTAIN	423	277	277	277	277	277	277	277
PAPAYA	130	57	56	48	48	48	48	48
PINEAPPLE	1053	655	655	655	655	655	655	655
OTHERS	0	0	0	0	0	0	0	0
TOTAL	8678	3375	4042	5078	5665	6520	6905	6903
ANNUAL CROPS	9749	9749	9749	9749	9749	9749	9749	9749
GRAND TOTAL	18427	13124	13781	14927	15614	16269	16654	16652

Table H-6 Unit Economic Price of Annual Crops per M. ton

CROPS	RICE	MAIZE	SOYBEANS	COCOA	ORANGES	BANANAS
1983 PRICE (\$)						
YEAR = 1983	277	136	282	2120	373	429
YEAR = 1984	246	133	271	2300	367	367
YEAR = 1990	339	113	258	1690	353	295
YEAR = 1995	327	113	256	1950	343	275
1984 PRICE (\$)						
YEAR = 1984	255	138	280	2380	380	380
YEAR = 1990	351	117	267	1749	366	305
YEAR = 1995	339	117	265	2018	355	285
(Source : Price Prospect for Major Primary Commodities, Sep. 1984 )						
CROPS	RICE	MAIZE	SOYBEANS	COCOA	ORANGE	PINEAPPLE (*11)
W-M-PRICE (*1)	339	117	265	2018	355	250
QLT SCALE (*2)	0.85	0.95	0.85	0.75	0.60	0.75
UNIT PRICE	288	111	225	1514	213	188
FREIT+I (*3)	-37	-37	-37	166	125	0
CIF-IN\$ (*4)	325	148	262	1348	88	188
CIF-LMPS (*5)	813	370	655	3370	220	470
PORT-C (*6)	-40	-40	-40	66	65	65
L TRSPT (*7)	38	30	38	32	32	32
EX-MILL	315					
PADDY EQ. (*8)	530					
PR-COST (*9)	63					
F.G.PRICE (*10)	467	380	658	3272	123	373

Note

- (\*1) World Market Price
- (\*2) Quality Scale
- (\*3) Freight and insurance
- (\*4) U.S \$
- (\*5) Lempira
- (\*6) Port Charge
- (\*7) Local Transport
- (\*8) Paddy Equivalent (milled ratio is 65%)
- (\*9) Processing Cost (sale of by product is reduced)
- (\*10) Farme Gate Price
- (\*11) FOB Port Castilla 1982 World Average

Table H-7 Economic Gross Income from Annual Crops

CROP	AREA I (ha)	AREA II (ha)	UNIT PRICE (Lps)	YIELD (ton/ha)	AREA I (1000 Lps)	AREA II (1000 Lps)	TOTAL AREA (1000 Lps)
MAIZE-IRR	2501	2058	380	5.0	4752	3910	8662
BEANS-IRR	1398	1175	1012	1.5	2122	1784	3906
UPLAND RICE-IRR	857	720	457	5.0	2001	1681	3682
SOYBEANS-IRR	652	485	658	2.5	1073	798	1871
TOMATO-IRR	326	274	121	40.0	1578	1326	2904
CASSAVA-IRR	120	101	175	20.0	422	355	778
TARO-IRR	109	91	175	35.0	671	561	1232
SUB TOTAL	5963	4904			12619	10416	23035
MAIZE-NIR	600	0	380	3.0	684	0	684
CASSAVA-NIR	400	0	175	9.0	634	0	634
TARO-NIR	400	0	175	16.0	1125	0	1125
PASTURE-NIR	0	2300	18	10.0	0	414	414
SUB TOTAL	1400	2300			2444	414	2858
TOTAL	7363	7204			15063	10830	25893



Table H-8 Economic Gross Income (i) AREA I  
(1000 Lempire in 1984 price)

CROPS	AREA (ha)	YEAR																
		1	2	3	4	5	5	5	7	8	9	10	11	12	13	14	15	16
ANNUAL CROP	5853	10095	10095	11357	11357	12619	12619	12619	12619	12619	12619	12619	12619	12619	12619	12619	12619	12619
PLANTAIN	112	252	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588
ORANGE	71	0	0	17	52	122	196	306	306	271	341	393	419	437	437	437	437	437
COCOA	1201	0	580	2998	3854	4908	5725	6135	6135	6135	6135	6135	6135	6135	6135	6135	6135	6135
FRANGO	153	0	0	0	25	52	104	156	261	261	365	468	574	678	730	782	782	782
PAPAYA	27	0	0	0	22	43	78	103	108	108	108	108	108	108	108	108	108	108
OTHERS	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
PINEAPPLE	217	0	1953	2024	2024	2024	2024	2024	2024	2024	2024	2024	2024	2024	2024	2024	2024	2024
Sub-Total	1848	260	3129	4466	6574	7745	8723	9325	9395	9569	9725	9856	9856	9856	9856	9856	9856	9856
Total (IPA)	7811	10355	13224	15823	19193	20364	21342	21944	22014	22188	22344	22475	22597	22597	22597	22597	22597	22597
ANNUAL CROP	1400	1955	1955	2200	2444	2444	2444	2444	2444	2444	2444	2444	2444	2444	2444	2444	2444	2444
ORANGE	400	0	0	49	148	344	552	861	753	960	1107	1181	1181	1181	1181	1181	1181	1181
COCOA	300	0	65	207	432	550	641	687	687	687	687	687	687	687	687	687	687	687
FRANGO	200	0	0	0	18	32	64	96	160	224	288	352	416	416	416	416	416	416
Sub-Total	900	0	65	207	596	926	1257	1644	1610	1871	2082	2220	2333	2333	2333	2333	2333	2333
Total (HMF-I)	2300	1955	2020	2407	3040	3370	3701	4088	4054	4315	4526	4654	4777	4777	4777	4777	4777	4777
Grand Total	10111	12310	15244	18230	19577	22233	23734	25043	25032	26068	26870	27139	27374	27374	27374	27374	27374	27374

Table H-8 Economic Gross Income (ii) AREA II  
(1000 Lempira in 1984 price)

CROPS	AREA (ha)	YEAR															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ANNUAL CROP	4904	8333	8333	9374	9374	10416	10416	10416	10416	10416	10416	10416	10416	10416	10416	10416	10416
PLANTAIN	95	214	499	499	499	499	499	499	499	499	499	499	499	499	499	499	499
ORANGE	59	0	0	15	44	102	163	254	225	283	327	348	363	363	363	363	363
COCOA	1050	0	487	2518	3237	4122	4809	5153	5153	5153	5153	5153	5153	5153	5153	5153	5153
MANIHO	137	0	0	0	22	44	88	132	219	307	395	482	570	614	658	658	658
PAPAYA	23	0	0	0	18	37	66	92	92	92	92	92	92	92	92	92	92
OTHERS	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PINEAPPLE	183	0	1647	1706	1706	1706	1706	1706	1706	1706	1706	1706	1706	1706	1706	1706	1706
Sub-Total	1554	221	2640	3753	4745	5533	6517	7338	7843	7901	8047	8179	8287	8390	8434	8478	8478
Total (IRA)	6458	8554	10973	13137	14119	15949	16933	17754	18259	18317	18453	18595	18703	18806	18850	18894	18894
ANNUAL CROP	2300	331	331	373	414	414	414	414	414	414	414	414	414	414	414	414	414
ORANGE	2400	0	0	255	886	2066	3314	5167	5167	4577	5758	6643	7085	7380	7380	7380	7380
COCOA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MANIHO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sub-Total	2400	0	0	255	886	2066	3314	5167	5167	4577	5758	6643	7085	7380	7380	7380	7380
Total (NON-IRA)	4700	331	331	628	1300	2480	3728	5581	4991	4991	6172	7057	7499	7794	7794	7794	7794
Grand Total	11158	8885	11304	13510	14787	17249	19413	21482	23840	23308	24635	25652	26202	26600	26644	26688	26688

Table H-B Economic Gross Income (iii) TOTAL AREA (1000 Lempira in 1984 Price)

CROPS	AREA (ha)	YEAR														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
ANNUAL CROP	10867	18428	20732	20732	20732	23035	23035	23035	23035	23035	23035	23035	23035	23035	23035	23035
PLANTAIN	207	1087	1087	1087	1087	1087	1087	1087	1087	1087	1087	1087	1087	1087	1087	1087
ORANGE	130	0	0	32	96	224	359	560	496	624	720	768	800	800	800	800
COCOA	2300	0	1067	3397	7091	9030	10534	11288	11288	11288	11288	11288	11288	11288	11288	11288
BANANO	300	0	0	0	48	96	192	288	480	672	864	1056	1248	1344	1440	1440
OTHERS	15	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
PIPERAPPLE	400	0	3600	3730	3730	3730	3730	3730	3730	3730	3730	3730	3730	3730	3730	3730
Sub-Total	3402	480	5758	10378	12106	14261	16060	17167	17295	17615	17903	18143	18367	18463	18559	18559
Total (IRR)	14259	18908	24196	28960	35110	37296	39095	40202	40330	40650	40938	41178	41402	41498	41594	41594
ANNUAL CROP	3700	2286	2572	2572	2658	2658	2658	2658	2658	2658	2658	2658	2658	2658	2658	2658
ORANGE	2800	0	0	344	1033	2411	3867	6028	5340	6717	7750	8266	8610	8610	8610	8610
COCOA	300	0	55	207	432	550	641	687	687	687	687	687	687	687	687	687
BANANO	200	0	0	0	16	32	64	96	160	224	288	352	416	448	480	480
Sub-Total	3300	0	65	207	680	1461	2993	4572	6187	7628	8725	9305	9713	9745	9777	9777
Total (NON-IRR)	7000	2286	2779	3252	4339	5851	7430	9689	9045	10486	11583	12163	12571	12603	12635	12635
Grand Total	121269	121194	26547	31739	34362	39480	45525	49871	49375	51136	52521	53341	53973	54101	54229	54229

Table H-9 Economic Net Benefit

(1000 Lempira in 1984 price)

YEAR	AREA I			AREA II			TOTAL AREA			
	TTL-IRR	TTL-HIR	ECO-COS	TTL-IRR	TTL-NIR	ECO-COS	TTL-IRR	TTL-NIR	ECO-COS	NET-BNE
1	10355	1955	9831	8554	331	8796	18909	2286	18427	2768
2	15224	2020	7219	10973	331	5905	24197	2351	13124	13424
3	15823	2407	7557	13137	373	5234	28961	2779	13791	17949
4	16592	2585	8037	14119	668	6790	31112	3252	14827	19537
5	19193	3040	6485	15949	1300	7129	35142	4340	15614	23868
6	20384	3370	8706	16933	2480	7563	37297	5850	16269	26878
7	21342	3701	8777	17754	3728	7877	39096	7429	16654	29871
8	21944	4088	8776	18259	5581	7876	40203	9669	16652	33220
9	22014	4054	8776	18317	4991	7876	40331	9045	16652	32724
10	22168	4315	8776	18463	6172	7876	40651	10467	16652	34486
11	22344	4528	8776	18595	7057	7876	40939	11583	16652	35870
12	22475	4664	8776	18703	7499	7876	41178	12163	16652	36689
13	22597	4777	8776	18806	7794	7876	41403	12571	16652	37322
14	22649	4809	8776	18950	7794	7876	41499	12603	16652	37450
15	22701	4841	8776	18894	7794	7876	41595	12635	16652	37578
16	22701	4841	8776	18894	7794	7876	41555	12635	16652	37578

Table H-10 Economic Net Profit of Present Situation in 1984

(Lempira in 1984 price)

CROP	YIELD t/ha	UNIT PRICE Lp/t	COST (*) Lp/ha	AREA ha	GROSS INCOME Lp	TOTAL COST Lp	NET PROFIT Lp
AREA I							
MAIZE	2.5	350	329	3242	2836750	1066618	1770132
BEANS	1.1	920	250	225	227700	56250	171450
UPLAND RICE	2.6	460	400	263	314548	105200	209348
CASSAVA	8.0	150	400	20	28800	8000	20800
PLANTAIN	15.0	150	544	0	0	0	0
ORANGE	25.0	110	550	0	0	0	0
OTHERS	10.0	80	5	0	0	0	0
PASTURE	6.0	17	10	1372	136651	13720	122931
TOTAL				5122	3544449	1249788	2294661
AREA II							
MAIZE	2.5	350	329	470	411250	154630	256620
BEANS	1.1	920	250	33	33396	8250	25146
UPLAND RICE	2.6	460	400	39	46644	15500	31044
CASSAVA	8.0	150	400	1	1440	400	1040
PLANTAIN	15.0	150	544	7	15750	3808	11942
ORANGE	25.0	110	550	130	357500	71500	286000
OTHERS	10.0	80	5	15	12000	75	11925
PASTURE	6.0	17	10	6340	631464	63400	568064
TOTAL				7035	1509444	317663	1191781
TOTAL AREA				12157	5053893	1567451	3486442

Note : (\*) Economic Cost=1/2 x Financial Cost

Table H-11 Economic Benefit

(1000 Lempira in 1984 price)

YEAR	CASE 1				CASE 2				
	WITHOUT PROJECT AREA I	WITH PROJECT AREA II	WITH - WITHOUT AREA I	WITHOUT AREA II	WITHOUT PROJECT AREA I	WITH PROJECT AREA II	WITH - WITHOUT AREA I	WITHOUT AREA II	TOTAL
1984	2295	1192	0	0	0	0	0	0	0
1985	2327	1210	0	0	0	0	0	0	0
1986	2359	1228	0	0	0	0	0	0	0
1987	2391	1246	0	0	0	0	0	0	0
1988	2423	1264	0	0	0	0	0	0	0
1989	2455	1282	0	0	0	0	0	0	0
1990	2487	1300	2679	0	192	0	192	-1300	-1108
1991	2519	1318	8025	0	5506	0	5506	-1318	4188
1992	2551	1336	10673	89	8122	0	8122	-1336	6786
1993	2583	1354	11540	5398	8957	89	8957	-1354	7692
1994	2615	1372	13748	7276	11133	5399	11133	4027	15160
1995	2647	1390	15028	7997	12381	7276	12381	5866	18267
1996	2679	1408	16266	10120	13587	7997	13587	6588	20176
1997	2711	1426	17256	11850	14545	10120	14545	8694	23239
1998	2743	1444	17292	13605	14549	11850	14549	10406	24955
1999	2775	1462	17727	15964	14952	13605	14952	12143	27095
2000	2807	1480	18094	15432	15287	15964	15287	14484	29771
2001	2839	1498	18363	16759	15524	16759	15524	13934	29458
2002	2871	1516	18598	17776	15727	16759	15727	15243	30970
2003	2903	1534	18682	18326	15779	17776	15779	16242	32021
2004	2935	1552	18766	18724	15831	18326	15831	16774	32605
2005	2967	1570	18766	18768	15799	18724	15799	17154	32953
2006	2999	1588	18766	18812	15767	18768	15767	17180	32947
2007	3031	1606	18766	18812	15735	18812	15735	17206	32941
2008	3063	1624	18766	18812	15703	18812	15703	17188	32891
2009	3095	1642	18766	18812	15671	18812	15671	17170	32841
2010	3127	1660	18766	18812	15639	18812	15639	17152	32791
2011	3159	1678	18766	18812	15607	18812	15607	17134	32741
2012	3191	1696	18766	18812	15575	18812	15575	17116	32691
2013	3223	1714	18766	18812	15543	18812	15543	17098	32641
2014	3255	1732	18766	18812	15511	18812	15511	17080	32591
2015	3287	1750	18766	18812	15479	18812	15479	17062	32541
2016	3319	1768	18766	18812	15447	18812	15447	17044	32491
2017	3351	1786	18766	18812	15415	18812	15415	17026	32441
2018	3383	1804	18766	18812	15383	18812	15383	17008	32391
2019	3415	1822	18766	18812	15351	18812	15351	16990	32341
2020	3447	1840	18766	18812	15319	18812	15319	16972	32291
2021	3479	1858	18766	18812	15287	18812	15287	16954	32241
2022	3511	1876	18766	18812	15255	18812	15255	16936	32191
2023	3543	1894	18766	18812	15223	18812	15223	16918	32141
2024	3575	1912	18766	18812	15191	18812	15191	16900	32091

Table H-12 Financial Benefit

(1000 Lempira in 1984 price)

YEAR	CASE 1										CASE 2									
	WITHOUT PROJECT		WITH PROJECT		WITH - WITHOUT		TOTAL		WITH PROJECT		WITH - WITHOUT		TOTAL		WITH PROJECT		WITH - WITHOUT		TOTAL	
	AREA I	AREA II	AREA I	AREA II	AREA I	AREA II	AREA I	AREA II	AREA I	AREA II	AREA I	AREA II	AREA I	AREA II	AREA I	AREA II	AREA I	AREA II	AREA I	AREA II
1984	1048	875	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	1080	893	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	1112	911	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	1144	929	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	1176	947	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	1208	965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	1240	983	1735	0	495	-983	-488	1735	0	495	-983	-488	1735	0	495	-983	-488	1735	0	495
1991	1272	1001	7246	0	5974	-1001	4973	7246	0	5974	-1001	4973	7246	0	5974	-1001	4973	7246	0	5974
1992	1304	1019	9006	-1086	7702	-2105	5597	9006	0	7702	-2105	5597	9006	0	7702	-2105	5597	9006	0	7702
1993	1336	1037	9836	4639	8500	3601	12101	9836	-1086	8500	3601	12101	9836	-1086	8500	3601	12101	9836	-1086	8500
1994	1368	1055	11065	5922	9697	4867	14564	11065	4639	9697	4867	14564	11065	4639	9697	4867	14564	11065	4639	9697
1995	1400	1073	12315	6558	10915	5485	16400	12315	5922	10915	5485	16400	12315	5922	10915	5485	16400	12315	5922	10915
1996	1432	1091	13468	7821	12036	6730	18766	13468	7821	12036	6730	18766	13468	7821	12036	6730	18766	13468	7821	12036
1997	1464	1109	14399	9523	12935	8414	21349	14399	9523	12935	8414	21349	14399	9523	12935	8414	21349	14399	9523	12935
1998	1496	1127	14436	11109	12940	9882	22922	14436	11109	12940	9882	22922	14436	11109	12940	9882	22922	14436	11109	12940
1999	1528	1145	14825	13219	13297	12074	25371	14825	13219	13297	12074	25371	14825	13219	13297	12074	25371	14825	13219	13297
2000	1560	1163	15156	12757	13596	11604	25200	15156	12757	13596	11604	25200	15156	12757	13596	11604	25200	15156	12757	13596
2001	1592	1181	15397	13936	13605	12755	26560	15397	13936	13605	12755	26560	15397	13936	13605	12755	26560	15397	13936	13605
2002	1624	1199	15611	14834	13987	13635	27622	15611	14834	13987	13635	27622	15611	14834	13987	13635	27622	15611	14834	13987
2003	1656	1217	15688	15326	14032	14109	28141	15688	15326	14032	14109	28141	15688	15326	14032	14109	28141	15688	15326	14032
2004	1688	1235	15765	15684	14077	14449	28526	15765	15684	14077	14449	28526	15765	15684	14077	14449	28526	15765	15684	14077
2005	1720	1253	15765	15728	14045	14475	28520	15765	15728	14045	14475	28520	15765	15728	14045	14475	28520	15765	15728	14045
2006	1752	1271	15765	15772	14013	14501	28514	15765	15772	14013	14501	28514	15765	15772	14013	14501	28514	15765	15772	14013
2007	1784	1289	15765	15772	13981	14483	28464	15765	15772	13981	14483	28464	15765	15772	13981	14483	28464	15765	15772	13981
2008	1816	1307	15765	15772	13949	14465	28414	15765	15772	13949	14465	28414	15765	15772	13949	14465	28414	15765	15772	13949
2009	1848	1325	15765	15772	13917	14447	28364	15765	15772	13917	14447	28364	15765	15772	13917	14447	28364	15765	15772	13917
2010	1880	1343	15765	15772	13885	14429	28314	15765	15772	13885	14429	28314	15765	15772	13885	14429	28314	15765	15772	13885
2011	1912	1361	15765	15772	13853	14411	28264	15765	15772	13853	14411	28264	15765	15772	13853	14411	28264	15765	15772	13853
2012	1944	1379	15765	15772	13821	14393	28214	15765	15772	13821	14393	28214	15765	15772	13821	14393	28214	15765	15772	13821
2013	1976	1397	15765	15772	13789	14375	28164	15765	15772	13789	14375	28164	15765	15772	13789	14375	28164	15765	15772	13789
2014	2008	1415	15765	15772	13757	14357	28114	15765	15772	13757	14357	28114	15765	15772	13757	14357	28114	15765	15772	13757
2015	2040	1433	15765	15772	13725	14339	28064	15765	15772	13725	14339	28064	15765	15772	13725	14339	28064	15765	15772	14339
2016	2072	1451	15765	15772	13693	14321	28014	15765	15772	13693	14321	28014	15765	15772	13693	14321	28014	15765	15772	14321
2017	2104	1469	15765	15772	13661	14303	27964	15765	15772	13661	14303	27964	15765	15772	13661	14303	27964	15765	15772	14303
2018	2136	1487	15765	15772	13629	14285	27914	15765	15772	13629	14285	27914	15765	15772	13629	14285	27914	15765	15772	14285
2019	2168	1505	15765	15772	13597	14267	27864	15765	15772	13597	14267	27864	15765	15772	13597	14267	27864	15765	15772	14267
2020	2200	1523	15765	15772	13565	14249	27814	15765	15772	13565	14249	27814	15765	15772	13565	14249	27814	15765	15772	14249
2021	2232	1541	15765	15772	13533	14231	27764	15765	15772	13533	14231	27764	15765	15772	13533	14231	27764	15765	15772	14231
2022	2264	1559	15765	15772	13501	14213	27714	15765	15772	13501	14213	27714	15765	15772	13501	14213	27714	15765	15772	14213
2023	2296	1577	15765	15772	13469	14195	27664	15765	15772	13469	14195	27664	15765	15772	13469	14195	27664	15765	15772	14195
2024	2328	1595	15765	15772	13437	14177	27614	15765	15772	13437	14177	27614	15765	15772	13437	14177	27614	15765	15772	14177

Table H-13 Economic Analysis for Case 5

Planned Crop Pattern for Case 5 (i) AREA I (Lempira in 1984 price)

CROP	YIELD t/ha	UNIT PRICE Lp/t	COST Lp/ha	AREA I			TOTAL ha	GROSS INC. LP	T. COST LP	NET PROFIT LP
				IN(*1) ha	OUT(*2) ha	he				
MAIZE	5.0	350.0	745.0	1846	0	1846	3230500	1375270	1855230	
BEANS	1.5	920.0	570.0	1398	0	1398	1929240	796860	1132380	
UPLAND RICE	5.0	480.0	1020.0	857	0	857	1971100	674140	1096960	
SOYABEANS	2.5	555.0	657.0	652	0	652	904650	434884	469766	
TOMATO	40.0	110.0	2652.0	326	0	326	1434400	857812	565588	
CASSAVA	20.0	160.0	2193.0	120	0	120	384000	263160	120840	
TARO	35.0	160.0	3264.0	109	0	109	510400	355776	254624	
Sub-Total				5308	0	5308	10464290	4967902	5496388	
PLANTAIN	35.0	150.0	1697.0	112	0	112	588000	188944	399056	
ORANGE	50.0	110.0	1701.0	655	71	726	3993000	1234926	2758074	
COCOA	1.5	3245.0	1478.0	124	586	710	3455925	1049380	2406545	
MANGO	30.0	160.0	1102.0	0	183	183	782400	179626	602774	
PAPAYA	25.0	160.0	1230.0	27	0	27	108000	33210	74790	
OTHERS	12.0	80.0	15.0	8	0	8	7580	120	7560	
PINEAPPLE	25.0	360.0	2045.0	217	0	217	1953000	443765	1509235	
OIL PALM	25.0	110.0	1417.0	0	540	540	1544400	765180	779220	
Sub-Total				1143	1360	2503	12432405	3895151	8537254	
Total (IRR)				6491	1360	7811	22896695	8863053	14033642	
MAIZE	3.0	350.0	671.0			600	530000	402600	227400	
CASSAVA	9.0	160.0	800.0			400	575000	320000	256000	
TARO	16.0	160.0	1180.0			400	1024000	472000	552000	
PASTURE	10.0	16.6	45.0			0	0	0	0	
Sub-Total						1400	2230000	1194600	1035400	
ORANGE	25.0	110.0	900.0			400	1100000	360000	740000	
COCOA	1.7	3245.0	790.0			300	681450	237000	444450	
MANGO	15.0	160.0	950.0			200	480000	190000	290000	
Sub-Total						900	2251450	787000	1474450	
Total (MON-1)						2300	4491450	1981600	2509850	
Grand Total				8751	1360	10111	27388145	10846553	16543492	

NOTE  
(\*1) Inside the dyke  
(\*2) Outside the dyke



Planned Crop Pattern for Case 5 (ii) Area II (Lempira in 1984 price)

CROP	YIELD t/ha	UNIT LP/t	PRICE LP/ha	COST LP/ha	IN(*1) ha	Area II		TOTAL ha	GROSS INC. LP	T. COST LP	NET PROFIT LP
						OUT(*2) ha	LP				
MAIZE	5.0	350.0	745.0	1252	1252	361(*3)	1513	2822750	1201885	1621065	
BEANS	1.5	920.0	570.0	1175	1175	0	1175	1621500	669750	951750	
UPLAND RICE	5.0	480.0	1020.0	720	720	0	720	1656000	734400	921600	
SOYABEANS	2.5	555.0	657.0	0	0	485(*4)	485	672938	323495	349443	
TOMATO	40.0	110.0	2652.0	274	274	0	274	1205500	729368	475212	
CASSAVA	20.0	160.0	2193.0	0	0	101	101	323200	221493	101707	
TARO	35.0	160.0	3254.0	0	0	91	91	509600	287024	212576	
Sub-Total				3421	1038	4459	4459	8811588	4177235	4634353	
PLANTAIN	35.0	150.0	1687.0	0	0	95	95	498750	160265	338485	
ORANGE	50.0	110.0	1701.0	445	445	59	504	2772000	857304	1914696	
COCOA	1.5	3245.0	1478.0	0	0	590	590	2871825	872020	1999805	
MANGO	30.0	160.0	1102.0	0	0	137	137	657600	150974	506626	
PAPAYA	25.0	160.0	1230.0	0	0	23	23	92000	28290	63710	
OTHERS	12.0	90.0	15.0	0	0	7	7	6720	105	6615	
PINEAPPLE	25.0	360.0	2045.0	183	183	0	183	1647000	374235	1272765	
OIL PALM	26.0	110.0	1417.0	0	0	460	460	1315600	651820	653780	
Sub-Total				628	1371	1899	1899	9861495	3095013	6766482	
Total (IRR)				4049	2409	6458	6458	18973083	7272248	11400835	
MAIZE	3.0	350.0	671.0	0	0	0	0	0	0	0	
CASSAVA	9.0	160.0	800.0	0	0	0	0	0	0	0	
TARO	16.0	160.0	1180.0	0	0	0	0	0	0	0	
PASTURE	10.0	15.6	45.0	0	0	2300	2300	381800	103500	278300	
Sub-Total				0	0	2300	2300	381800	103500	278300	
ORANGE	25.0	110.0	900.0	2400	2400	0	2400	5500000	2160000	4440000	
COCOA	.7	3245.0	790.0	0	0	0	0	0	0	0	
MANGO	15.0	160.0	950.0	0	0	0	0	0	0	0	
Sub-Total				2400	2400	0	2400	5500000	2160000	4440000	
Total (NON-I)				4700	4700	0	4700	5981800	2263500	4718300	
Grand Total				8749	2409	11158	11158	25654883	9555748	16113135	

NOTE  
 (\*1) Inside the dyke  
 (\*2) Outside the dyke  
 (\*3) Annual flood damage, equivalent to crops from 45ha, is reduced (406%, 5%, 22)  
 (\*4) Annual flood damage, equivalent to crops from 63ha, is reduced (548%, 5%, 23)

Planned Crop Pattern for Case 5 (iii) TOTAL AREA (Lempina in 1984 price)

CROP	YIELD t/ha	UNIT Lp/t	COST Lp/ha	TOTAL AREA			GROSS INC. Lp	T. COST Lp	NET PROFIT Lp
				IN(*1) ha	OUT(*2) ha	TOTAL ha			
MAIZE	5.0	350.0	745.0	3098	361(*3)	3459	5053250	2576555	3476295
BEANS	1.5	920.0	570.0	2573	0	2573	3550740	1465610	2084130
UPLAND RICE	5.0	450.0	1020.0	1577	0	1577	3627100	1508540	2018550
SOYABEANS	2.5	555.0	657.0	552	485(*4)	1137	1577588	758379	812209
TOMATO	40.0	110.0	2652.0	500	0	500	2640000	1597200	1042800
CASSAVA	20.0	150.0	2193.0	120	101	221	707200	484653	222547
TARO	35.0	150.0	3264.0	109	91	200	1120000	692800	467200
Sub-Total				8729	1038	9767	19275878	9145137	10130741
PLANTAIN	35.0	150.0	1597.0	112	95	207	1085750	349208	737541
ORANGE	50.0	110.0	1701.0	1100	130	1230	6765000	2092230	4672770
COCOA	1.5	3245.0	1478.0	124	1176	1300	6327750	1921400	4406350
MANGO	30.0	150.0	1102.0	0	300	300	1440000	336500	1109400
PAPAYA	25.0	150.0	1230.0	27	23	50	200000	64500	135500
OTHERS	12.0	80.0	15.0	8	7	15	14400	225	14175
PIHEAPPLE	25.0	350.0	2045.0	400	0	400	3500000	818000	2782000
OIL PALM	25.0	110.0	1417.0	0	1000	1000	2850000	1417000	1443000
Sub-Total				1771	2731	4502	22293900	6990154	15303735
Total (IRR)				10500	3769	14269	41569778	16135301	25434477
MAIZE	3.0	350.0	571.0		500	500	530000	402500	227400
CASSAVA	9.0	150.0	800.0		400	400	575000	320000	255000
TARO	16.0	150.0	1180.0		400	400	1024000	472000	552000
PASTURE	10.0	16.6	45.0		2300	2300	381800	103500	278300
Sub-Total					3700	3700	2611800	1298100	1313700
ORANGE	25.0	110.0	900.0		2800	2800	7700000	2520000	5180000
COCOA	.7	3245.0	790.0		300	300	681450	237000	444450
MANGO	15.0	150.0	950.0		200	200	480000	190000	290000
Sub-Total					3300	3300	8861450	2947000	5914450
Total (NON-I)					7000	7000	11473250	4245100	7228150
Grand Total				17500	3769	21269	53043028	20380401	32652627

NOTE

- (\*1) Inside the dyke
- (\*2) Outside the dyke
- (\*3) Annual flood damage, equivalent to crops from 45ha, is reduced (406% 5\*. 22)
- (\*4) Annual flood damage, equivalent to crops from 63ha, is reduced (548% 5\*. 23)

Net Income from Tree Crops for Case 5 AREA I  
(1000 Lempins in 1984 price)

CROPS	AREA (ha)	YEAR															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ANNUAL CROP	5308	4397	4397	4947	4947	5496	5496	5496	5496	5496	5496	5496	5496	5496	5496	5496	5496
PLANTAIN	112	-68	399	399	399	399	399	399	399	399	399	399	399	399	399	399	399
ORANGE	726	-1664	-693	-727	-488	34	558	1560	1241	1880	2358	2588	2758	2758	2758	2758	2758
COCOA	710	-1045	28	1020	1218	1754	2171	2407	2407	2407	2407	2407	2407	2407	2407	2407	2407
PANANG	163	-355	-124	-159	-148	-154	-75	-23	81	186	290	394	499	551	603	603	603
PAPAYA	27	-86	-38	-33	-12	10	45	75	75	75	75	75	75	75	75	75	75
OTHERS	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
PINEAPPLE	217	-703	1509	1509	1509	1509	1509	1509	1509	1509	1509	1509	1509	1509	1509	1509	1509
OIL PALM	510	-1328	-136	-182	-161	-53	224	518	627	720	779	779	779	779	779	779	779
Sub-Total	2503	-5240	952	1433	2326	3507	4839	6453	6347	7183	7826	8169	8433	8486	8538	8538	8538
Total (IRR)	7811	-843	9348	6780	7822	9004	10335	11948	11843	12679	13322	13666	13930	13982	14034	14034	14034
ANNUAL CROP	1400	928	828	932	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035
ORANGE	400	-446	-186	-195	-131	9	150	418	333	504	633	597	740	740	740	740	740
COCOA	300	-193	5	188	224	323	400	443	443	443	443	443	443	443	443	443	443
PANANG	200	-171	-60	-77	-71	-74	-36	-11	39	89	140	190	240	265	290	290	290
Sub-Total	900	-810	-241	-84	23	259	513	891	615	1037	1216	1330	1423	1448	1473	1473	1473
Total (HIGH-I)	2300	19	588	781	1058	1294	1549	1865	1891	2073	2251	2366	2459	2484	2509	2509	2509
Grand Total	10111	-625	5937	7161	8880	10298	11884	13836	13594	14752	15573	16031	16388	16456	16543	16543	16543

Net Income from Tree Crops for Case 5 AREA II  
(1000 Lempra in 1984 price)

CROPS	AREA (ha)	YEAR														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
ANNUAL CROP	4459	3707	3707	4171	4171	4534	4534	4534	4534	4534	4534	4534	4534	4534	4534	4534
PLANTAIN	95	-58	338	338	338	338	338	338	338	338	338	338	338	338	338	338
ORANGE	504	-1155	-481	-505	-339	24	388	1083	861	1305	1637	1804	1915	1915	1915	1915
COCOA	530	-868	24	474	1012	4458	1804	2000	2000	2000	2000	2000	2000	2000	2000	2000
MANGO	137	-298	-105	-134	-124	-129	-63	-13	68	158	244	331	419	463	507	507
PAPAYA	23	-73	-32	-28	-10	9	38	64	64	64	64	64	64	64	64	64
OTHERS	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PINEAPPLE	183	-593	1273	1273	1273	1273	1273	1273	1273	1273	1273	1273	1273	1273	1273	1273
OIL PALM	460	-1131	-116	-155	-139	-48	191	441	534	613	664	664	664	664	664	664
Sub-Total	1993	-4169	907	1543	2020	2833	3875	5187	5145	5756	6227	6481	6679	6723	6767	6767
Total (IRR)	6458	-462	4615	5814	6554	7568	8510	9821	9780	10390	10861	11115	11314	11357	11401	11401
ANNUAL CROP	2300	223	223	250	278	278	278	278	278	278	278	278	278	278	278	278
ORANGE	2400	-2678	-1116	-1165	-1171	-785	55	698	2510	1997	3026	3797	4183	4440	4440	4440
COCOA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MANGO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sub-Total	2400	-2678	-1116	-1165	-785	55	698	2510	1997	3026	3797	4183	4440	4440	4440	4440
Total (MON-I)	4700	-2456	-893	-921	-507	334	1176	2789	2275	3305	4075	4462	4718	4718	4718	4718
Grand Total	11158	-2916	3721	4555	6148	7901	9786	12610	12055	13595	14936	15577	16032	16076	16119	16119

Net Income from Tree Crops for Case 5 TOTAL AREA  
(1000 Lempirs in 1984 Price)

CROPS	AREA (ha)	YEAR															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15*	16
ANNUAL CROP	9757	8105	8105	9118	9118	10131	10131	10131	10131	10131	10131	10131	10131	10131	10131	10131	10131
PLANTAIN	207	-126	738	738	738	738	738	738	738	738	738	738	738	738	738	738	738
ORANGE	1230	-2819	-1173	-1232	-827	58	346	2633	2102	3184	3986	4402	4673	4673	4673	4573	4573
COCCA	1300	-1914	52	1045	2231	3212	3975	4407	4407	4407	4407	4407	4407	4407	4407	4407	4407
MANGO	300	-853	-229	-293	-272	-283	-138	-42	150	342	534	725	918	1014	1109	1109	1109
PAPAYA	50	-158	-72	-61	-21	18	83	139	139	139	139	139	139	139	139	139	139
OTHERS	15	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
PINEAPPLE	400	-1295	2782	2782	2782	2782	2782	2782	2782	2782	2782	2782	2782	2782	2782	2782	2782
OIL PALM	1000	-2459	-252	-337	-299	-99	415	939	1161	1333	1443	1443	1443	1443	1443	1443	1443
Sub-Total	4502	-9410	1859	2743	4345	6441	8814	11539	11492	12938	14052	14650	15113	15209	15304	15304	15304
Total (IRR)	14269	-1305	9954	11860	14476	16571	18945	21770	21623	23069	24183	24781	25243	25339	25435	25435	25435
ANNUAL CROP	3700	1051	1051	1182	1314	1314	1314	1314	1314	1314	1314	1314	1314	1314	1314	1314	1314
ORANGE	2800	-3125	-1302	-1366	-916	54	1047	2939	2330	3531	4430	4880	5180	5180	5180	5180	5180
COCCA	300	-193	5	188	224	323	400	443	443	443	443	443	443	443	443	443	443
MANGO	200	-171	-60	-77	-71	-74	-36	-11	39	89	140	190	240	255	290	290	290
Sub-Total	3300	-3488	-1357	-1317	-1295	314	1411	3361	2812	4064	5013	5513	5863	5868	5913	5913	5913
Total (NDM-I)	7000	-2437	-306	-135	-73	551	2725	4575	4126	5377	6326	6827	7177	7202	7227	7227	7227
Grand Total	21269	-3742	9659	11726	11521	15028	18199	21670	26445	25749	28446	30509	31608	32420	32542	32662	32662

Economic Cost (Annual Crop + Pasture) for Case 5  
(Lempira in 1984 price)

CROPS	AREA (ha)	MNL (M-D)	MANUAL	MACHINE	INPUT	OTHERS	TOTAL	ECO UNIT	TTL (*1000)	M-D (IRR)
AREA I										
MAIZE	1846	74	441	120	147	37	745	591	1091	136604
BEANS	1328	50	300	110	40	120	570	458	640	89900
UPLAND RICE	857	80	480	124	259	157	1020	876	751	89560
SOYBEANS	652	31	186	215	206	60	667	679	443	20212
TOMATO	326	83	498	546	1018	800	2662	2804	914	27058
CASSAVA	120	196	1176	140	158	719	2193	1680	202	23520
TARO	109	129	774	0	493	1997	3264	3000	327	14061
SUB-TOTAL	5309								4368	359915
Total (IRR)										
MAIZE	7811	66	397	108	132	33	670	532	4155	515526
CASSAVA	600	72	429	51	58	262	800	613	368	43200
TARO	400	47	280	0	178	722	1180	1085	434	18800
TOTAL	400	5	30	0	5	10	45	31	12	2000
TOTAL	14519								9337	939441
AREA II										
MAIZE	1613	74	441	120	147	37	745	591	953	119362
BEANS	1175	50	300	110	40	120	570	458	538	58750
UPLAND RICE	720	80	480	134	259	157	1020	876	631	57600
SOYBEANS	485	31	186	215	206	60	667	679	329	15035
TOMATO	274	83	498	546	1018	600	2662	2804	768	22742
CASSAVA	101	196	1176	140	158	719	2193	1680	170	19796
TARO	91	129	774	0	493	1997	3264	3000	273	11738
SUB-TOTAL	4459								3662	305024
Total (IRR)										
MAIZE	6458	66	397	108	132	33	670	532	3436	426228
CASSAVA	0	72	429	51	58	262	800	613	0	0
TARO	0	47	280	0	178	722	1180	1085	0	0
TOTAL	0	5	30	0	5	10	45	31	0	0
TOTAL	10917								7098	731252
TOTAL AREA										
MAIZE	3459	74	441	120	147	37	745	591	2044	255956
BEANS	2573	50	300	110	40	120	570	458	1178	128650
UPLAND RICE	1577	80	480	124	259	157	1020	876	1381	126160
SOYBEANS	1137	31	186	215	206	60	667	679	772	35247
TOMATO	600	83	498	546	1018	600	2662	2804	1682	49800
CASSAVA	221	196	1176	140	158	719	2193	1680	371	43316
TARO	200	129	774	0	493	1997	3264	3000	600	25800
SUB-TOTAL	9767								8028	564939
Total (IRR)										
MAIZE	14269	66	397	108	132	33	670	532	7591	941754
CASSAVA	600	72	429	51	58	262	800	613	368	43200
TARO	400	47	280	0	178	722	1180	1085	434	18800
TOTAL	400	5	30	0	5	10	45	31	12	2000
TOTAL	25436								16433	1670693

Economic Cost for Case 5 (i) ORANGE-IRR  
(Lempira in 1984 price)

	1	2	3	4	5	6	7	8
MIL (M-D)	175	93	66	103	110	116	122	122
MANUAL	1050	558	516	618	660	696	732	732
MACHINE+INPUT	170	255	320	405	460	505	630	630
OTHERS	1072	141	161	199	212	242	279	279
TOTAL	2292	954	997	1222	1332	1493	1701	1701
AREA I (ha)	726	726	726	726	726	726	726	726
ECO UNIT	1810	739	819	1014	1117	1284	1508	1508
TTL(*1000)	1314	537	595	736	811	932	1095	1095
M-D	127050	67518	52436	74778	79860	84216	88572	88572
AREA II (ha)	504	504	504	504	504	504	504	504
ECO UNIT	1810	739	819	1014	1117	1284	1508	1508
TTL(*1000)	912	372	413	511	563	647	760	760
M-D	88200	46872	43344	51912	55440	58464	61488	61488

Table H-16 Economic Cost for Case 5 (ii) ORANGE-NIR  
(Lempira in 1984 price)

	1	2	3	4	5	6	7	8
MIL (M-D)	93	49	46	55	58	61	65	65
MANUAL	558	294	276	330	248	366	390	390
MACHINE+INPUT	90	135	169	214	243	294	365	365
OTHERS	565	76	83	103	114	130	145	145
TOTAL	1213	505	528	647	605	790	900	900
AREA I (ha)	400	400	400	400	400	400	400	400
ECO UNIT	957	392	432	536	542	681	796	796
TTL(*1000)	383	157	173	214	217	272	318	318
M-D	37200	19600	19400	22000	23200	24400	26000	26000
AREA II (ha)	2400	2400	2400	2400	2400	2400	2400	2400
ECO UNIT	957	392	432	536	542	681	796	796
TTL(*1000)	2297	941	1037	1286	1301	1634	1910	1910
M-D	223200	117500	110400	132000	139200	145400	155000	155000

Economic Cost for Case 5 (iii) COCOA-IRR

(Lempira in 1984 price)

	1	2	3	4	5	6	7	8
MPL (M-D)	50	30	46	62	103	110	115	113
MANUAL	300	180	276	372	518	550	590	578
MACHINE+INPUT	115	170	240	350	410	410	410	410
OTHERS	1057	70	145	320	314	353	385	390
TOTAL	1472	420	661	942	1342	1423	1485	1478
AREA I (ha)	710	710	710	710	710	710	710	710
ECC UNIT	1351	373	583	844	1135	1195	1243	1242
TTL(*1000)	959	255	414	599	807	849	883	882
M-D	35500	21300	32660	44020	73130	78100	91550	80230
AREA II (ha)	590	590	590	590	590	590	590	590
ECC UNIT	1351	373	583	844	1135	1195	1243	1242
TTL(*1000)	797	220	344	498	670	705	733	733
M-D	29500	17700	27140	35590	60770	64900	67850	65570

Table H-16 Economic Cost for Case 5 (iv) COCOA-NIR

(Lempira in 1984 price)

	1	2	3	4	5	6	7	8
MPL (M-D)	27	16	25	33	55	59	61	60
MANUAL	162	96	150	198	330	354	366	360
MACHINE+INPUT	61	91	128	187	219	219	219	219
OTHERS	564	37	75	119	158	188	209	211
TOTAL	787	224	353	504	717	761	794	790
AREA I (ha)	300	300	300	300	300	300	300	300
ECC UNIT	721	199	310	452	607	639	666	665
TTL(*1000)	216	60	93	136	182	192	200	200
M-D	8100	4800	7500	9900	16500	17700	18300	18000
AREA II (ha)	0	0	0	0	0	0	0	0
ECC UNIT	721	199	310	452	607	639	666	665
TTL(*1000)	0	0	0	0	0	0	0	0
M-D	0	0	0	0	0	0	0	0



Economic Cost for Case 5 (v) MANGO-IRR (Lempira in 1984 price)

	1	2	3	4	5	6	7	8
MIL (M-D)	161	77	68	80	85	86	90	90
MANUAL	966	482	408	480	510	516	540	540
MACHINE+INPUT	373	190	253	335	352	422	422	422
OTHERS	937	111	123	163	194	324	139	139
TOTAL	2176	763	784	978	1066	1262	1101	1101
AREA I (ha)	163	163	163	163	163	163	163	163
ECO UNIT	1761	580	643	822	902	1110	937	937
TTL(*1000)	287	95	105	134	147	181	153	153
M-D	25243	12551	11084	13040	13855	14018	14570	14670
AREA II (ha)	137	137	137	137	137	137	137	137
ECO UNIT	1761	580	643	822	902	1110	937	937
TTL(*1000)	241	79	88	113	124	152	128	128
M-D	22097	10549	9316	10960	11645	11782	12330	12330

Table H-15 Economic Cost for Case 5 (vi) MANGO-NIR (Lempira in 1984 price)

	1	2	3	4	5	6	7	8
MIL (M-D)	139	66	59	69	73	74	78	78
MANUAL	834	396	354	414	438	444	468	468
MACHINE+INPUT	235	164	218	289	312	364	364	364
OTHERS	807	98	104	140	169	280	117	117
TOTAL	1876	658	676	843	919	1088	949	949
AREA I (ha)	200	200	200	200	200	200	200	200
ECO UNIT	1518	501	554	708	778	957	806	806
TTL(*1000)	304	100	111	142	156	191	161	161
M-D	27800	13200	11800	13800	14500	14800	15600	15600
AREA II (ha)	0	0	0	0	0	0	0	0
ECO UNIT	1518	501	554	708	778	957	806	806
TTL(*1000)	0	0	0	0	0	0	0	0
M-D	0	0	0	0	0	0	0	0

Economic Cost for Case 5 (vii) PLANTAIN, PAPAYA (Lempira in 1984 price)

	PLANTAIN				PAPAYA			
	1	2	3	4	1	2	3	4
MHL (M-D)	296	145	145	145	239	118	114	108
MANUAL	1776	870	870	870	1428	708	684	648
MACHINE+INPUT	306	360	360	360	580	249	237	194
OTHERS	776	457	457	457	1161	489	473	388
TOTAL	2858	1687	1687	1687	3169	1442	1394	1230
AREA I (ha)	112	112	112	112	27	27	27	27
ECO UNIT	2047	1342	1342	1342	2600	1149	1111	955
TTL (*1000)	229	150	150	150	70	31	30	26
M-D	33152	16240	16240	16240	6426	3186	3078	2916
AREA II (ha)	95	95	95	95	23	23	23	23
ECO UNIT	2047	1342	1342	1342	2600	1149	1111	955
TTL (*1000)	194	127	127	127	80	26	26	22
M-D	28120	13775	13775	13775	5474	2714	2622	2484

Table H-16 Economic Cost for Case 5 (viii) PINEAPPLE, OTHERS (Lempira in 1984 price)

	PINEAPPLE				OTHERS			
	1	2	3	4	1	2	3	4
MHL (M-D)	250	155	155	155	2	2	2	2
MANUAL	1500	990	990	990	12	12	12	12
MACHINE+INPUT	579	352	352	352	1	1	1	1
OTHERS	1159	703	703	703	2	2	2	2
TOTAL	3238	2045	2045	2045	15	15	15	15
AREA I (ha)	217	217	217	217	8	8	8	8
ECO UNIT	2633	1638	1638	1638	9	9	9	9
TTL (*1000)	571	355	355	355	0	0	0	0
M-D	54250	35805	35805	35805	16	16	16	16
AREA II (ha)	183	183	183	183	7	7	7	7
ECO UNIT	2633	1638	1638	1638	9	9	9	9
TTL (*1000)	482	300	300	300	0	0	0	0
M-D	45750	30195	30195	30195	14	14	14	14

Economic Cost for Case 5 (ix) OIL PALM-IRR

(Lempira in 1984 Price)

	1	2	3	4	5	6	7	8	9	10
MHL (M-D)	24	12	12	20	51	56	56	63	64	60
MANUAL	144	72	72	120	306	336	348	378	384	360
MACHINE+INPUT	2015	130	183	277	328	483	617	813	835	1007
OTHERS	300	50	50	50	50	50	50	50	50	50
TOTAL	2459	252	305	447	684	869	1015	1241	1359	1417
AREA I (ha)	540	540	540	540	540	540	540	540	540	540
ECC UNIT	2891	249	315	456	613	822	995	1255	1411	1489
TTL (*1000)	1561	134	170	246	331	444	537	678	762	804
M-D	12860	6480	6480	10800	27540	30240	31320	34020	34560	32400
AREA II (ha)	460	460	460	460	460	460	460	460	460	460
ECC UNIT	2891	249	315	456	613	822	995	1255	1411	1489
TTL (*1000)	1330	115	145	210	282	378	458	577	649	685
M-D	11040	5520	5520	9200	23460	25760	26680	28980	28440	27600

Economic Cost for Case 5 (Total)  
( 1000 Lempira in 1984 price )

	1	2	3	4	5	6	7	8	9	10
<b>AREA I</b>										
ORANGE-IRR	1314	537	595	736	811	932	1095	1095	1095	1095
ORANGE-NIR	393	157	173	214	217	272	318	318	318	318
COCOA-IRR	959	265	414	599	607	649	883	883	883	883
COCOA-NIR	216	60	93	136	102	192	200	200	200	200
MANGO-IRR	287	95	105	134	147	181	153	153	153	153
MANGO-NIR	304	100	111	142	156	191	161	161	161	161
PLANTAIN	239	150	150	150	150	150	150	150	150	150
PAPAYA	70	31	30	26	26	26	26	26	26	26
PINEAPPLE	571	355	355	355	355	355	355	355	355	355
OTHERS	0	0	0	0	0	0	0	0	0	0
OIL PALM	1551	134	170	246	331	444	537	678	762	894
<b>TOTAL</b>	<b>5894</b>	<b>1884</b>	<b>2196</b>	<b>2738</b>	<b>3182</b>	<b>3992</b>	<b>3878</b>	<b>4018</b>	<b>4102</b>	<b>4144</b>
<b>ANNUAL CROPS</b>										
	9337	9337	9337	9337	9337	9337	9337	9337	9337	9337
<b>GRAND TOTAL</b>	<b>15231</b>	<b>11221</b>	<b>11533</b>	<b>12075</b>	<b>12519</b>	<b>12929</b>	<b>13215</b>	<b>13355</b>	<b>13439</b>	<b>13481</b>
<b>AREA II</b>										
ORANGE-IRR	912	372	413	511	563	647	760	760	760	760
ORANGE-NIR	2397	941	1037	1206	1301	1634	1910	1910	1910	1910
COCOA-IRR	797	220	344	400	670	706	733	733	733	733
COCOA-NIR	0	0	0	0	0	0	0	0	0	0
MANGO-IRR	241	79	88	113	124	152	128	128	128	128
MANGO-NIR	0	0	0	0	0	0	0	0	0	0
PLANTAIN	194	127	127	127	127	127	127	127	127	127
PAPAYA	60	26	26	22	22	22	22	22	22	22
PINEAPPLE	482	300	300	300	300	300	300	300	300	300
OTHERS	0	0	0	0	0	0	0	0	0	0
OIL PALM	1330	115	145	210	282	378	450	577	649	605
<b>TOTAL</b>	<b>6313</b>	<b>2150</b>	<b>2400</b>	<b>3067</b>	<b>3389</b>	<b>3956</b>	<b>4438</b>	<b>4557</b>	<b>4623</b>	<b>4555</b>
<b>ANNUAL CROPS</b>										
	7098	7098	7098	7098	7098	7098	7098	7098	7098	7098
<b>GRAND TOTAL</b>	<b>13411</b>	<b>9278</b>	<b>9578</b>	<b>10165</b>	<b>10487</b>	<b>11064</b>	<b>11936</b>	<b>11655</b>	<b>11727</b>	<b>11763</b>
<b>TOTAL AREA</b>										
ORANGE-IRR	2226	909	1007	1247	1374	1579	1855	1855	1855	1855
ORANGE-NIR	2600	1098	1210	1501	1516	1907	2223	2223	2223	2223
COCOA-IRR	1756	485	758	1097	1477	1555	1615	1615	1615	1615
COCOA-NIR	216	60	93	136	182	192	200	200	200	200
MANGO-IRR	520	174	193	247	271	333	281	281	281	281
MANGO-NIR	304	100	111	142	156	191	161	161	161	161
PLANTAIN	424	278	278	278	278	278	278	278	278	278
PAPAYA	130	57	56	48	48	48	48	48	48	48
PINEAPPLE	1053	655	655	655	655	655	655	655	655	655
OTHERS	0	0	0	0	0	0	0	0	0	0
OIL PALM	2881	249	315	456	613	822	995	1255	1411	1400
<b>TOTAL</b>	<b>12208</b>	<b>4065</b>	<b>4676</b>	<b>5007</b>	<b>6572</b>	<b>7560</b>	<b>8318</b>	<b>8577</b>	<b>8733</b>	<b>8911</b>
<b>ANNUAL CROPS</b>										
	16433	16433	16433	16433	16433	16433	16433	16433	16433	16433
<b>GRAND TOTAL</b>	<b>28641</b>	<b>20498</b>	<b>21109</b>	<b>22240</b>	<b>23005</b>	<b>23992</b>	<b>24791</b>	<b>25010</b>	<b>25166</b>	<b>25244</b>

Economic Gross Income from Annual Crops for Case 5

CROP	AREA I (ha)	AREA II (ha)	UNIT PRICE (Lps)	YIELD (ton/ha)	AREA I (1000 Lps)	AREA II (1000 Lps)	TOTAL AREA (1000 Lps)
MAIZE-IRR	1846	1613	360	5.0	3507	3065	6572
BEANS-IRR	1396	1175	1012	1.5	2122	1784	3906
UPLAND RICE-IRR	857	720	467	5.0	2001	1681	3682
SOYABEANS-IRR	652	485	658	2.5	1073	798	1871
TOMATO-IRR	325	274	121	40.0	1578	1326	2904
CASSAVA-IRR	120	101	176	20.0	422	356	778
TARO-IRR	109	91	176	35.0	671	561	1232
SUB TOTAL	5308	4459			11374	9571	20945
MAIZE-NIR	500	0	360	3.0	684	0	684
CASSAVA-NIR	400	0	176	9.0	634	0	634
TARO-NIR	400	0	176	15.0	1126	0	1126
PASTURE-NIR	0	2300	18	10.0	0	414	414
SUB TOTAL	1400	2300			2444	414	2858
TOTAL	6708	6759			13818	9985	23803

Economic Gross Income for Case 5 (i) AREA I

(1000 Lempire in 1994 price)

CROPS	AREA (ha)	YEAR														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
ANNUAL CROP	5308	9099	9099	10237	10237	11374	11374	11374	11374	11374	11374	11374	11374	11374	11374	11374
PLANTAIN	112	252	588	588	588	588	588	588	588	588	588	588	588	588	588	588
ORANGE	726	0	0	179	536	1250	2005	3125	2768	3483	4018	4286	4465	4165	4165	4165
COCONUT	710	0	1049	1703	2189	2787	3252	3485	3485	3485	3485	3485	3485	3485	3485	3485
MANGO	163	0	0	0	25	52	104	156	251	355	469	574	678	730	782	782
PAPAYA	27	0	0	0	22	43	78	108	108	108	108	108	108	108	108	108
OTHERS	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
PINEAPPLE	217	0	1953	2024	2024	2024	2024	2024	2024	2024	2024	2024	2024	2024	2024	2024
OIL PALM	540	0	0	74	258	518	962	1480	1702	1850	1923	1923	1923	1923	1923	1923
Sub-Total	2503	260	3669	4576	5651	7270	9021	10974	10944	11911	12623	12996	13279	13331	13383	13383
Total (IRR)	7811	9359	13906	14813	17025	18644	20395	22348	22318	23285	23997	24370	24653	24705	24757	24757
ANNUAL CROP	1400	1955	2200	2200	2444	2444	2444	2444	2444	2444	2444	2444	2444	2444	2444	2444
ORANGE	400	0	0	48	148	344	552	861	763	950	1107	1181	1230	1230	1230	1230
COCONUT	300	0	207	336	432	550	641	687	687	687	687	687	687	687	687	687
MANGO	200	0	0	0	16	32	64	96	150	224	288	352	416	448	480	480
Sub-Total	900	0	207	385	596	926	1257	1644	1610	1871	2082	2220	2333	2365	2397	2397
Total (NON-I)	2300	1955	2407	2585	3040	3370	3701	4088	4054	4315	4526	4664	4777	4809	4841	4841
Grand Total	10111	11314	13997	16312	17397	20069	22014	24096	26436	28372	29523	29034	29430	29514	29598	29598

Economic Gross Income for Case 5 (iii) TOTAL AREA  
(1000 Lempire in 1984 price)

CROPS	APER (ha)	YEAR															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ANNUAL CROP	9767	16756	18851	18851	20945	20945	20945	20945	20945	20945	20945	20945	20945	20945	20945	20945	20945
PLANTAIN	207	1087	1087	1087	1087	1087	1087	1087	1087	1087	1087	1087	1087	1087	1087	1087	1087
ORANGE	1230	0	0	303	908	2118	3397	5295	4690	5900	5808	7262	7565	7565	7565	7565	7565
COCOA	1300	0	603	3117	4008	5104	5954	6380	6380	6380	6380	6380	6380	6380	6380	6380	6380
MANGO	300	0	0	0	48	96	192	288	480	872	864	1056	1248	1344	1440	1440	1440
PAPAYA	50	0	0	0	40	80	144	200	200	200	200	200	200	200	200	200	200
OTHERS	15	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
PINEAPPLE	400	0	3600	3730	3730	3730	3730	3730	3730	3730	3730	3730	3730	3730	3730	3730	3730
OIL PALM	1000	0	0	137	478	959	1791	2740	3151	3425	3562	3562	3562	3562	3562	3562	3562
Sub-Total	4502	450	5304	6368	10313	13188	15359	19734	19732	21408	22645	23291	23786	23982	23978	23978	23978
Total (IRR)	14269	17236	22060	27239	31268	34133	37244	40679	40677	42353	43590	44236	44731	44827	44923	44923	44923
ANNUAL CROP	3700	2286	2286	2572	2658	2658	2658	2658	2658	2658	2658	2658	2658	2658	2658	2658	2658
ORANGE	2800	0	0	344	1033	2411	3867	6028	5340	6717	7750	8266	8610	8610	8610	8610	8610
COCOA	300	0	65	336	432	550	641	687	687	687	687	687	687	687	687	687	687
MANGO	200	0	0	0	16	32	64	96	160	224	288	352	416	448	480	480	480
Sub-Total	3300	0	65	680	1491	2983	4572	6811	6187	7628	8729	9305	9713	9745	9777	9777	9777
Total (NON-I)	7000	2286	2779	3252	4339	5851	7430	9669	9045	10486	11583	12163	12603	12635	12635	12635	12635
Grand Total	21269	19522	24411	28381	35597	39984	44674	50348	49722	52839	55173	56399	57302	57430	57558	57558	57558

Economic Gross Income for Case 5 (ii) AREA II  
(1000 Lempra in 1984 price)

CROPS	AREA (ha)	YEAR															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ANNUAL CROP	4459	7657	7657	8614	8614	9571	9571	9571	9571	9571	9571	9571	9571	9571	9571	9571	9571
PLANTAIN	95	214	499	499	499	499	499	499	499	499	499	499	499	499	499	499	499
ORANGE	504	0	0	124	372	868	1392	2170	1922	2418	2790	2976	3100	3100	3100	3100	3100
COCOA	590	0	274	1415	1819	2316	2702	2896	2896	2896	2896	2896	2896	2896	2896	2896	2896
MANGO	137	0	0	0	22	44	88	132	219	307	395	482	570	614	658	658	658
PAPAYA	23	0	0	0	18	37	55	92	92	92	92	92	92	92	92	92	92
OTHERS	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PINEAPPLE	183	0	1647	1706	1706	1706	1706	1706	1706	1706	1706	1706	1706	1706	1706	1706	1706
OIL PALM	460	0	0	63	220	441	819	1260	1449	1578	1639	1639	1639	1639	1639	1639	1639
Sub-Total	1999	221	2427	3083	3014	4663	5918	7279	8762	8790	9501	10024	10297	10509	10553	10597	10597
Total (IRR)	5458	7878	10084	11697	12428	14234	15489	16850	18333	18361	19072	19599	19868	20080	20124	20168	20168
ANNUAL CROP	2300	331	331	373	414	414	414	414	414	414	414	414	414	414	414	414	414
ORANGE	2400	0	0	295	886	2066	3314	5167	5167	4577	5758	6643	7085	7390	7390	7390	7390
COCOA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MANGO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sub-Total	2400	0	0	295	886	2066	3314	5167	5167	4577	5758	6643	7085	7390	7390	7390	7390
Total (NON-I)	4700	331	331	668	1300	2480	3728	5581	5581	4991	6172	7057	7499	7794	7794	7794	7794
Grand Total	11158	8209	10415	13096	14534	17969	20978	23914	23352	25244	26652	27367	27874	27918	27962	27962	27962



Economic Net Benefit for Case 5

(1000 Lempira in 1984 Price)

YEAR	AREA I			AREA II			TOTAL AREA			
	TTL-IRR	TTL-NIR	ECO-COS	TTL-IRR	TTL-NIR	ECO-COS	TTL-IRR	TTL-NIR	ECO-COS	NET-BNE
1	9359	1955	15231	7879	331	13411	17237	2286	28542	-9119
2	11977	2020	11221	10084	331	9278	22061	2351	20499	3913
3	13906	2407	11533	11597	373	9578	25503	2779	21111	7271
4	14813	2595	12075	12428	669	10165	27241	3252	22240	8253
5	17025	3040	12519	14234	1300	10487	31259	4340	23006	12593
6	10644	3370	12929	15489	2480	11064	34133	5850	23993	15990
7	20395	3701	13215	16850	3729	11536	37245	7429	24751	19923
8	22348	4088	13355	18333	5581	11655	40581	9669	25010	25340
9	22318	4054	13355	18361	4991	11655	40579	9048	25010	24714
10	23285	4315	13355	19072	6172	11655	42357	10487	25010	27834
11	23907	4526	13355	19595	7057	11655	43592	11583	25010	30165
12	24370	4664	13355	19888	7499	11655	44238	12153	25010	31391
13	24653	4777	13355	20080	7794	11655	44733	12571	25010	32294
14	24705	4809	13355	20124	7794	11655	44829	12603	25010	32422
15	24757	4841	13355	20168	7794	11655	44925	12635	25010	32550
16	24757	4841	13355	20168	7794	11655	44925	12635	25010	32550

Economic Benefit for Case 5

(1000 Lempire in 1984 price)

YEAR	CASE 1				CASE 2				
	WITHOUT PROJECT AREA I	WITHOUT PROJECT AREA II	WITH PROJECT AREA I	WITH PROJECT AREA II	WITHOUT PROJECT AREA I	WITHOUT PROJECT AREA II	WITH PROJECT AREA I	WITH PROJECT AREA II	TOTAL
1994	2295	1192	0	0	-6404	0	0	0	0
1995	2327	1210	0	0	257	0	0	0	0
1996	2359	1228	0	0	2228	0	0	0	0
1997	2391	1246	0	0	2739	0	0	0	0
1998	2423	1264	0	0	4931	0	0	0	0
1999	2455	1282	0	0	6438	0	0	0	0
1990	2487	1300	0	0	8202	0	0	0	-7704
1991	2519	1318	0	0	10370	0	0	0	-1300
1992	2551	1336	0	0	10274	0	0	0	-1318
1993	2583	1354	0	0	10274	0	0	0	-1336
1994	2615	1372	0	0	10274	0	0	0	-1354
1995	2647	1390	0	0	10274	0	0	0	-1372
1996	2679	1408	0	0	10274	0	0	0	-1390
1997	2711	1426	0	0	10274	0	0	0	-1408
1998	2743	1444	0	0	10274	0	0	0	-1426
1999	2775	1462	0	0	10274	0	0	0	-1444
2000	2807	1480	0	0	10274	0	0	0	-1462
2001	2839	1498	0	0	10274	0	0	0	-1480
2002	2871	1516	0	0	10274	0	0	0	-1498
2003	2903	1534	0	0	10274	0	0	0	-1516
2004	2935	1552	0	0	10274	0	0	0	-1534
2005	2967	1570	0	0	10274	0	0	0	-1552
2006	2999	1588	0	0	10274	0	0	0	-1570
2007	3031	1606	0	0	10274	0	0	0	-1588
2008	3063	1624	0	0	10274	0	0	0	-1606
2009	3095	1642	0	0	10274	0	0	0	-1624
2010	3127	1660	0	0	10274	0	0	0	-1642
2011	3159	1678	0	0	10274	0	0	0	-1660
2012	3191	1696	0	0	10274	0	0	0	-1678
2013	3223	1714	0	0	10274	0	0	0	-1696
2014	3255	1732	0	0	10274	0	0	0	-1714
2015	3287	1750	0	0	10274	0	0	0	-1732
2016	3319	1768	0	0	10274	0	0	0	-1750
2017	3351	1786	0	0	10274	0	0	0	-1768
2018	3383	1804	0	0	10274	0	0	0	-1786
2019	3415	1822	0	0	10274	0	0	0	-1804
2020	3447	1840	0	0	10274	0	0	0	-1822
2021	3479	1858	0	0	10274	0	0	0	-1840
2022	3511	1876	0	0	10274	0	0	0	-1858
2023	3543	1894	0	0	10274	0	0	0	-1876
2024	3575	1912	0	0	10274	0	0	0	-1894
2025	3607	1930	0	0	10274	0	0	0	-1912
2026	3639	1948	0	0	10274	0	0	0	-1930
2027	3671	1966	0	0	10274	0	0	0	-1948
2028	3703	1984	0	0	10274	0	0	0	-1966
2029	3735	2002	0	0	10274	0	0	0	-1984
2030	3767	2020	0	0	10274	0	0	0	-2002
2031	3799	2038	0	0	10274	0	0	0	-2020
2032	3831	2056	0	0	10274	0	0	0	-2038
2033	3863	2074	0	0	10274	0	0	0	-2056
2034	3895	2092	0	0	10274	0	0	0	-2074
2035	3927	2110	0	0	10274	0	0	0	-2092
2036	3959	2128	0	0	10274	0	0	0	-2110
2037	3991	2146	0	0	10274	0	0	0	-2128
2038	4023	2164	0	0	10274	0	0	0	-2146
2039	4055	2182	0	0	10274	0	0	0	-2164
2040	4087	2200	0	0	10274	0	0	0	-2182
2041	4119	2218	0	0	10274	0	0	0	-2200
2042	4151	2236	0	0	10274	0	0	0	-2218
2043	4183	2254	0	0	10274	0	0	0	-2236
2044	4215	2272	0	0	10274	0	0	0	-2254
2045	4247	2290	0	0	10274	0	0	0	-2272
2046	4279	2308	0	0	10274	0	0	0	-2290
2047	4311	2326	0	0	10274	0	0	0	-2308
2048	4343	2344	0	0	10274	0	0	0	-2326
2049	4375	2362	0	0	10274	0	0	0	-2344
2050	4407	2380	0	0	10274	0	0	0	-2362
2051	4439	2398	0	0	10274	0	0	0	-2380
2052	4471	2416	0	0	10274	0	0	0	-2398
2053	4503	2434	0	0	10274	0	0	0	-2416
2054	4535	2452	0	0	10274	0	0	0	-2434
2055	4567	2470	0	0	10274	0	0	0	-2452
2056	4599	2488	0	0	10274	0	0	0	-2470
2057	4631	2506	0	0	10274	0	0	0	-2488
2058	4663	2524	0	0	10274	0	0	0	-2506
2059	4695	2542	0	0	10274	0	0	0	-2524
2060	4727	2560	0	0	10274	0	0	0	-2542
2061	4759	2578	0	0	10274	0	0	0	-2560
2062	4791	2596	0	0	10274	0	0	0	-2578
2063	4823	2614	0	0	10274	0	0	0	-2596
2064	4855	2632	0	0	10274	0	0	0	-2614
2065	4887	2650	0	0	10274	0	0	0	-2632
2066	4919	2668	0	0	10274	0	0	0	-2650
2067	4951	2686	0	0	10274	0	0	0	-2668
2068	4983	2704	0	0	10274	0	0	0	-2686
2069	5015	2722	0	0	10274	0	0	0	-2704
2070	5047	2740	0	0	10274	0	0	0	-2722
2071	5079	2758	0	0	10274	0	0	0	-2740
2072	5111	2776	0	0	10274	0	0	0	-2758
2073	5143	2794	0	0	10274	0	0	0	-2776
2074	5175	2812	0	0	10274	0	0	0	-2794
2075	5207	2830	0	0	10274	0	0	0	-2812
2076	5239	2848	0	0	10274	0	0	0	-2830
2077	5271	2866	0	0	10274	0	0	0	-2848
2078	5303	2884	0	0	10274	0	0	0	-2866
2079	5335	2902	0	0	10274	0	0	0	-2884
2080	5367	2920	0	0	10274	0	0	0	-2902
2081	5399	2938	0	0	10274	0	0	0	-2920
2082	5431	2956	0	0	10274	0	0	0	-2938
2083	5463	2974	0	0	10274	0	0	0	-2956
2084	5495	2992	0	0	10274	0	0	0	-2974
2085	5527	3010	0	0	10274	0	0	0	-2992
2086	5559	3028	0	0	10274	0	0	0	-3010
2087	5591	3046	0	0	10274	0	0	0	-3028
2088	5623	3064	0	0	10274	0	0	0	-3046
2089	5655	3082	0	0	10274	0	0	0	-3064
2090	5687	3100	0	0	10274	0	0	0	-3082
2091	5719	3118	0	0	10274	0	0	0	-3100
2092	5751	3136	0	0	10274	0	0	0	-3118
2093	5783	3154	0	0	10274	0	0	0	-3136
2094	5815	3172	0	0	10274	0	0	0	-3154
2095	5847	3190	0	0	10274	0	0	0	-3172
2096	5879	3208	0	0	10274	0	0	0	-3190
2097	5911	3226	0	0	10274	0	0	0	-3208
2098	5943	3244	0	0	10274	0	0	0	-3226
2099	5975	3262	0	0	10274	0	0	0	-3244
2100	6007	3280	0	0	10274	0	0	0	-3262
2101	6039	3298	0	0	10274	0	0	0	-3280
2102	6071	3316	0	0	10274	0	0	0	-3298
2103	6103	3334	0	0	10274	0	0	0	-3316
2104	6135	3352	0	0	10274	0	0	0	-3334
2105	6167	3370	0	0	10274	0	0	0	-3352
2106	6199	3388	0	0	10274	0	0	0	-3370
2107	6231	3406	0	0	10274	0	0	0	-3388
2108	6263	3424	0	0	10274	0	0	0	-3406
2109	6295	3442	0	0	10274	0	0	0	-3424
2110	6327	3460	0	0	10274	0	0	0	-3442
2111	6359	3478	0	0	10274	0	0	0	-3460
2112	6391	3496	0	0	10274	0	0	0	-3478
2113	6423	3514	0	0	10274	0	0	0	-3496
2114	6455	3532	0	0	10274	0	0	0	-3514
2115	6487	3550	0	0	10274	0	0	0	-3532
2116	6519	3568	0	0	10274	0	0	0	-3550
2117	6551	3586	0	0	10274	0	0	0	-3568
2118	6583	3604	0	0	10274	0	0	0	-3586
2119	6615	3622	0	0	10274	0	0	0	-3604
2120	6647	3640	0	0	10274	0	0	0	-3622
2121	6679	3658	0	0	10274	0	0	0	-3640
2122	6711	3676	0	0	10274	0	0	0	-3658
2123	6743	3694	0	0	10274	0	0	0	-3676
2124	6775	3712	0	0	10274	0	0	0	-3694
2125	6807	3730	0	0	10274	0	0	0	-3712
2126	6839	3748	0	0	10274	0	0	0	-3730
2127	6871	3766	0	0	10274	0	0	0	-3748
2128	6903	3784	0	0	10274	0	0	0	-3766
2129	6935	3802	0	0	10274	0	0	0	-3784
2130	6967	3820	0	0	10274	0	0	0	-3802
2131	6999	3838	0	0	10274	0	0	0	-3820
2132	7031	3856	0	0	10274	0	0	0	-3838
2133	7063	3874	0	0	10274	0	0		

EIRR for Case 5

(1000 Lempire in 1984 Price)

Fig.	YEAR	CASE 1				CASE 2					
		CAPITAL	M/O	T. COST	T. BENEFIT	B-C	CAPITAL	M/O	T. COST	T. BENEFIT	B-C
0	1984										
1	1985	4221	979	4221	-4221	3733	979	3733	-3733	-3733	
2	1986	2241	979	2241	-2241	1304	979	1304	-1304	-1304	
3	1987	28095	1776	28095	-28095	28454	1776	28454	-28454	-28454	
4	1988	24984	1776	24984	-24984	19835	1776	19835	-19835	-19835	
5	1989	22787	1776	22787	-22787	10855	1776	10855	-10855	-10855	
6	1990	17120	979	18099	-7704	23559	979	24538	-7704	-22242	
7	1991	17120	979	18099	-1061	20041	979	21020	-1061	-22061	
8	1992		1776	1776	-4310	10637	979	11616	892	-10724	
9	1993		1776	1776	2522		1776	1776	-3817	-5593	
10	1994		1776	1776	6050		1776	1776	4696	2920	
11	1995		1776	1776	7979		1776	1776	7540	9784	
12	1996		1776	1776	11841		1776	1776	9725	7949	
13	1997		1776	1776	15849		1776	1776	13991	12215	
14	1998		1776	1776	17972		1776	1776	15735	13959	
15	1999		1776	1776	22267		1776	1776	19050	17274	
16	2000		1776	1776	22570		1776	1776	23140	21364	
17	2001		1776	1776	24931		1776	1776	23039	21263	
18	2002		1776	1776	26585		1776	1776	25277	23501	
19	2003		1776	1776	27434		1776	1776	26719	24943	
20	2004		1776	1776	27975		1776	1776	27459	25692	
21	2005		1776	1776	27969		1776	1776	27325	26149	
22	2006		1776	1776	27963		1776	1776	27919	26143	
23	2007		1776	1776	27913		1776	1776	27913	26137	
24	2008		1776	1776	27863		1776	1776	27863	26067	
25	2009		1776	1776	27813		1776	1776	27813	26037	
26	2010	2421	1776	4197	25037	2421	1776	4197	27763	23565	
27	2011		1776	1776	25937		1776	1776	27713	25937	
28	2012	963	1776	2739	24924	963	1776	2739	27663	25887	
29	2013		1776	1776	27613		1776	1776	27613	24874	
30	2014		1776	1776	27563		1776	1776	27563	25787	
31	2015		1776	1776	27513		1776	1776	27513	25737	
32	2016		1776	1776	27463		1776	1776	27463	25687	
33	2017		1776	1776	27413		1776	1776	27413	25637	
34	2018		1776	1776	27363		1776	1776	27363	25587	
35	2019		1776	1776	27313		1776	1776	27313	25537	
36	2020	574	1776	2350	24913	574	1776	2350	27263	24913	
37	2021		1776	1776	27213		1776	1776	27213	25437	
38	2022	497	1776	2273	27163	497	1776	2273	27163	25387	
39	2023		1776	1776	27113		1776	2273	27113	24840	
40	2024		1776	1776	27063		1776	1776	27063	25287	

EIRR= 9.07%

EIRR= 9.91%

Sensitivity Analysis (EIIR for Case-5) (CASE 1)

	Base Case	-10% Benefit
Base Case	8.07	8.37
+10% Cost	8.43	7.74

Sensitivity Analysis (EIIR for Case-5) (CASE 2)

	Base Case	-10% Benefit
Base Case	8.91	8.21
+10% Cost	8.28	7.58

FIRR for Case 5

(1000 Lempira in 1984 price)

No.	YEAR	CASE 1				CASE 2					
		CAPITAL	M/O	T. COST	T. BENEFIT	B-C	CAPITAL	M/O	T. COST	T. BENEFIT	B-C
0	0										
1	1	3500		3500	-3500	3100		3100		-3100	
2	2	1865		1865	-1865	1094		1094		-1094	
3	3	29011		29011	-29011	24831		24831		-24831	
4	4	21697		21697	-21697	17231		17231		-17231	
5	5	19667		19667	-19667	9243		9243		-9243	
6	6	14806	782	15588	-18636	20412	782	21194	-3048	-24242	
7	7	14006	782	15588	-11924	17370	782	18152	3664	-14488	
8	8		1419	1419	501	9985	782	9985	4836	-5147	
9	9		1419	1419	7557		1419	1419	2337	918	
10	10		1419	1419	9603		1419	1419	10178	8759	
11	11		1419	1419	11289		1419	1419	12390	10971	
12	12		1419	1419	13509		1419	1419	14254	12835	
13	13		1419	1419	16163		1419	1419	17410	15991	
14	14		1419	1419	19438		1419	1419	18972	17553	
15	15		1419	1419	24689		1419	1419	21855	20446	
16	16		1419	1419	24905		1419	1419	25450	24041	
17	17		1419	1419	26953		1419	1419	25313	23894	
18	18		1419	1419	29501		1419	1419	27250	25841	
19	19		1419	1419	29170		1419	1419	27250	27110	
20	20		1419	1419	29652		1419	1419	29197	27778	
21	21		1419	1419	29646		1419	1419	29502	28183	
22	22		1419	1419	29639		1419	1419	29586	28177	
23	23		1419	1419	29589		1419	1419	29589	28170	
24	24		1419	1419	29535		1419	1419	29539	28120	
25	25		1419	1419	29469		1419	1419	29469	28070	
26	26	1840	1419	3259	26180	1840	1419	3259	29389	26180	
27	27		1419	1419	27970		1419	1419	29389	27970	
28	28		1419	2151	27189		1419	1419	29339	27920	
29	29		1419	1419	29289		1419	1419	29289	27138	
30	30		1419	1419	29239		1419	1419	29239	27820	
31	31		1419	1419	29189		1419	1419	29189	27770	
32	32		1419	1419	29139		1419	1419	29139	27720	
33	33		1419	1419	29089		1419	1419	29089	27670	
34	34		1419	1419	29039		1419	1419	29039	27620	
35	35		1419	1419	28989		1419	1419	28989	27570	
36	36	436	1419	1855	27084	436	1419	1855	28939	27084	
37	37		1419	1419	27470		1419	1419	28939	27470	
38	38	370	1419	1797	27042	370	1419	1419	28839	27420	
39	39		1419	1419	26789		1419	1797	28789	26992	
40	40		1419	1419	26739		1419	1419	28739	27320	

FIRR=12.08%

FIRR=12.21%

Financial Benefit for Case 5

(1000 Lempira in 1984 price)

YEAR	CASE 1						CASE 2					
	WITHOUT PROJECT		WITH PROJECT		WITH - WITHOUT		WITHOUT PROJECT		WITH PROJECT		WITH - WITHOUT	
	AREA I	AREA II	AREA I	AREA II	AREA I	AREA II	AREA I	AREA II	AREA I	AREA II	AREA I	AREA II
1984	1048	875	0	0	0	0	0	0	0	0	0	0
1985	1080	893	0	0	0	0	0	0	0	0	0	0
1986	1112	911	0	0	0	0	0	0	0	0	0	0
1987	1144	929	0	0	0	0	0	0	0	0	0	0
1988	1176	947	0	0	0	0	0	0	0	0	0	0
1989	1208	965	0	0	0	0	0	0	0	0	0	0
1990	1240	983	-2055	0	-825	0	-983	-3048	0	-2055	-983	-3048
1991	1272	1001	-4655	0	5937	-1001	-1001	3654	0	4655	-1001	3654
1992	1304	1019	5957	0	7181	-3937	-3937	1920	0	5957	-1019	4838
1993	1336	1037	6392	0	7629	2584	2584	8976	0	6392	-3955	2337
1994	1368	1055	7512	0	8880	3510	3510	11022	0	7512	2666	10178
1995	1400	1073	8898	0	10298	3820	3820	12718	0	8898	3492	12390
1996	1432	1091	10452	0	11884	5057	5057	15509	0	10452	3802	14254
1997	1464	1109	12371	0	13635	6792	6792	18163	0	12371	5039	17410
1998	1496	1127	12198	0	13594	8659	8659	20857	0	12198	6774	18972
1999	1528	1145	13224	0	14752	11465	11465	24689	0	13224	9641	21855
2000	1559	1163	14013	0	15573	10892	10892	24905	0	14013	11447	25450
2001	1592	1181	14739	0	16031	12514	12514	26953	0	14739	10874	25333
2002	1624	1199	14936	0	16388	13737	13737	28501	0	14936	12495	27260
2003	1656	1217	15577	0	16465	14350	14350	29170	0	15577	13719	28529
2004	1688	1235	16032	0	16543	14797	14797	29652	0	16032	14342	29197
2005	1720	1253	16823	0	16543	14823	14823	29546	0	16823	14779	29502
2006	1752	1271	17391	0	16543	14848	14848	29539	0	17391	14805	29596
2007	1784	1289	17759	0	16543	14830	14830	29599	0	17759	14830	29583
2008	1816	1307	17727	0	16543	14812	14812	29339	0	17727	14812	29532
2009	1848	1325	17694	0	16543	14794	14794	29489	0	17694	14794	29489
2010	1880	1343	17653	0	16543	14776	14776	29439	0	17653	14776	29439
2011	1912	1361	17631	0	16543	14758	14758	29389	0	17631	14758	29389
2012	1944	1379	17639	0	16543	14740	14740	29339	0	17639	14740	29339
2013	1976	1397	17657	0	16543	14722	14722	29289	0	17657	14722	29289
2014	2008	1415	17635	0	16543	14704	14704	29239	0	17635	14704	29239
2015	2040	1433	17686	0	16543	14686	14686	29189	0	17686	14686	29189
2016	2072	1451	17619	0	16543	14668	14668	29139	0	17619	14668	29139
2017	2104	1469	17619	0	16543	14650	14650	29089	0	17619	14650	29089
2018	2136	1487	17619	0	16543	14632	14632	29039	0	17619	14632	29039
2019	2168	1505	17619	0	16543	14614	14614	28989	0	17619	14614	28989
2020	2200	1523	17619	0	16543	14596	14596	28939	0	17619	14596	28939
2021	2232	1541	17619	0	16543	14578	14578	28889	0	17619	14578	28889
2022	2264	1559	17619	0	16543	14560	14560	28839	0	17619	14560	28839
2023	2296	1577	17619	0	16543	14542	14542	28789	0	17619	14542	28789
2024	2328	1595	17619	0	16543	14524	14524	28739	0	17619	14524	28739

Sensitivity Analysis (FIIR for Case-5) (CASE 1)

	Base Case	-10% Benefit
Base Case	12.21	11.33
+10% Cost	11.41	10.55

Sensitivity Analysis (FIIR for Case-5) (CASE 2)

	Base Case	-10% Benefit
Base Case	12.08	11.20
+10% Cost	11.28	10.43

(i) Budget for a Cocoa Grower  
(3.9ha of cocoa orchard with 0.1ha of basic grain crop)

(Unit : Lempira)

Year	1	2	3	4	5	6	7	8	9	10
(A) M-D Cocoa (/ha)	50	30	46	62	103	110	115	113	113	113
(B) M-D Grain (/ha)	80	80	80	80	80	80	80	80	80	80
(C) M-D required	211	133	195	258	418	445	465	457	457	457
(D) M-D to be paid	-239	-317	-255	-192	-32	-5	15	7	7	7
(E) Wage paid	0	0	0	0	0	0	90	42	42	42
(F) Machine+Input (/ha)	1172	240	395	570	724	753	795	800	800	800
(G) Gross Income (/ha)	0	460	1465	2379	3058	3894	4543	4858	4858	4858
(H) Net Intercrop Income	0	0	0	0	0	0	0	0	0	0
(I) (G)+(F)-(E) (/ha)	-1172	220	1080	1808	2334	3131	3748	4058	4058	4058
(J) Input (Grain)	-4571	898	4212	7051	9103	12211	14617	15855	15855	15855
(K) Water Charge	84	84	84	84	84	84	84	84	84	84
(L) Net Cash Income	624	624	624	624	624	624	624	624	624	624
(M) Credit	-5279	150	3504	5343	8395	11503	13819	15115	15115	15115
(N) D.S. Principal	5000	0	0	0	0	0	0	0	0	0
(O) D.S. Interest	0	0	1000	1000	1000	1000	1000	0	0	0
(P) Wage Earned	0	750	750	600	450	300	150	0	0	0
(Q) Total Cash Inflow	1434	1902	1530	1152	192	30	0	0	0	0
(R) Total Cash Outflow	1155	1302	3284	5895	7137	10233	12669	15115	15115	15115

Note

- (B) : (a)\*3.9+(b)\*0.2
- (C) : (B)-450
- (D) : (C)\*6 [(C)>0 only]
- (H) : (F)+(G)-(E)
- (I) : (H)\*3.9
- (K) : 155(Lps/ha)\*4.0
- (L) : (I)-(D)-(J)-(K)
- (N) : 15%
- (P) : (C)\*(-5) [(C)<0 only]
- (Q) : (L)+(M)+(P)-(N)-(D)



(ii) Budget for an Orange Grover  
 (3.4ha of orange orchard with 0.1ha of basic grain crop)

(Unit : Lempira)

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14
(A) M-D (a) Orange (/ha)	175	93	96	103	110	116	122	122	122	122	122	122	122	122
(A) M-D (b) Grain (/ha)	80	80	80	80	80	80	80	80	80	80	80	80	80	80
(B) M-D required	611	332	308	355	390	410	431	431	431	431	431	431	431	431
(C) M-D to be paid	161	-118	-142	-84	-60	-40	-19	-19	-19	-19	-19	-19	-19	-19
(D) Wage paid	965	0	0	0	0	0	0	0	0	0	0	0	0	0
(E) Machine+Input (/ha)	1242	385	481	604	672	737	969	969	969	969	969	969	969	969
(F) Gross Income (/ha)	0	0	0	220	660	1540	2470	2850	3410	4290	4950	5280	5500	5500
(G) Net Inter-crop Income	0	1000	1000	1000	1000	1000	0	0	0	0	0	0	0	0
(H) (G)+(F)-(E) (/ha)	-1242	604	519	615	988	1743	1501	1881	2441	3321	3981	4311	4531	4531
(I)	-4223	2054	1765	2094	3359	5926	5103	6395	8299	11291	13535	14657	15405	15405
(J) Input (Grain)	84	84	84	84	84	84	84	84	84	84	84	84	84	84
(K) Water Charge	546	546	546	546	546	546	546	546	546	546	546	546	546	546
(L) Net Cash Income	-9919	1424	1135	1464	2729	5236	4473	5765	7669	10561	12905	14027	14775	14775
(M) Credit	7000	0	0	0	0	0	0	0	0	0	0	0	0	0
(N) D.S. Principal	0	0	0	0	0	1000	1000	1000	1000	1000	1000	1000	1000	0
(O) D.S. Interest	0	1050	1050	1050	1050	1050	900	750	600	450	300	150	0	0
(P) Wage Earned	0	708	852	504	360	240	114	114	114	114	114	114	114	114
(Q) Total Cash Inflow	1181	1082	937	916	2039	3486	2687	4129	6183	9325	11719	12291	14889	14889

Note  
 (B) : (a)\*3.4+(b)\*0.2  
 (C) : (B)-450  
 (D) : (C)\*6 [(C)>0 only]  
 (H) : (F)+(G)-(E)  
 (I) : (H)\*3.4  
 (K) : 156(Lps/ha)\*3.5  
 (L) : (I)-(D)-(J)-(K)  
 (N) : 15 %  
 (P) : (C)\*(-6) [(C)<0 only]  
 (Q) : (L)+(M)+(P)-(N)-(O)



## **APPENDIX I: THE MASTER PLAN**



## I. COMMENTS ON THE MASTER PLAN

### 1. Climate and Hydrology

Hydrological data was collected from several different resources, and was presented in the Master Plan, some of which were utilized in the Feasibility Study.

One of the main objectives of the Master Plan was planning of dams for the flood control of all Aguan River Basin, and the accuracy of the flood analysis was sufficiently high. On the other hand, it seems that, some of the drought analysis for the purpose of the irrigation planning will be needed for the further study.

In the Master Plan, the hydrology was analyzed for all Aguan River Basin, however in the Feasibility Study the hydrological analysis for only the project area was carried out. Therefore, some differences will be found out in the method and content.

### 2. Soils

In the Master Plan, two soil maps prepared by OEA at a scale of 1/1,000,000 (1962) and by CONSUPLANE/UN at a scale of 1/200,000 are attached. Based on the latter, the Master Plan describes soil characteristics of the Valley. This map was elaborated in consultation with the topographic map (scale: 1/500,000) which was produced using photographic contact print (scale: 1/40,000).

The soil studying the Master Plan includes soil classification and fertility analysis of each soil symbol. The F/S was guided for its fieldwork consulting aforementioned two maps. These maps were very useful for the study, because the distribution of soils has close relation with the topographic conditions. There are differences in area and scopes to cover between the Master Plan and Feasibility Study. In the Feasibility Study, soil classification was made in accordance with the existing soil maps and soils are categorized by prevailing conditions of topography and vegetation. As a result, soil maps for the project area has been produced revising the existing two maps and the details of the soil property became clear from field observation and laboratory analysis.

### 3. Agricultural production

#### (1) Crop yield

It is reported that yields for rice, maize and beans in Honduras are 1.38 ton/ha, 1.05 ton/ha and 0.55 ton/ha. The survey in the Master Plan indicates higher yields for all of these crops, which was identified by the field survey of the Feasibility Study. According to the Master Plan, with the introduction of irrigation system and highly advanced cropping technology, the yields of these three crops are expected to reach in the future: 5 ton/ha for rice, 5 - 7 ton/ha for maize and 1.5 - 2 ton/ha for beans, which was taken into account for establishment of crop yield in the F/S.

(2) Non-traditional crops for export

Consulting with the considerations in the Master Plan, such crops as plantain, cassava, taro, cocoa, oranges, mango, papaya, tomato and soybeans have been proposed as non-traditional crops to be established in the Project.

(3) Net return of crops

In the Master Plan, labor cost is not included in calculating cost for the production of crops, and net return is estimated based on the return/day/man method. In the Feasibility Study, on the contrary, the cost estimation was made including labor cost so as to comply with prevailing practice in this country. On the other hand, yield, price and gross return were established referring to the Master Plan.

4. Livestock

In the Master Plan, the livestock production in the Valley is estimated in lower level, but, as a result of field surveying the Feasibility Study, the trend of the livestock production has changed recently in the Project area in the following manners:

- (1) The breeds of cattle such as Brown Swiss, Holstein etc. have been introduced and practiced.
- (2) The improvement of pasture has been unexpectedly achieved at a higher level. About 80 percent of total pasture has already been improved.
- (3) Piggery and poultry farming projects have been launched in the Project area. Through these projects, the interest in producing such livestock has increasing among medium- and small-scale farmers.
- (4) The freshwater fish (Tirpia and carp) culture has already commenced in the neighboring region of the Project area.

As a result, it is considered that the productivity of livestock in the area has increased now compared with at the time of the Master Plan Study.

On the other hand, the demands for the consumption of pork, egg etc. have also increased not only in the Project area but also in the whole country.

In these contexts, in the Feasibility Study, the first task was to examine the productivity of livestock on mentioned in the Master Plan and, then, the feasibility for the introduction of medium- and small-scale farming for piggery and poultry and the freshwater fish culture which were not referred to in the Master Plan was studied.